

FES 12-24 • DOE/EIS-0403

Final Programmatic Environmental Impact Statement (PEIS) for Solar Energy Development in Six Southwestern States

Volume 7
Comments and Responses

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Bureau of Land Management
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Final Programmatic Environmental Impact Statement (PEIS) for Solar Energy Development in Six Southwestern States (FES 12-24; DOE/EIS-0403)

Responsible Agencies: The U.S. Department of the Interior (DOI) Bureau of Land Management (BLM) and the U.S. Department of Energy (DOE) are co-lead agencies. Nineteen cooperating agencies participated in the preparation of this PEIS: U.S. Department of Defense; U.S. Bureau of Reclamation; U.S. Fish and Wildlife Service; U.S. National Park Service; U.S. Environmental Protection Agency, Region 9; U.S. Army Corps of Engineers, South Pacific Division; Arizona Game and Fish Department; California Energy Commission; California Public Utilities Commission; Nevada Department of Wildlife; N-4 Grazing Board, Nevada; Utah Public Lands Policy Coordination Office; Clark County, Nevada, including Clark County Department of Aviation; Doña Ana County, New Mexico; Esmeralda County, Nevada; Eureka County, Nevada; Lincoln County, Nevada; Nye County, Nevada; and Saguache County, Colorado.

Locations: Arizona, California, Colorado, Nevada, New Mexico, and Utah.

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Abstract: The BLM and DOE have jointly prepared this PEIS to evaluate actions that the agencies are considering taking to further facilitate utility-scale solar energy development in six southwestern states.¹ For the BLM, this includes the evaluation of a new Solar Energy Program applicable to solar development on BLM-administered lands. For DOE, it includes the evaluation of developing new guidance to further facilitate utility-scale solar energy development and maximize the mitigation of associated potential environmental impacts. This Solar PEIS evaluates the potential environmental, social, and economic effects of the agencies' proposed actions and alternatives in accordance with the National Environmental Policy Act (NEPA), the Council on Environmental Quality's regulations for implementing NEPA (Title 40, Parts 1500–1508 of the *Code of Federal Regulations* [40 CFR Parts 1500–1508]), and applicable BLM and DOE authorities.

For the BLM, the Final Solar PEIS analyzes a no action alternative, under which solar energy development would continue on BLM-administered lands in accordance with the terms and conditions of the BLM's existing solar energy policies, and two action alternatives that involve implementing a new BLM Solar Energy Program that would allow the permitting of future solar energy development projects on public lands to proceed in a more efficient, standardized, and environmentally responsible manner. The proposed program would establish right-of-way authorization policies and design features applicable to all utility-scale solar energy development on BLM-administered lands. It would identify categories of lands to be excluded from utility-scale solar energy development and specific locations well suited for utility-scale production of solar energy where the BLM would prioritize development (i.e., solar energy zones or SEZs). The proposed action would also allow for responsible utility-scale solar development on lands outside of priority areas.

¹ Utility-scale facilities are defined as projects that generate electricity that is delivered into the electricity transmission grid, generally with capacities greater than 20 megawatts (MW).

For DOE, the Final PEIS analyzes a no action alternative, under which DOE would continue to address environmental concerns for DOE-supported solar projects on a case-by-case basis, and an action alternative, under which DOE would adopt programmatic environmental guidance for use in DOE-supported solar projects.

The BLM and DOE initiated the Solar PEIS process in May 2008. On December 17, 2010, the BLM and DOE published the Draft Solar PEIS. Subsequently, on October 28, 2011, the lead agencies published the Supplement to the Draft Solar PEIS, in which adjustments were made to elements of BLM's proposed Solar Energy Program to better meet BLM's solar energy objectives, and in which DOE's proposed programmatic environmental guidance was presented.

SOLAR PEIS CONTENTS

VOLUME 1

Executive Summary

Chapter 1: Introduction

Chapter 2: Description of Alternatives and Reasonably Foreseeable Development Scenario

Chapter 3: Update to Overview of Solar Energy Power Production Technologies, Development, and Regulation

Chapter 4: Update to Affected Environment

Chapter 5: Update to Impacts of Solar Energy Development and Potential Mitigation Measures

Chapter 6: Analysis of BLM's Solar Energy Development Alternatives

Chapter 7: Analysis of DOE's Alternatives

Chapter 14: Update to Consultation and Coordination Undertaken to Support Preparation of the PEIS

Chapter 15: List of Preparers

Chapter 16: Glossary

VOLUME 2

Chapter 8: Update to Affected Environment and Impact Assessment for Proposed Solar Energy Zones in Arizona

Chapter 9: Update to Affected Environment and Impact Assessment for Proposed Solar Energy Zones in California

VOLUME 3

Chapter 10: Update to Affected Environment and Impact Assessment for Proposed Solar Energy Zones in Colorado

VOLUME 4

Chapter 11: Update to Affected Environment and Impact Assessment for Proposed Solar Energy Zones in Nevada

VOLUME 5

Chapter 12: Update to Affected Environment and Impact Assessment for Proposed Solar Energy Zones in New Mexico

Chapter 13: Update to Affected Environment and Impact Assessment for Proposed Solar Energy Zones in Utah

SOLAR PEIS CONTENTS (Cont.)

VOLUME 6

- Appendix A: Current and Proposed Bureau of Land Management Solar Energy Development Policies and Design Features
- Appendix B: Approved and Pending Solar Applications
- Appendix C: Proposed BLM Land Use Plan Amendments under the BLM Action Alternatives of the Solar Energy Development Programmatic Environmental Impact Statement
- Appendix D: Update to Summary of Regional Initiatives and State Plans for Solar Energy Development and Transmission Development to Support Renewable Energy Development
- Appendix E: Update to Methods for Estimating Reasonably Foreseeable Development Scenarios for Solar Energy Development
- Appendix F: Update to Solar Energy Technology Overview
- Appendix G: Update to Transmission Constraint Analysis
- Appendix H: Update to Federal, State, and County Requirements Potentially Applicable to Solar Energy Projects
- Appendix I: Update to Ecoregions of the Six-State Study Area and Land Cover Types of the Proposed Solar Energy Zones
- Appendix J: Special Status Species Associated with BLM's Alternatives in the Six-State Study Area
- Appendix K: Update to Government-to-Government and Cultural Resource Consultations
- Appendix L: Update to GIS Data Sources and Methodology
- Appendix M: Update to Methodologies and Data Sources for the Analysis of Impacts of Solar Energy Development on Resources
- Appendix N: Update to Viewshed Maps for Proposed Solar Energy Zones
- Appendix O: Intermittent/Ephemeral Stream Evaluation and Groundwater Modeling Analyses

VOLUME 7

Comments and Responses for the Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States

VOLUME 7 CONTENTS

1
2
3
4 NOTATION xi
5
6 ENGLISH/METRIC AND METRIC/ENGLISH EQUIVALENTS xxiv
7
8 1 INTRODUCTION 1
9
10 2 SUMMARY OF THE MAJOR ISSUES RAISED BY THE COMMENTORS
11 ON THE DRAFT SOLAR PEIS AND ON THE SUPPLEMENT TO THE
12 DRAFT SOLAR PEIS AND THE AGENCIES’ RESPONSES 5
13
14 3 RESPONSES TO COMMENTS 7
15
16 3.1 Comments on Solar Energy Zones 7
17 3.1.1 Brenda SEZ..... 7
18 3.1.2 Bullard Wash SEZ 8
19 3.1.3 Gillespie SEZ..... 8
20 3.1.4 Imperial East SEZ..... 9
21 3.1.5 Iron Mountain SEZ 10
22 3.1.6 Pisgah SEZ..... 10
23 3.1.7 Riverside East SEZ 12
24 3.1.8 Antonito Southeast SEZ..... 13
25 3.1.9 De Tilla Gulch SEZ 14
26 3.1.10 Fourmile East SEZ..... 15
27 3.1.11 Los Mogotes East SEZ 16
28 3.1.12 Amargosa Valley SEZ 16
29 3.1.13 Delamar Valley SEZ..... 18
30 3.1.14 Dry Lake SEZ 19
31 3.1.15 Dry Lake Valley North SEZ 19
32 3.1.16 East Mormon Mountain SEZ..... 20
33 3.1.17 Gold Point SEZ..... 21
34 3.1.18 Millers SEZ..... 22
35 3.1.19 Afton SEZ..... 22
36 3.1.20 Mason Draw SEZ..... 23
37 3.1.21 Red Sands SEZ 24
38 3.1.22 Escalante Valley SEZ 25
39 3.1.23 Milford Flats South SEZ..... 25
40 3.1.24 Wah Wah Valley SEZ..... 26
41 3.2 Comments on Siting..... 27
42 3.2.1 General Comments on Siting..... 27
43 3.2.2 Exclusion Areas 28
44 3.2.2.1 Requests To Add Exclusion Areas 29
45 3.2.2.2 Requests To Add Buffer Zones 29
46 3.2.2.3 Wildlife Habitat Exclusions and SRMA Exclusions 30

CONTENTS (Cont.)

1			
2			
3			
4		3.2.2.4	Requests to Exclude Lands with Wilderness
5			Characteristics..... 31
6		3.2.3	Environmental Concerns Related to Siting..... 31
7		3.2.4	Concerns Related to Siting Solar Facilities near Residences 31
8		3.2.5	Concerns Related to Siting Solar Facilities near
9			National Parks..... 32
10		3.2.6	Slope and Solar Insolation Exclusions..... 32
11	3.3		Comments on Design Features and Mitigation..... 33
12		3.3.1	Design Features..... 33
13		3.3.2	Regional Mitigation Planning 35
14	3.4		Comments on the Reasonably Foreseeable Development Scenario 36
15		3.4.1	General Comments on the RFDS 36
16		3.4.2	Appropriateness of the RFDS 38
17	3.5		Infrastructure: Transmission and Roads 39
18		3.5.1	Transmission Line Assumptions and Capacity Constraints 39
19		3.5.2	Substations 40
20		3.5.3	Access Road Assumptions..... 40
21		3.5.4	Updated Transmission Analysis Methods and Impact
22			Assessment..... 40
23		3.5.5	Transmission Corridors..... 42
24		3.5.6	Transmission Planning, Policies, and Incentives..... 42
25	3.6		Public Involvement and NEPA Compliance..... 43
26		3.6.1	Public Involvement 43
27		3.6.2	Government-to-Government Consultation 44
28		3.6.3	Cooperators and Local Government Participation..... 46
29		3.6.3.1	Cooperators and Government Participation..... 46
30		3.6.3.2	Local Government Participation..... 47
31		3.6.3.3	State and Regional Participation..... 48
32		3.6.4	Adequacy of NEPA Analysis 50
33		3.6.5	Need for Supplementation of the Draft Solar PEIS 51
34	3.7		Policy 52
35		3.7.1	Need for an Energy Plan 52
36		3.7.2	Equity/Local Impacts..... 52
37		3.7.2.1	Impacts on the San Luis Valley Community 53
38		3.7.3	Variance Process..... 54
39		3.7.4	Conflicts with Existing or Proposed ROWs 55
40		3.7.5	Long-Term Monitoring and Adaptive Management 55
41		3.7.6	New Policy Recommendations..... 56
42		3.7.7	BLM Land Use Planning..... 57
43		3.7.8	Treatment of Climate Change in the Solar PEIS 58
44		3.7.9	Rental Policy and Lease Rates..... 59
45		3.7.10	ROWs and Leases..... 60
46		3.7.11	Competitive Leasing 60

CONTENTS (Cont.)

1			
2			
3			
4	3.7.12	Solar PEIS Consistency with BLM Policy Instruction	
5		Memoranda	61
6	3.7.13	Bonding and Reclamation.....	61
7	3.7.14	SEZ Authorizations and Incentives	62
8	3.7.15	Solar ROW Authorization Policies.....	62
9	3.7.16	Solar PEIS Consistency with Local Plans	63
10	3.7.17	Withdrawal of SEZ Lands	64
11	3.7.18	Solar PEIS Relation to the California Desert Protection Act	
12		and Plan.....	64
13	3.7.19	Small-Scale Solar Projects on Public Lands.....	65
14	3.7.20	Tiering of Future NEPA Analysis to the Solar PEIS.....	65
15	3.7.21	Visual Resource Management Strategies	66
16	3.7.22	Policy Regarding Desert Tortoise Connectivity Areas.....	66
17	3.7.23	Work Identified in SEZ Action Plans	67
18	3.8	New SEZs and Related Projects	67
19	3.8.1	Recommendations for Specific New SEZs and SEZ	
20		Expansions	68
21	3.8.2	The California DRECP	69
22	3.8.3	The Arizona RDEP	70
23	3.8.4	West Chocolate Mountains SEZ Possibility	70
24	3.8.5	West Mojave SEZ Possibility	71
25	3.9	Purpose and Need for the Solar PEIS	71
26	3.10	Concerns Regarding Loss of Multiple Land Use.....	73
27	3.11	Applications for Solar Energy ROWs.....	74
28	3.11.1	Fast-Track Projects	74
29	3.11.2	Pending Applications.....	75
30	3.11.3	New Applications	75
31	3.12	Solar Energy Technology Selection and Impact Evaluation	76
32	3.13	Relevant Laws and Executive Orders	77
33	3.14	Alternatives Evaluated in the Solar PEIS	78
34	3.14.1	SEZ Program Alternative.....	78
35	3.14.2	Solar Energy Development Program Alternative	79
36	3.14.3	BLM No Action Alternative	80
37	3.14.4	BLM Modified SEZ Alternative.....	80
38	3.14.5	Development on BLM-Administered Lands	82
39	3.14.6	DOE's Proposed Program.....	82
40		3.14.6.1 DOE's Program and Guidance	82
41		3.14.6.2 Siting of DOE-Supported Projects.....	84
42	3.14.7	Distributed Generation Alternative.....	85
43	3.14.8	Other Suggested Alternatives	86
44	3.15	Technical Resource Area Assessments.....	87
45	3.15.1	Lands and Realty	87
46		3.15.1.1 Design Features for Lands and Realty.....	87

CONTENTS (Cont.)

1			
2			
3			
4		3.15.1.2 Multiple-Use Concerns	87
5		3.15.1.3 Impacts on Adjacent Lands.....	88
6		3.15.1.4 Use of Previously Disturbed Lands	89
7	3.15.2	Specially Designated Areas and Lands with Wilderness	
8		Characteristics.....	90
9		3.15.2.1 Inadequate Wilderness Mapping	90
10		3.15.2.2 Design Features for Specially Designated Areas.....	90
11		3.15.2.3 Affected Environment Assessment for Specially	
12		Designated Areas	91
13		3.15.2.4 Specially Designated Areas near Colorado SEZs.....	91
14	3.15.3	Livestock and Grazing	92
15		3.15.3.1 Compensation for Permittee Losses	92
16		3.15.3.2 Disagreement with Livestock Grazing Impact	
17		Assessment Methodology	93
18		3.15.3.3 Range Improvements	93
19		3.15.3.4 Design Features for Livestock Grazing	94
20		3.15.3.5 Comments Opposing Solar Development Due to	
21		Grazing Impacts	94
22	3.15.4	Wild Horses and Burros.....	95
23		3.15.4.1 Impacts on Wild Horse and Burro Water Sources.....	95
24	3.15.5	Recreation Impacts	95
25		3.15.5.1 Multiple-Use Concerns for Recreation	95
26		3.15.5.2 Impacts on Recreation from the Colorado SEZs	97
27		3.15.5.3 Design Features for Recreation.....	97
28	3.15.6	Military and Civilian Aviation Impacts	98
29		3.15.6.1 Design Features for Military and Civilian Aviation	98
30		3.15.6.2 SEZ-Specific Technology Restrictions.....	99
31		3.15.6.3 General Impacts on Military Operations	99
32		3.15.6.4 Impacts on the NTTR	100
33	3.15.7	Geologic Setting and Soil Resources.....	101
34		3.15.7.1 Vegetation Clearing	101
35		3.15.7.2 Soil Erosion.....	102
36		3.15.7.3 Soil-Related Diseases	103
37		3.15.7.4 Protection of Carbon Capture	103
38		3.15.7.5 Soil Deposition by Wind.....	103
39		3.15.7.6 Mitigation of Soil-Related Impacts.....	103
40		3.15.7.7 Project Design and Geologic Hazards	105
41		3.15.7.8 Geology of Specific SEZs.....	106
42	3.15.8	Minerals	106
43		3.15.8.1 Mineral Inventory and Impacts of Development.....	106
44	3.15.9	Water Resources	107
45		3.15.9.1 Water Use	107
46			

CONTENTS (Cont.)

1
2
3
4 3.15.9.2 Water Rights and Management..... 109
5 3.15.9.3 Surface/Ephemeral Water 109
6 3.15.9.4 Groundwater 110
7 3.15.9.5 Water Quality..... 111
8 3.15.9.6 Design Features for Water Resources..... 111
9 3.15.9.7 SEZ Boundary Changes Related to Water..... 112
10 3.15.10 Ecological Resources: Vegetation 112
11 3.15.10.1 Design Features for Vegetation 112
12 3.15.10.2 Groundwater Habitats for Vegetation..... 113
13 3.15.10.3 Vegetation Surveys 113
14 3.15.10.4 Minimizing Impacts on Vegetation 113
15 3.15.10.5 Invasive Species and Restoration 114
16 3.15.10.6 Missing Information or Additional Information
17 Needed 114
18 3.15.10.7 Selection of Impact Levels for Evaluation 114
19 3.15.10.8 Impacts on Surface Water Habitats 115
20 3.15.11 Ecological Resources: Wildlife 115
21 3.15.11.1 Night Lighting Impacts on Wildlife..... 115
22 3.15.11.2 SEZ Boundary Changes Related to Wildlife..... 116
23 3.15.11.3 More Detailed Analyses for Wildlife..... 116
24 3.15.11.4 Pre-disturbance Surveys for Wildlife 117
25 3.15.11.5 Requests for Wildlife-Related Exclusions..... 117
26 3.15.11.6 Cumulative Impacts Related to Wildlife 118
27 3.15.11.7 Species Status Updates for Wildlife 119
28 3.15.11.8 Additional Information on Wildlife..... 119
29 3.15.11.9 Design Features for Wildlife..... 120
30 3.15.11.10 Habitat Fragmentation 120
31 3.15.11.11 Habitat Loss and Species Displacement 121
32 3.15.11.12 Impacts of Power Towers on Birds..... 121
33 3.15.12 Ecological Resources: Aquatic Biota 122
34 3.15.12.1 Ephemeral Aquatic Habitats 122
35 3.15.12.2 Effects of Water Use on Aquatic Habitats..... 122
36 3.15.12.3 Design Features for Aquatic Biota..... 123
37 3.15.13 Ecological Resources: Special Status Species 123
38 3.15.13.1 Policy and Regulations for Special Status Species..... 123
39 3.15.13.2 Design Features for Special Status Species 124
40 3.15.13.3 Requests for Exclusions Related to Special Status
41 Species 125
42 3.15.13.4 Additional Analyses Needed for Special Status
43 Species 125
44 3.15.13.5 Pre-disturbance Surveys for Special Status Species 126
45 3.15.13.6 Cumulative Impacts on Special Status Species 127
46 3.15.13.7 Section 7 Compliance 127

CONTENTS (Cont.)

1			
2			
3			
4		3.15.13.8 Translocation of Special Status Species	128
5		3.15.13.9 Updates to Species, Status, and Distribution	129
6		3.15.13.10 Mitigation and California Fully Protected Species	129
7	3.15.14	Air Quality Impacts and Climate	129
8		3.15.14.1 Carbon Balance and GHGs	129
9		3.15.14.2 Use of Outdated Data	130
10		3.15.14.3 Avoided Emissions	131
11		3.15.14.4 General Conformity with State Implementation	
12		Plans	131
13		3.15.14.5 Design Features for Air Quality	131
14		3.15.14.6 Consistency of Results	132
15		3.15.14.7 Project-Specific Air Quality Comments	132
16		3.15.14.8 Desert Pavement and Biological Soil Crusts	133
17		3.15.14.9 Requests for Air Quality Monitoring	133
18		3.15.14.10 Request for Exclusions Related to Air Quality	134
19		3.15.14.11 Issues Not Considered in Air Quality Analyses	134
20		3.15.14.12 Operational Fugitive Dust	135
21		3.15.14.13 Requests for Additional Air Quality Analysis	136
22	3.15.15	Visual Resources	137
23		3.15.15.1 General Visual Resources Comments	137
24		3.15.15.2 Design Features for Visual Resources	138
25		3.15.15.3 Night Sky Impacts	139
26		3.15.15.4 Future Assessments for Visual Resources	141
27		3.15.15.5 Visual Resource Inventory and Management	142
28		3.15.15.6 Cumulative Impacts on Visual Resources	144
29		3.15.15.7 Visual Resource Impacts for the Proposed	
30		Amargosa Valley SEZ	145
31		3.15.15.8 Visual Resource Impacts for the Proposed	
32		Colorado SEZs	145
33		3.15.15.9 Visual Resource Impacts for the Proposed Gold	
34		Point SEZ	146
35		3.15.15.10 Visual Resource Impacts for the Proposed	
36		Riverside East SEZ	146
37	3.15.16	Acoustic Environment	147
38		3.15.16.1 Noise Impacts on Wildlife	147
39		3.15.16.2 Design Features for Noise	148
40		3.15.16.3 Additional Modeling and Analysis Requests for	
41		Noise	149
42		3.15.16.4 Requests for Exclusions Related to Noise	149
43		3.15.16.5 Noise Impacts for the Proposed Riverside	
44		East SEZ	150
45		3.15.16.6 Noise Impacts for the Proposed Amargosa	
46		Valley SEZ	150

CONTENTS (Cont.)

1			
2			
3			
4	3.15.17	Paleontological Resources	151
5		3.15.17.1 General Comments on Paleontological	
6		Resources	151
7		3.15.17.2 Access Road Impacts on Paleontological	
8		Resources	151
9	3.15.18	Cultural Resources	152
10		3.15.18.1 General Comments on Cultural Resources	152
11		3.15.18.2 Requests for Exclusions Related to Cultural	
12		Resources	152
13		3.15.18.3 BLM Alternatives Related to Cultural Resources	152
14		3.15.18.4 Impacts on National Historic Trails	153
15		3.15.18.5 Additional Information on Cultural Resources.....	154
16		3.15.18.6 Policy Issues Related to Cultural Resources.....	154
17		3.15.18.7 Evaluation of Impacts on Cultural Resources.....	155
18		3.15.18.8 Design Features for Cultural Resources	156
19		3.15.18.9 Tribal Consultation	157
20		3.15.18.10 Section 106 and Cultural Resource Surveys.....	159
21	3.15.19	Native American Concerns.....	161
22		3.15.19.1 Requests for Exclusions Related to Native	
23		American Concerns.....	161
24		3.15.19.2 Impact Assessment for Native American	
25		Concerns	161
26		3.15.19.3 Design Features for Native American	
27		Concerns/Resource Avoidance	162
28		3.15.19.4 BLM Alternatives Related to Native American	
29		Concerns	163
30		3.15.19.5 Section 106 and Native American Concerns	164
31		3.15.19.6 Consultation with Native American Tribes	165
32		3.15.19.7 Ethnographic Studies	167
33		3.15.19.8 Requested Corrections to Analysis for Native	
34		American Concerns.....	167
35		3.15.19.9 Other Native American Concerns.....	168
36		3.15.19.10 Policy Related to Native American Concerns	169
37		3.15.19.11 Tribal Lands.....	169
38	3.15.20	Socioeconomics	170
39		3.15.20.1 Local Economic Benefits.....	170
40		3.15.20.2 Socioeconomic Impacts on Local Government	172
41		3.15.20.3 Socioeconomic Impacts of Road Construction.....	174
42		3.15.20.4 Socioeconomic Impacts on Recreation.....	175
43		3.15.20.5 Assumptions, Models, and Data Used for	
44		Socioeconomic Analyses	176
45		3.15.20.6 Property Values.....	177
46			

CONTENTS (Cont.)

1			
2			
3			
4		3.15.20.7 Socioeconomic Impacts on Historic and Cultural	
5		Resources and Ranching.....	178
6		3.15.20.8 Socioeconomic Impacts on Grazing	178
7		3.15.20.9 Design Features for Socioeconomic Impacts.....	179
8		3.15.20.10 Economic Viability of Solar Projects	180
9	3.15.21	Environmental Justice.....	180
10		3.15.21.1 Impacts on Agriculture	180
11		3.15.21.2 Methods, Data, and Scope of Environmental	
12		Justice Analysis.....	181
13		3.15.21.3 Design Features for Environmental Justice	182
14		3.15.21.4 Project Scale Related to Environmental Justice	183
15	3.15.22	Transportation.....	183
16		3.15.22.1 Transportation Access for Solar Facilities.....	183
17		3.15.22.2 Infrastructure Costs.....	184
18		3.15.22.3 Impacts on Railroads	184
19		3.15.22.4 Transportation Network Fragmentation.....	185
20		3.15.22.5 Transportation: Requested Text Revisions	185
21		3.15.22.6 Environmental Impacts from New Routes and	
22		Increased Traffic	185
23	3.15.23	Health and Safety.....	186
24		3.15.23.1 General Health Concerns	186
25		3.15.23.2 Design Features for Health and Safety	186
26		3.15.23.3 Safety and Risks from Terrorism.....	187
27		3.15.23.4 Soil-borne Diseases Including Valley Fever	187
28		3.15.23.5 Glint and Glare Hazard.....	187
29	3.15.24	Cumulative Impact Assessment.....	187
30		3.15.24.1 General Comments on Cumulative Effects	187
31		3.15.24.2 Adequacy of Cumulative Impact Analysis	188
32		3.15.24.3 Recreation and Vehicle Use and Cumulative	
33		Impacts.....	189
34		3.15.24.4 Regional Industrialization.....	190
35		3.15.24.5 Landscape-Scale Impact Analysis	190
36		3.15.24.6 Water Issues for Cumulative Impacts.....	191
37		3.15.24.7 Desert Tortoise and Wildlife Cumulative Impact	
38		Analysis	192
39		3.15.24.8 Cumulative Impacts of Transmission	
40		Infrastructure.....	193
41		3.15.24.9 Cumulative Impacts: General Concerns	194
42		3.15.24.10 Cumulative Impacts Assessment for the Proposed	
43		Brenda SEZ.....	195
44		3.15.24.11 Cumulative Impacts Assessment for the Proposed	
45		Imperial East SEZ.....	195
46			

CONTENTS (Cont.)

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46

	3.15.24.12 Cumulative Impacts Assessment for the Proposed Riverside East SEZ	196
	3.15.24.13 Cumulative Impacts Assessment for the Proposed Colorado SEZs	197
	3.15.24.14 Cumulative Impacts Assessment for the Proposed Amargosa Valley SEZ	198
	3.15.24.15 Cumulative Impacts Assessment for the Proposed Dry Lake SEZ	200
	3.15.24.16 Cumulative Impacts Assessment for the Proposed Dry Lake Valley North SEZ	200
	3.15.24.17 Cumulative Impacts Assessment for the Proposed Millers SEZ.....	202
	3.15.25 Hazardous Materials and Wastes	203
	3.16 Solar Energy Development Advantages and Problems	203
	3.16.1 General Comments in Support of Developing Solar Energy Resources	203
	3.16.2 Comments Opposing Solar Development and Use of Public Lands.....	204
	3.16.3 Comments Opposing Utility-Scale Solar Development	204
	3.17 Other Issues.....	206
	3.17.1 Distributed Generation.....	206
	3.17.2 Conservation and Demand-Side Management	207
	3.17.3 Analysis of Life-Cycle Impacts of Solar Energy Development	208
	3.17.4 Analysis of Development on Other Federal, State, or Private Lands	208
	3.17.5 Development on Previously Disturbed Lands	209
	3.17.6 Restricting Development to Populated Areas.....	210
	3.18 Topics Outside the Scope of the Solar PEIS or Not Requiring a Response	210
	3.18.1 Requests for Analysis of Non-solar Technologies	210
	3.18.2 Comments Regarding Government Subsidies for Solar Development.....	211
	3.18.3 General Comments for Which No Response Was Required	211
	3.19 Factual Errors or Editorial Considerations and Requests for Text Changes.....	211
4	CAMPAIGNS.....	269
	4.1 Campaign Letters Submitted for the Draft Solar PEIS	269
	4.1.1 National Wildlife Federation Action Fund, Comment Document Numbers 11509 and 11510	269
	4.1.2 The Wilderness Society, Comment Document Number Solar_034.....	271

CONTENTS (Cont.)

1			
2			
3			
4	4.1.3	Sierra Club, Comment Document Number Solar_053	271
5	4.1.4	Natural Resources Defense Council, Comment Document	
6		Number Solar_054	272
7	4.1.5	Defenders of Wildlife, Comment Document Number	
8		Solar_055	273
9	4.1.6	National Parks Conservation Association, Comment	
10		Document Number Solar_058	273
11	4.1.7	Unidentified Organization	274
12	4.2	Campaign Letters Submitted for the Supplement to the Draft Solar PEIS	275
13	4.2.1	National Wildlife Federation, Comment Document	
14		Number 20122	275
15	4.2.2	Defenders of Wildlife, Comment Document Number 20135	275
16	4.2.3	Sierra Club, Comment Document Number SolarS_022	276
17	4.2.4	National Parks Conservation Association, Comment	
18		Document Number SolarS_023	276
19	4.2.5	Natural Resources Defense Council, Comment Document	
20		Number SolarS_024	277
21	4.2.6	The Wilderness Society, Comment Document Number	
22		SolarS_028	278
23			
24			

TABLES

25			
26			
27			
28	1-1	Catalog Scheme for Solar PEIS Comment Documents	2
29			
30	3-1	Comments Submitted on the Draft Solar PEIS or the Supplement	
31		to the Draft Solar PEIS via the Project Web Site, by Mail, or Orally	
32		during Public Meetings	212
33			
34	4-1	Organizations Whose Members Submitted Campaign Letters on	
35		the Draft Solar PEIS or the Supplement to the Draft Solar PEIS	270
36			

NOTATION

The following is a list of acronyms and abbreviations, chemical names, and units of measure used in this document. Some acronyms used only in tables may be defined only in those tables.

GENERAL ACRONYMS AND ABBREVIATIONS

10	AADT	annual average daily traffic
11	AASHTO	American Association of State Highway and Transportation Officials
12	AC	alternating current
13	ACC	air-cooled condenser
14	ACEC	Area of Critical Environmental Concern
15	ADEQ	Arizona Department of Environmental Quality
16	ACHP	Advisory Council on Historic Preservation
17	ADOT	Arizona Department of Transportation
18	ADWR	Arizona Department of Water Resources
19	AERMOD	AMS/EPA Regulatory Model
20	AFC	Application for Certification
21	AGL	above ground level
22	AIM	Assessment, Inventory and Monitoring
23	AIRFA	American Indian Religious Freedom Act
24	AMA	active management area
25	AML	animal management level
26	ANHP	Arizona National Heritage Program
27	APE	area of potential effect
28	APLIC	Avian Power Line Interaction Committee
29	APP	Avian Protection Plan
30	APS	Arizona Public Service
31	AQCR	Air Quality Control Region
32	AQRV	air quality-related value
33	ARB	Air Resources Board
34	ARRA	American Recovery and Reinvestment Act of 2009
35	ARRTIS	Arizona Renewable Resource and Transmission Identification Subcommittee
36	ARS	Agricultural Research Service
37	ARZC	Arizona and California
38	ATSDR	Agency for Toxic Substances and Disease Registry
39	AUM	animal unit month
40	AVSE	Arlington Valley Solar Energy
41	AVWS	Audio Visual Warning System
42	AWBA	Arizona Water Banking Authority
43	AWEA	American Wind Energy Association
44	AWRM	Active Water Resource Management
45	AZDA	Arizona Department of Agriculture
46	AZGFD	Arizona Game and Fish Department

1	AZGS	Arizona Geological Survey
2		
3	BA	biological assessment
4	BAP	base annual production
5	BEA	Bureau of Economic Analysis
6	BISON-M	Biota Information System of New Mexico
7	BLM	Bureau of Land Management
8	BLM-CA	Bureau of Land Management, California
9	BMP	best management practice
10	BNSF	Burlington Northern Santa Fe
11	BO	biological opinion
12	BOR	U.S. Bureau of Reclamation
13	BPA	Bonneville Power Administration
14	BRAC	Blue Ribbon Advisory Council on Climate Change
15	BSE	Beacon Solar Energy
16	BSEP	Beacon Solar Energy Project
17	BTS	Bureau of Transportation Statistics
18		
19	CAA	Clean Air Act
20	CAAQS	California Air Quality Standards
21	CAISO	California Independent System Operator
22	Caltrans	California Department of Transportation
23	C-AMA	California-Arizona Maneuver Area
24	CAP	Central Arizona Project
25	CARB	California Air Resources Board
26	CAReGAP	California Regional Gap Analysis Project
27	CASQA	California Stormwater Quality Association
28	CASTNET	Clean Air Status and Trends NETwork
29	CAWA	Colorado Agricultural Water Alliance
30	CCC	Civilian Conservation Corps
31	CDC	Centers for Disease Control and Prevention
32	CDCA	California Desert Conservation Area
33	CDFG	California Department of Fish and Game
34	CDNCA	California Desert National Conservation Area
35	CDOT	Colorado Department of Transportation
36	CDOW	Colorado Division of Wildlife (now Colorado Parks and Wildlife)
37	CDPHE	Colorado Department of Public Health and Environment
38	CDWR	California Department of Water Resources
39	CEC	California Energy Commission
40	CEQ	Council on Environmental Quality
41	CES	constant elasticity of substitution
42	CESA	California Endangered Species Act
43	CESF	Carrizo Energy Solar Farm
44	CFR	<i>Code of Federal Regulations</i>
45	CGE	computable general equilibrium
46	CHAT	crucial habitat assessment tool

1	CIRA	Cooperative Institute for Research in the Atmosphere
2	CLFR	compact linear Fresnel reflector
3	CNDDDB	California Natural Diversity Database
4	CNEL	community noise equivalent level
5	CNHP	Colorado National Heritage Program
6	Colorado DWR	Colorado Division of Water Resources
7	CO ₂ e	carbon dioxide equivalent
8	CPC	Center for Plant Conservation
9	CPUC	California Public Utilities Commission
10	CPV	concentrating photovoltaic
11	CRBSCF	Colorado River Basin Salinity Control Forum
12	CREZ	competitive renewable energy zone
13	CRPC	Cultural Resources Preservation Council
14	CRSCP	Colorado River Salinity Control Program
15	CSA	Candidate Study Area
16	CSC	Coastal Services Center
17	CSFG	carbon-sequestration fossil generation
18	CSP	concentrating solar power
19	CSQA	California Stormwater Quality Association
20	CSRI	Cultural Systems Research, Incorporated
21	CTG	combustion turbine generator
22	CTPG	California Transmission Planning Group
23	CTSR	Cumbres & Toltec Scenic Railroad
24	CUP	Conditional Use Permit
25	CVP	Central Valley Project
26	CWA	Clean Water Act
27	CWCB	Colorado Water Conservation Board
28	CWHR	California Wildlife Habitat Relationship System
29		
30	DC	direct current
31	DEM	digital elevation model
32	DHS	U.S. Department of Homeland Security
33	DIMA	Database for Inventory, Monitoring and Assessment
34	DLT	dedicated-line transmission
35	DNA	Determination of NEPA Adequacy
36	DNI	direct normal insulation
37	DNL	day-night average sound level
38	DoD	U.S. Department of Defense
39	DOE	U.S. Department of Energy
40	DOI	U.S. Department of the Interior
41	DOL	U.S. Department of Labor
42	DOT	U.S. Department of Transportation
43	DRECP	California Desert Renewable Energy Conservation Plan
44	DSM	demand-side management
45	DSRP	Decommissioning and Site Reclamation Plan
46	DTC/C-AMA	Desert Training Center/California–Arizona Maneuver Area

1	DWMA	Desert Wildlife Management Area
2	DWR	Division of Water Resources
3		
4	EA	environmental assessment
5	EBID	Elephant Butte Irrigation District
6	ECAR	East Central Area Reliability Coordination Agreement
7	ECOS	Environmental Conservation Online System (USFWS)
8	EERE	Energy Efficiency and Renewable Energy (DOE)
9	Eg	band gap energy
10	EIA	Energy Information Administration (DOE)
11	EIS	environmental impact statement
12	EISA	Energy Independence and Security Act of 2007
13	EMF	electromagnetic field
14	E.O.	Executive Order
15	EPA	U.S. Environmental Protection Agency
16	EPRI	Electric Power Research Institute
17	EQIP	Environmental Quality Incentives Program
18	ERCOT	Electric Reliability Council of Texas
19	ERO	Electric Reliability Organization
20	ERS	Economic Research Service
21	ESA	Endangered Species Act of 1973
22	ESRI	Environmental Systems Research Institute
23		
24	FAA	Federal Aviation Administration
25	FBI	Federal Bureau of Investigation
26	FEMA	Federal Emergency Management Agency
27	FERC	Federal Energy Regulatory Commission
28	FHWA	Federal Highway Administration
29	FIRM	Flood Insurance Rate Map
30	FLPMA	Federal Land Policy and Management Act of 1976
31	FONSI	Finding of No Significant Impact
32	FR	<i>Federal Register</i>
33	FRCC	Florida Reliability Coordinating Council
34	FSA	Final Staff Assessment
35	FTE	full-time equivalent
36	FY	fiscal year
37		
38	G&TM	generation and transmission modeling
39	GCRP	U.S. Global Climate Research Program
40	GDA	generation development area
41	GHG	greenhouse gas
42	GIS	geographic information system
43	GMU	game management unit
44	GPS	global positioning system
45	GTM	Generation and Transmission Model
46		

1	GUAC	Groundwater Users Advisory Council
2	GWP	global warming potential
3		
4	HA	herd area
5	HAP	hazardous air pollutant
6	HAZCOM	hazard communication
7	HCE	heat collection element
8	HCP	Habitat Conservation Plan
9	HMA	herd management area
10	HMMH	Harris Miller Miller & Hanson, Inc.
11	HRSG	heat recovery steam generator
12	HSPD	Homeland Security Presidential Directive
13	HTF	heat transfer fluid
14	HUC	hydrologic unit code
15	HVAC	heating, ventilation, and air-conditioning
16		
17	I	Interstate
18	IARC	International Agency for Research on Cancer
19	IBA	important bird area
20	ICE	internal combustion engine
21	ICPDS	Imperial County Planning & Development Services
22	ICWMA	Imperial County Weed Management Area
23	IDT	interdisciplinary team
24	IEC	International Electrochemical Commission
25	IFR	instrument flight rule
26	IID	Imperial Irrigation District
27	IM	Instruction Memorandum
28	IMPS	Iron Mountain Pumping Station
29	IMS	interim mitigation strategy
30	INA	Irrigation Non-Expansion Area
31	IOP	Interagency Operating Procedure
32	IOU	investor-owned utility
33	IPCC	Intergovernmental Panel on Climate Change
34	ISA	Independent Science Advisor; Instant Study Area
35	ISB	Intermontane Seismic Belt
36	ISCC	integrated solar combined cycle
37	ISDRA	Imperial Sand Dunes Recreation Area
38	ISEGS	Ivanpah Solar Energy Generating System
39	ISO	independent system operator; iterative self-organizing
40	ITFR	Interim Temporary Final Rulemaking
41	ITP	incidental take permit
42	IUCNNR	International Union for Conservation of Nature and Natural Resources
43	IUCNP	International Union for Conservation of Nature Pakistan
44		
45	KGA	known geothermal resources area
46	KML	keyhole markup language

1	KOP	key observation point
2	KSLA	known sodium leasing area
3		
4	LCC	Landscape Conservation Cooperative
5	LCCRDA	Lincoln County Conservation, Recreation, and Development Act of 2004
6	LCOE	levelized cost of energy
7	L _{dn}	day-night average sound level
8	LDWMA	Low Desert Weed Management Area
9	L _{eq}	equivalent sound pressure level
10	LiDAR	light detection and ranging
11	LLA	limited land available
12	LLRW	low-level radioactive waste (waste classification)
13	LPN	listing priority number
14	LRG	Lower Rio Grande
15	LSA	lake and streambed alteration
16	LSE	load-serving entity
17	LTMP	long-term monitoring and adaptive management plan
18	LTVA	long-term visitor area
19		
20	MAAC	Mid-Atlantic Area Council
21	MAIN	Mid-Atlantic Interconnected Network
22	MAPP	methyl acetylene propadiene stabilizer; Mid-Continent Area Power Pool
23	MCAS	Marine Corps Air Station
24	MCL	maximum contaminant level
25	MEB	Marine Expeditionary Brigade
26	MFP	Management Framework Plan
27	MIG	Minnesota IMPLAN Group
28	MLA	maximum land available
29	MOA	military operating area
30	MOU	Memorandum of Understanding
31	MPDS	maximum potential development scenario
32	MRA	Multiple Resource Area
33	MRI	Midwest Research Institute
34	MRO	Midwest Reliability Organization
35	MSDS	Material Safety Data Sheet
36	MSL	mean sea level
37	MTR	military training route
38	MVEDA	Mesilla Valley Economic Development Alliance
39	MWA	Mojave Water Agency
40	MWD	Metropolitan Water District
41	MWMA	Mojave Weed Management Area
42		
43	NAAQS	National Ambient Air Quality Standard(s)
44	NADP	National Atmospheric Deposition Program
45	NAGPRA	Native American Graves Protection and Repatriation Act
46	NAHC	Native American Heritage Commission (California)

1	NAIC	North American Industrial Classification System
2	NASA	National Aeronautics and Space Administration
3	NCA	National Conservation Area
4	NCCAC	Nevada Climate Change Advisory Committee
5	NCDC	National Climatic Data Center
6	NCES	National Center for Education Statistics
7	NDAA	National Defense Authorization Act
8	NDCNR	Nevada Department of Conservation and Natural Resources
9	NDEP	Nevada Division of Environmental Protection
10	NDOT	Nevada Department of Transportation
11	NDOW	Nevada Department of Wildlife
12	NDWP	Nevada Division of Water Planning
13	NDWR	Nevada Division of Water Resources
14	NEAP	Natural Events Action Plan
15	NEC	National Electric Code
16	NED	National Elevation Database
17	NEP	Natural Events Policy
18	NEPA	National Environmental Policy Act of 1969
19	NERC	North American Electricity Reliability Corporation
20	NGO	non-governmental organization
21	NHA	National Heritage Area
22	NHD	National Hydrography Dataset
23	NHNM	National Heritage New Mexico
24	NHPA	National Historic Preservation Act of 1966
25	NID	National Inventory of Dams
26	NLCS	National Landscape Conservation System
27	NMAC	<i>New Mexico Administrative Code</i>
28	NMBGMR	New Mexico Bureau of Geology and Mineral Resources
29	NMDGF	New Mexico Department of Game and Fish
30	NM DOT	New Mexico Department of Transportation
31	NMED	New Mexico Environment Department
32	NMED-AQB	New Mexico Environment Department-Air Quality Board
33	NMFS	National Marine Fisheries Service
34	NMOSE	New Mexico Office of the State Engineer
35	NMSU	New Mexico State University
36	NNHP	Nevada Natural Heritage Program
37	NNL	National Natural Landmark
38	NNSA	National Nuclear Security Administration
39	NOA	Notice of Availability
40	NOAA	National Oceanic and Atmospheric Administration
41	NOI	Notice of Intent
42	NP	National Park
43	NPDES	National Pollutant Discharge Elimination System
44	NPL	National Priorities List
45	NPS	National Park Service
46	NPV	net present value

1	NRA	National Recreation Area
2	NRCS	Natural Resources Conservation Service
3	NREL	National Renewable Energy Laboratory
4	NRHP	<i>National Register of Historic Places</i>
5	NRS	<i>Nevada Revised Statutes</i>
6	NSC	National Safety Council
7	NSO	no surface occupancy
8	NSTC	National Science and Technology Council
9	NTHP	National Trust for Historic Preservation
10	NTS	Nevada Test Site
11	NTTR	Nevada Test and Training Range
12	NVCRS	Nevada Cultural Resources Inventory System
13	NV DOT	Nevada Department of Transportation
14	NWCC	National Wind Coordinating Committee
15	NWI	National Wetlands Inventory
16	NWIS	National Water Information System (USGS)
17	NWPP	Northwest Power Pool
18	NWR	National Wildlife Refuge
19	NWSRS	National Wild and Scenic River System
20		
21	O&M	operation and maintenance
22	ODFW	Oregon Department of Fish and Wildlife
23	OHV	off-highway vehicle
24	ONA	Outstanding Natural Area
25	ORC	organic Rankine cycle
26	OSE/ISC	Office of the State Engineer/Interstate Stream Commission
27	OSHA	Occupational Safety and Health Administration
28	OTA	Office of Technology Assessment
29		
30	PA	Programmatic Agreement
31	PAD	Preliminary Application Document
32	PAH	polycyclic aromatic hydrocarbon
33	PAT	peer analysis tool
34	PCB	polychlorinated biphenyl
35	PCM	purchase change material
36	PCS	power conditioning system
37	PCU	power converting unit
38	PEIS	programmatic environmental impact statement
39	PFYC	potential fossil yield classification
40	PGH	Preliminary General Habitat
41	PIER	Public Interest Energy Research
42	P.L.	Public Law
43	PLSS	Public Land Survey System
44	PM	particulate matter
45	PM _{2.5}	particulate matter with a diameter of 2.5 µm or less
46	PM ₁₀	particulate matter with a diameter of 10 µm or less

1	POD	plan of development
2	POU	publicly owned utility
3	PPA	Power Purchase Agreement
4	P-P-D	population-to-power density
5	PPE	personal protective equipment
6	PPH	Preliminary Priority Habitat
7	PSD	Prevention of Significant Deterioration
8	PURPA	Public Utility Regulatory Policy Act
9	PV	photovoltaic
10	PVID	Palo Verde Irrigation District
11	PWR	public water reserve
12		
13	QRA	qualified resource area
14		
15	R&I	relevance and importance
16	RAC	Resource Advisory Council
17	RCE	Reclamation Cost Estimate
18	RCI	residential, commercial, and industrial (sector)
19	RCRA	Resource Conservation and Recovery Act of 1976
20	RD&D	research, development, and demonstration; research, development, and
21		deployment
22	RDBMS	Relational Database Management System
23	RDEP	Restoration Design Energy Project
24	REA	Rapid Ecoregional Assessment
25	REAT	Renewable Energy Action Team
26	REDA	Renewable Energy Development Area
27	REDI	Renewable Energy Development Infrastructure
28	REEA	Renewable Energy Evaluation Area
29	ReEDS	Regional Energy Deployment System
30	REPG	Renewable Energy Policy Group
31	RETA	Renewable Energy Transmission Authority
32	RETAAC	Renewable Energy Transmission Access Advisory Committee
33	RETI	Renewable Energy Transmission Initiative
34	REZ	renewable energy zone
35	RF	radio frequency
36	RFC	Reliability First Corporation
37	RFDS	reasonably foreseeable development scenario
38	RGP	Rio Grande Project
39	RGWCD	Rio Grande Water Conservation District
40	RMP	Resource Management Plan
41	RMPA	Rocky Mountain Power Area
42	RMZ	Resource Management Zone
43	ROD	Record of Decision
44	ROI	region of influence
45	ROS	recreation opportunity spectrum
46	ROW	right-of-way

1	RPG	renewable portfolio goal
2	RPS	Renewable Portfolio Standard
3	RRC	Regional Reliability Council
4	RSEP	Rice Solar Energy Project
5	RSI	Renewable Systems Interconnection
6	RTO	regional transmission organization
7	RTTF	Renewable Transmission Task Force
8	RV	recreational vehicle
9		
10	SAAQS	State Ambient Air Quality Standard(s)
11	SAMHSA	Substance Abuse and Mental Health Services Administration
12	SCADA	supervisory control and data acquisition
13	SCE	Southern California Edison
14	SCRMA	Special Cultural Resource Management Area
15	SDRREG	San Diego Regional Renewable Energy Group
16	SDWA	Safe Drinking Water Act of 1974
17	SEGIS	Solar Energy Grid Integration System
18	SEGS	Solar Energy Generating System
19	SEI	Sustainable Energy Ireland
20	SEIA	Solar Energy Industrial Association
21	SES	Stirling Energy Systems
22	SETP	Solar Energy Technologies Program (DOE)
23	SEZ	solar energy zone
24	SHPO	State Historic Preservation Office(r)
25	SIP	State Implementation Plan
26	SLRG	San Luis & Rio Grande
27	SMA	Special Management Area
28	SMART	specific, measurable, achievable, relevant, and time sensitive
29	SMP	suggested management practice
30	SNWA	Southern Nevada Water Authority
31	SPP	Southwest Power Pool
32	SRMA	Special Recreation Management Area
33	SSA	Socorro Seismic Anomaly
34	SSI	self-supplied industry
35	ST	solar thermal
36	STG	steam turbine generator
37	SUA	special use airspace
38	SWAT	Southwest Area Transmission
39	SWIP	Southwest Intertie Project
40	SWPPP	Stormwater Pollution Prevention Plan
41	SWReGAP	Southwest Regional Gap Analysis Project
42		
43	TAP	toxic air pollutant
44	TCC	Transmission Corridor Committee
45	TDS	total dissolved solids
46	TEPPC	Transmission Expansion Planning Policy Committee

1	TES	thermal energy storage
2	TRACE	Transmission Routing and Configuration Estimator
3	TSA	Transportation Security Administration
4	TSCA	Toxic Substances Control Act of 1976
5	TSDF	treatment, storage, and disposal facility
6	TSP	total suspended particulates
7		
8	UACD	Utah Association of Conservation Districts
9	UBWR	Utah Board of Water Resources
10	UDA	Utah Department of Agriculture
11	UDEQ	Utah Department of Environmental Quality
12	UDNR	Utah Department of Natural Resources
13	UDOT	Utah Department of Transportation
14	UDWQ	Utah Division of Water Quality
15	UDWR	Utah Division of Wildlife Resources
16	UGS	Utah Geological Survey
17	UNEP	United Nations Environmental Programme
18	UNPS	Utah Native Plant Society
19	UP	Union Pacific
20	UREZ	Utah Renewable Energy Zone
21	USACE	U.S. Army Corps of Engineers
22	USAF	U.S. Air Force
23	USC	<i>United States Code</i>
24	USDA	U.S. Department of Agriculture
25	USFS	U.S. Forest Service
26	USFWS	U.S. Fish and Wildlife Service
27	USGS	U.S. Geological Survey
28	Utah DWR	Utah Division of Water Rights
29	UTTR	Utah Test and Training Range
30	UWS	Underground Water Storage, Savings and Replenishment Act
31		
32	VACAR	Virginia–Carolinas Subregion
33	VCRS	Visual Contrast Rating System
34	VFR	visual flight rule
35	VOC	volatile organic compound
36	VRHCRP	Virgin River Habitat Conservation & Recovery Program
37	VRI	Visual Resource Inventory
38	VRM	Visual Resource Management
39		
40	WA	Wilderness Area
41	WECC	Western Electricity Coordinating Council
42	WECC CAN	Western Electricity Coordinating Council–Canada
43	WEG	wind erodibility group
44	Western	Western Area Power Administration
45	WGA	Western Governors’ Association
46	WGFD	Wyoming Game and Fish Department

1	WHA	wildlife habitat area
2	WHO	World Health Organization
3	WIA	Wyoming Infrastructure Authority
4	WRAP	Water Resources Allocation Program; Western Regional Air Partnership
5	WRCC	Western Regional Climate Center
6	WREZ	Western Renewable Energy Zones
7	WRI	Water Resources Research Institute
8	WSA	Wilderness Study Area
9	WSC	wildlife species of special concern
10	WSMR	White Sands Missile Range
11	WSR	Wild and Scenic River
12	WSRA	Wild and Scenic Rivers Act of 1968
13	WWII	World War II
14	WWP	Western Watersheds Project
15		
16	YPG	Yuma Proving Ground
17		
18	ZITA	zone identification and technical analysis
19	ZLD	zero liquid discharge

20
21

22 **CHEMICALS**

23				
24	CH ₄	methane	NO ₂	nitrogen dioxide
25	CO	carbon monoxide	NO _x	nitrogen oxides
26	CO ₂	carbon dioxide		
27			O ₃	ozone
28	H ₂ S	hydrogen sulfide		
29	Hg	mercury	Pb	lead
30				
31	N ₂ O	nitrous oxide	SF ₆	sulfur hexafluoride
32	NH ₃	ammonia	SO ₂	sulfur dioxide
			SO _x	sulfur oxides

33
34

35 **UNITS OF MEASURE**

36				
37	ac-ft	acre-foot (feet)	dB	A-weighted decibel(s)
38	bhp	brake horsepower		
39			°F	degree(s) Fahrenheit
40	°C	degree(s) Celsius	ft	foot (feet)
41	cf	cubic foot (feet)	ft ²	square foot (feet)
42	cfs	cubic foot (feet) per second	ft ³	cubic foot (feet)
43	cm	centimeter(s)		
44			g	gram(s)
45	dB	decibel(s)	gal	gallon(s)

1	GJ	gigajoule(s)	MWe	megawatt(s) electric
2	gpcd	gallon per capita per day	MWh	megawatt-hour(s)
3	gpd	gallon(s) per day		
4	gpm	gallon(s) per minute	ppm	part(s) per million
5	GW	gigawatt(s)	psi	pound(s) per square inch
6	GWh	gigawatt hour(s)	psia	pound(s) per square inch absolute
7	GWh/yr	gigawatt hour(s) per year		
8			rpm	rotation(s) per minute
9	h	hour(s)		
10	ha	hectare(s)	s	second(s)
11	Hz	hertz	scf	standard cubic foot (feet)
12				
13	in.	inch(es)	TWh	terawatt hour(s)
14				
15	J	joule(s)	VdB	vibration velocity decibel(s)
16				
17	K	degree(s) Kelvin	W	watt(s)
18	kcal	kilocalorie(s)		
19	kg	kilogram(s)	yd ²	square yard(s)
20	kHz	kilohertz	yd ³	cubic yard(s)
21	km	kilometer(s)	yr	year(s)
22	km ²	square kilometer(s)		
23	kPa	kilopascal(s)	µg	microgram(s)
24	kV	kilovolt(s)	µm	micrometer(s)
25	kVA	kilovolt-ampere(s)		
26	kW	kilowatt(s)		
27	kWh	kilowatt-hour(s)		
28	kWp	kilowatt peak		
29				
30	L	liter(s)		
31	lb	pound(s)		
32				
33	m	meter(s)		
34	m ²	square meter(s)		
35	m ³	cubic meter(s)		
36	mg	milligram(s)		
37	Mgal	million gallons		
38	mi	mile(s)		
39	mi ²	square mile(s)		
40	min	minute(s)		
41	mm	millimeter(s)		
42	MMt	million metric ton(s)		
43	MPa	megapascal(s)		
44	mph	mile(s) per hour		
45	MVA	megavolt-ampere(s)		
46	MW	megawatt(s)		

ENGLISH/METRIC AND METRIC/ENGLISH EQUIVALENTS

The following table lists the appropriate equivalents for English and metric units.

Multiply	By	To Obtain
<i>English/Metric Equivalents</i>		
acres	0.004047	square kilometers (km ²)
acre-feet (ac-ft)	1,234	cubic meters (m ³)
cubic feet (ft ³)	0.02832	cubic meters (m ³)
cubic yards (yd ³)	0.7646	cubic meters (m ³)
degrees Fahrenheit (°F) –32	0.5555	degrees Celsius (°C)
feet (ft)	0.3048	meters (m)
gallons (gal)	3.785	liters (L)
gallons (gal)	0.003785	cubic meters (m ³)
inches (in.)	2.540	centimeters (cm)
miles (mi)	1.609	kilometers (km)
miles per hour (mph)	1.609	kilometers per hour (kph)
pounds (lb)	0.4536	kilograms (kg)
short tons (tons)	907.2	kilograms (kg)
short tons (tons)	0.9072	metric tons (t)
square feet (ft ²)	0.09290	square meters (m ²)
square yards (yd ²)	0.8361	square meters (m ²)
square miles (mi ²)	2.590	square kilometers (km ²)
yards (yd)	0.9144	meters (m)
<i>Metric/English Equivalents</i>		
centimeters (cm)	0.3937	inches (in.)
cubic meters (m ³)	0.00081	acre-feet (ac-ft)
cubic meters (m ³)	35.31	cubic feet (ft ³)
cubic meters (m ³)	1.308	cubic yards (yd ³)
cubic meters (m ³)	264.2	gallons (gal)
degrees Celsius (°C) +17.78	1.8	degrees Fahrenheit (°F)
hectares (ha)	2.471	acres
kilograms (kg)	2.205	pounds (lb)
kilograms (kg)	0.001102	short tons (tons)
kilometers (km)	0.6214	miles (mi)
kilometers per hour (kph)	0.6214	miles per hour (mph)
liters (L)	0.2642	gallons (gal)
meters (m)	3.281	feet (ft)
meters (m)	1.094	yards (yd)
metric tons (t)	1.102	short tons (tons)
square kilometers (km ²)	247.1	acres
square kilometers (km ²)	0.3861	square miles (mi ²)
square meters (m ²)	10.76	square feet (ft ²)
square meters (m ²)	1.196	square yards (yd ²)

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VOLUME 7:

**COMMENTS AND RESPONSES FOR THE PROGRAMMATIC ENVIRONMENTAL
IMPACT STATEMENT FOR SOLAR ENERGY DEVELOPMENT
IN SIX SOUTHWESTERN STATES**

1 INTRODUCTION

10 This volume of the *Programmatic Environmental Impact Statement (PEIS) for Solar*
11 *Energy Development in Six Southwestern States* (Solar PEIS) contains summaries of public
12 comments on the Draft Solar PEIS and the Supplement to the Draft Solar PEIS, along with
13 responses to those comments from the U.S. Department of the Interior (DOI) Bureau of Land
14 Management (BLM) and the U.S. Department of Energy (DOE).
15

16 The Notice of Availability (NOA) of the Draft Solar PEIS was published in Volume 75,
17 page 78980, of the *Federal Register* on December 17, 2010 (75 FR 78980). This began a public
18 comment period, which lasted from December 17, 2010, to May 2, 2011. Fourteen public
19 meetings were held during the comment period on the Draft Solar PEIS. Comments on the Draft
20 Solar PEIS were submitted via the Solar PEIS project Web site (<http://solareis.anl.gov>), by mail,
21 and orally at public meetings. Several nongovernmental organizations submitted comments in
22 the form of standardized campaign letters from their constituents. Six campaigns were submitted
23 on the Draft Solar PEIS, with more than 86,000 individuals represented. In addition,
24 approximately 1,950 comment documents were received on the Draft Solar PEIS,¹ and about
25 150 comment statements were received orally at public meetings. Comments were received from
26 individual members of the public; federal, state, and local governmental agencies; tribes; solar
27 companies and solar industry organizations; environmental organizations; utilities; ranchers;
28 water districts; and many other types of organizations. While comments were received from
29 individuals and organizations from many of the 50 states, comments were primarily received
30 from the organization and individuals in the six-state study area.
31

32 In response to comments on the Draft Solar PEIS providing suggestions on how the BLM
33 and DOE could increase the utility of the analysis, strengthen elements of the BLM's proposed
34 Solar Energy Program, and increase certainty regarding solar energy development on
35 BLM-administered lands, the BLM and DOE published a Supplement to the Draft Solar PEIS.
36 The NOA of the Supplement to the Draft Solar PEIS was published in Volume 76, page 66958,
37 of the *Federal Register* on October 28, 2011 (76 FR 66958). This began a public comment
38 period, which lasted from October 28, 2011 to January 27, 2012. The agencies convened five
39 public meetings on the Supplement; one meeting in the San Luis Valley of Colorado was not
40 originally planned but was added in response to stakeholder requests.
41

¹ A "comment document" refers to the entire submittal provided by a commentor, whether in writing or verbally during one of the public meetings. Each comment document, in turn, may have one or more individual comments and may address more than one topic. In some cases, comment documents contain only a single substantive comment. In most cases, comment documents contain more than one substantive comment.

1 Comments on the Supplement to the Draft Solar PEIS were received from the same broad
 2 cross-section of entities that commented on the Draft Solar PEIS. Comments were submitted via
 3 the Solar PEIS project Web site, by mail, and orally at public meetings. Six campaigns were
 4 submitted on the Supplement to the Draft PEIS, with more than 134,000 individuals represented.
 5 In addition, approximately 250 comment documents were received from individuals and
 6 organizations, and about 64 comment statements were received orally at public meetings.
 7

8 All comment documents received during the public comment periods were cataloged and
 9 considered in preparing the Final Solar PEIS. As comment documents were received, they were
 10 assigned a unique identifying number. As shown in Table 1, comments documents on the Draft
 11 Solar PEIS that were received electronically via the Solar PEIS project Web site were labeled
 12 “SEDD” (for “Solar Energy Development Draft”) and assigned sequential numbers starting with
 13 10001 (e.g., SEDD10001). Comment documents on the Supplement to the Draft Solar PEIS that
 14 were received electronically via the Solar PEIS project Web site were labeled “SEDDsupp” and
 15 assigned sequential numbers starting with 20001 (e.g., SEDDsupp20001).² Comment documents
 16 received by mail were labeled “Solar_” for the Draft Solar PEIS and “SolarS_” for the
 17 Supplement to the Draft Solar PEIS and were assigned sequential numbers starting with the
 18 number 001 (e.g., Solar_001 and SolarS_001). Oral and written comment documents provided at
 19 public meetings were similarly labeled but with the addition of two letters denoting the location
 20 of the public meeting (see Table 1); for the Draft Solar PEIS, numbers began at 001 for each
 21 meeting location, and for the Supplement to the Draft Solar PEIS, numbers began at 01.
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TABLE 1-1 Catalog Scheme for Solar PEIS Comment Documents

Source	Comment Document Code	
	Draft Solar PEIS	Supplement to the Draft Solar PEIS
Solar PEIS project Web site	SEDD_10001 ^a	SEDDsupp_20001
Public meeting ^b	Solar_AL_001	SolarS_AL_01
Mail	Solar_001	SolarS_001

^a SEDD = Solar Energy Development Draft.

^b Initials denote the location of the public meeting: AL = Alamosa, Colorado; BA = Barstow, California; CC = Cedar City, Utah; CL = Caliente, Nevada; DC = Washington, D.C.; EC = El Centro, California; GF = Goldfield, Nevada; IW = Indian Wells, California; LC = Las Cruces, New Mexico; LV = Las Vegas, Nevada; PD = Palm Desert, California; PH = Phoenix, Arizona; SA = Sacramento, California; SL = Salt Lake City, Utah; and TU = Tucson, Arizona.

² Two comments on the Supplement to the Draft Solar PEIS submitted via the Web site were numbered 11908 and 11909, because they were submitted before the official start of the public comment period when the numbering scheme was changed.

1 Each comment document was reviewed to identify individual substantive comments.
2 Individual comments were assigned unique numbers associated with the document number.
3 For example, individual comments from document SEDD_10001 would be numbered
4 SEDD_10001-1, SEDD_10001-2, SEDD_10001-3, and so forth.
5

6 Copies of all comment documents received on the Draft Solar PEIS and Supplement to
7 the Draft Solar PEIS, as well as transcripts of comments delivered orally during the public
8 meetings, are available on the Solar PEIS project Web site and are provided on the CD that is
9 included with Volume 7 of the Final Solar PEIS. The comment numbers for the comment
10 documents are shown on the confirmation sheets provided through the project Web site or
11 printed on the right margin of the first page of the comment document for comments received by
12 mail or delivered orally during the public meetings.
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1 **2 SUMMARY OF THE MAJOR ISSUES RAISED BY THE COMMENTORS**
2 **ON THE DRAFT SOLAR PEIS AND ON THE SUPPLEMENT TO THE**
3 **DRAFT SOLAR PEIS AND THE AGENCIES' RESPONSES**
4
5

6 Commentors on the Draft Solar PEIS identified 18 major topics of concern. These topics
7 included concerns about appropriate siting of solar facilities, BLM policies regarding right-of-
8 way (ROW) authorizations for solar facilities on BLM-administered lands, DOE's environmental
9 guidance for solar facility projects supported by that agency, transmission constraints and
10 evaluation methods, environmental concerns regarding solar development, the adequacy of the
11 alternatives being evaluated by the agencies, stakeholder participation, and several others.
12

13 In response to comments received on the Draft Solar PEIS, the lead agencies prepared
14 and released the Supplement to the Draft Solar PEIS. Through the Supplement, adjustments were
15 made to many elements of the proposed Solar Energy Program, and new elements were added.
16 The BLM modified its preferred alternative in the Supplement to emphasize its commitment to
17 development in solar energy zones (SEZs). Efforts were made to ensure that SEZs would not be
18 located in high-conflict areas; a protocol for identifying new SEZs was provided; and incentives
19 for projects within SEZs were outlined. In addition, the BLM revisited ongoing state-based
20 planning efforts to ensure that such efforts could result in the identification of new SEZs. While
21 the BLM's preferred alternative as presented in the Supplement to the Draft Solar PEIS and the
22 Final Solar PEIS emphasizes the use and creation of SEZs for utility-scale solar energy
23 development, it also includes a proposed variance process that would accommodate responsible
24 development outside of SEZs.
25

26 Specifically with regard to the SEZs, through the Supplement the BLM modified the list
27 of SEZs being carried forward for consideration in the Solar PEIS. Some of the SEZs analyzed
28 in the Draft Solar PEIS were found to have substantial resource conflicts that made them
29 inappropriate locations to prioritize utility-scale solar energy development. The BLM decided
30 to drop some SEZs entirely from further consideration based on the comments received on the
31 Draft Solar PEIS and additional data collection that took place after the Draft was issued. The
32 BLM also decided to adjust the boundaries of some SEZs that would be carried forward in the
33 Solar PEIS. The BLM dropped the following previously proposed SEZs: Bullard Wash in
34 Arizona, Iron Mountain and Pisgah in California, Delamar Valley and East Mormon Mountain in
35 Nevada, and Mason Draw and Red Sands in New Mexico. In addition, the areas of the following
36 SEZs were substantially reduced: Riverside East in California; De Tilla Gulch, Fourmile East,
37 and Los Mogotes East in Colorado; Amargosa Valley, Dry Lake, and Dry Lake Valley North in
38 Nevada; and Afton in New Mexico. The overall result of these changes was to reduce the total
39 acreage potentially available for development in proposed SEZs from about 677,000 acres
40 (2,740 km²) to about 285,000 acres (1,153 km²).
41

42 In the Supplement to the Draft Solar PEIS, DOE presented proposed programmatic
43 environmental guidance that would be used by DOE to further integrate environmental
44 considerations into its analysis and selection of proposed solar projects. DOE used the
45 information about environmental impacts provided in the Draft Solar PEIS and other information
46 to develop the draft programmatic guidance. In the Final Solar PEIS, DOE has identified the
47 proposed action as its preferred alternative.

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1 **3 RESPONSES TO COMMENTS**

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4 Presented below in Sections 3.1 through 3.19 are summaries of the 18 major topics
5 identified by the agencies that capture the substantive concerns raised in the comments received
6 on the Draft Solar PEIS and the Supplement to the Draft Solar PEIS, and the agencies' responses
7 to address those comments.
8

9 Table 3-1, which follows the summaries and responses to major topics, lists all the
10 organizations and individuals that provided comments on the Draft Solar PEIS and the
11 Supplement to the Draft Solar PEIS via the project Web site, by mail, or orally at the public
12 meetings. The comment document number assigned to each submittal and the comment response
13 number or numbers for the agencies' responses that address the concerns raised in that submittal
14 are also provided in Table 3-1. Thus, to identify the agencies' responses to a particular
15 commentor's concerns, an interested party can look up a commentor's name or organization,
16 locate the corresponding comment response numbers that identify the agencies' response to the
17 issue raised by the commentor, and review the responses presented in this section.
18
19

20 **3.1 COMMENTS ON SOLAR ENERGY ZONES**

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22
23 **3.1.1 Brenda SEZ**

24
25 **Summary:** In general, comments on the Draft Solar PEIS stated that the proposed
26 Brenda SEZ would likely be an appropriate SEZ, assuming that required design features to
27 protect soil, water, and air and water quality would be complied with, and that washes would be
28 avoided. Commentors stated that the SEZ was actually located only 12 mi (19 km) from existing
29 transmission, rather than 19 mi (31 km) as stated in the Draft. It was suggested that the
30 possibility of tying the SEZ into the Central Arizona Project (CAP) transmission line be
31 investigated. Comments suggested adjusting the boundaries to avoid Bouse and Tyson washes in
32 the northwestern and northeastern corners of the Brenda SEZ.
33

34 **Response:** On the basis of additional analysis and comments received regarding the
35 proposed Brenda SEZ, the BLM revised the SEZ boundaries. The area of Bouse Wash on the
36 east side of the SEZ and the area on the west side of the SEZ to the west of the county road 28
37 were eliminated (a total of 530 acres [2.1 km²]). Excluding the area of Bouse Wash will avoid
38 impacts on habitats and species that utilize the wash. Eliminating the area of the SEZ west of the
39 county road avoids splitting solar development on the SEZ and associated internal access and
40 security issues. In addition, the new boundary limits solar development to a distance of about
41 0.75 mi (1.2 km) east of the Plomosa Special Resource Management Area (SRMA) and avoids
42 crossing a well-vegetated drainage with wildlife values. It was verified that the nearest existing
43 transmission line to the SEZ is located 12 mi (19 km) from the SEZ, and the information was
44 changed in Section 8.1.2 of this Final Solar PEIS. The identification of specific transmission line
45 interconnections for the SEZs (e.g., the CAP transmission line) is beyond the scope of the Solar
46 PEIS. However, a new transmission analysis for the Brenda SEZ is provided in Section 8.1.23 of

1 this Final Solar PEIS. Additional applicable non-development areas within SEZs may be
2 identified during project-specific investigations when additional data have been collected.
3
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5 **3.1.2 Bullard Wash SEZ**

6

7 **Summary:** Most of the comments on the proposed Bullard Wash SEZ received from
8 environmental groups were in favor of eliminating the area as an SEZ because of concerns about
9 the plant and wildlife community present in the SEZ, potential effects on special status species in
10 the area, and its remote location. There were also concerns about groundwater availability and
11 the effect of water withdrawals on groundwater-dependent species. Other comments suggested
12 that development should be considered only in areas toward the southern end of the SEZ where
13 low-density plant communities exist. There was concern that the SEZ is located in an important
14 transition zone between the Joshua Tree forest and the Sonoran Desert, and a recommendation
15 was made that the Solar PEIS consider the impact of noise on native and migratory wildlife
16 species. Comments also expressed concern for the Sonoran desert tortoise that may occur in the
17 affected area of the SEZ.
18

19 **Response:** On the basis of comments received on the Draft Solar PEIS, review by the
20 BLM, and continued review of potential impacts identified in the Draft Solar PEIS, the Bullard
21 Wash SEZ has been eliminated from further consideration and will not be identified as an SEZ in
22 applicable land use plans. The potential impacts from solar development in the proposed Bullard
23 Wash SEZ were considered sufficient reason to eliminate the area from further consideration as
24 an SEZ. Because this proposed SEZ was eliminated from further consideration through the
25 Supplement to the Draft Solar PEIS, the text of the analysis for the SEZ presented in the Draft
26 Solar PEIS was not updated for the Final Solar PEIS.
27

28 Although the area has been dropped from consideration as an SEZ, the lands that
29 composed the proposed Bullard Wash SEZ will be retained as solar ROW variance areas,
30 because the BLM expects that individual projects could be sited in this area to avoid and/or
31 minimize impacts. Any solar development within this area in the future would require
32 appropriate environmental analysis.
33
34

35 **3.1.3 Gillespie SEZ**

36

37 **Summary:** Most of the comments on the proposed Gillespie SEZ received from
38 environmental groups were generally in favor of identifying the area as an SEZ, with boundary
39 adjustments. Comments recommended that the southern boundary be adjusted north of the Agua
40 Caliente Road and that the northwest portion of the SEZ be reshaped into a more compact area.
41 There was concern for visual impacts on the Sonoran Desert National Monument, Signal Peak
42 Wilderness, and Woolsey Peak Wilderness, and a suggestion that BLM include the retirement of
43 grazing allotments as a mitigation measure. In addition, there was concern about groundwater
44 withdrawals and the potential impacts on riparian habitats and species. At least one commentor
45 suggested eliminating the Gillespie SEZ because it will affect the integrity and scenic values of
46 the landscape, degrade the viewsheds of nearby wilderness areas, create risk of invasive weeds

1 and PM₁₀ (particulate matter with a diameter of 10 μm or less) dust issues, and constrain the
2 permitting process for groundwater use. One commentor suggested that height of solar
3 technologies be limited to 10 feet (3 m) or less.

4
5 **Response:** No boundary revisions were identified for the proposed SEZ; however,
6 applicable non-development areas within SEZs may be identified during project-specific
7 investigations when additional data have been collected. The Draft Solar PEIS identified
8 potential visual impacts on the Woolsey Peak Wilderness Area (WA). To accommodate the
9 flexibility described in the BLM's program objectives and in light of anticipated changes in
10 technologies and environmental conditions over time, the BLM has removed some of the
11 prescriptive SEZ-specific design features presented in the Draft Solar PEIS and the Supplement
12 to the Draft Solar PEIS (e.g., height restrictions on technologies used to address visual resource
13 impacts).

14
15 Note: Section 8.3.14.3 of this Final Solar PEIS incorrectly includes an SEZ-specific
16 design feature stating that development of power tower facilities should be prohibited within the
17 SEZ. This error will be corrected through the ROD for the Final Solar PEIS.

18 19 20 **3.1.4 Imperial East SEZ**

21
22 **Summary:** Most of the comments received on the proposed Imperial East SEZ were in
23 favor of identifying the area as an SEZ in the applicable land use plan, but with reduction in size
24 to eliminate conflicts. Some commentors were in favor of expanding the SEZ, assuming Areas of
25 Rare Species Richness could be avoided (these are being evaluated in the Desert Renewable
26 Energy Conservation Plan [DRECP]). However, other commentors recommended eliminating
27 the SEZ because of cultural, wildlife, and special status species concerns. Commentors also
28 opposed designation of Imperial East as an SEZ because it contains Class L lands, is in close
29 proximity to lands with cultural sensitivity, and is located near two Areas of Critical
30 Environmental Concern (ACECs), and the existing transmission lines in the area are inadequate
31 to handle assumed output if the SEZ were fully developed.

32
33 With respect to cumulative impacts, comments requested that information from other
34 solar energy EISs in the vicinity of this SEZ be considered in the Final Solar PEIS. In addition, a
35 member of a wildlife organization noted the absence of a means for prioritizing competing
36 renewable energy interests in a given area, noting that a known geothermal resource areas (KRA)
37 underlies the SEZ. Several comments from the solar industry requested additional analysis of
38 transmission capacity and details on when, where, and how transmission would be developed.

39
40 **Response:** No boundary revisions were identified for the proposed SEZ. However, areas
41 specified for non-development under SEZ-specific design features were mapped, where data
42 were available. For the proposed Imperial East SEZ, 5 acres (0.02 km²) of wetlands along the
43 southern border of the SEZ were identified as non-development areas. The remaining
44 developable area within the SEZ is 5,717 acres (23.1 km²). Additional applicable
45 non-development areas within SEZs may be identified during project-specific investigations
46 when additional data have been collected.

1 **3.1.5 Iron Mountain SEZ**
2

3 **Summary:** Many comments on the proposed Iron Mountain SEZ were received; most
4 favored eliminating the area as an SEZ because it contains environmentally and culturally
5 sensitive areas. Commentors were concerned about the direct impacts on significant cultural
6 resources, the SEZ’s proximity to Joshua Tree National Park (NP), and the inconsistencies with
7 criteria developed by the conservation community for siting solar facilities in the desert
8 (including Citizen Proposed Wilderness, which commented that development of the SEZ would
9 preclude opportunities to connect Joshua Tree NP with the Mojave Preserve and that the SEZ is
10 located within a BLM-designated multihabitat management area). One commentor mentioned
11 that the SEZ was located in an essential habitat-connectivity linkage area for desert bighorn
12 sheep populations. With respect to cumulative impacts, commentors were concerned about the
13 possible impacts on its facilities and recommended that the BLM also consider cumulative
14 effects of solar energy development on the water district’s facilities. Commentors argued that the
15 area provides desert tortoise connectivity between the Northern and Eastern Colorado Desert
16 Tortoise Recovery Units and contains habitat for rare plants. There were concerns that
17 development of the SEZ would require significant infrastructure, have adverse impacts on night
18 sky resources in Joshua Tree NP, and inhibit wildlife movements among the Mojave National
19 Preserve, several wilderness areas to the south of the SEZ, and Joshua Tree NP. Finally, there
20 were concerns about possible environmental justice impacts on people in the nearby
21 communities of Rice, Blythe, and Desert Center.
22

23 **Response:** On the basis of public comments received on the Draft Solar PEIS, review by
24 the BLM, and continued review of potential impacts identified in the Draft Solar PEIS, the Iron
25 Mountain SEZ was eliminated from further consideration and will not be identified as an SEZ in
26 applicable land use plans. The potential impacts from solar development in the proposed Iron
27 Mountain SEZ were considered sufficient reason to eliminate the area from further consideration
28 as an SEZ. Because this proposed SEZ was eliminated from further consideration through the
29 Supplement to the Draft Solar PEIS, the text of the analysis for the SEZ presented in the Draft
30 Solar PEIS was not updated for the Final Solar PEIS.
31

32 Because of the extensive potential impacts from solar development in the proposed Iron
33 Mountain SEZ, the lands that composed the SEZ as presented in the Draft Solar PEIS will be
34 considered solar ROW exclusion areas; that is, applications for solar development on these lands
35 will not be accepted by the BLM.
36
37

38 **3.1.6 Pisgah SEZ**
39

40 **Summary:** Many comments on the proposed Pisgah SEZ were received; most were in
41 favor of eliminating the area as an SEZ because it contains environmentally and culturally
42 sensitive areas. There was a recommendation to change the SEZ boundaries to eliminate
43 inappropriate areas from consideration. Native American tribes were concerned about the direct
44 impacts on significant cultural resources. One commentor indicated that the SEZ is incompatible
45

1 with the BLM’s conservation responsibilities under the Endangered Species Act (ESA), Federal
2 Land Policy and Management Act, and its own wildlife resource manuals. The SEZ is located in
3 an area of essential habitat connectivity, and it was recommended that cumulative impacts on the
4 value of the area as a wildlife corridor should be addressed.
5

6 One commentor was concerned about socioeconomic impacts, including any financial or
7 ratepayer impacts from development of the SEZ, and recommended that the BLM also consider
8 cumulative effects of solar energy development on the water district’s facilities. There were
9 multiple conflicts with wildlife and habitat resources, and it was argued that there would be
10 impacts on bighorn sheep movement. There was also concern that the area provides the only
11 connectivity between tortoises in the Southern Mojave and Central Mojave populations, and
12 development of the SEZ would affect connectivity between the West Mojave recovery unit and
13 the eastern desert tortoise recovery units. The area is also adjacent to two ACECs and a
14 Wilderness Study Area (WSA). The California Public Utilities Commission and other groups
15 expressed concern for desert tortoise habitat located within and near the SEZ.
16

17 Commentors expressed concern for the golden eagle population near the SEZ and
18 indicated that development in the proposed Pisgah SEZ would constitute a “take” of golden
19 eagles, because it would disturb and destroy the foraging habitat of nearby golden eagles.
20 Environmental groups commented that the development of the SEZ would have adverse impacts
21 on desert tortoise and sensitive biological, cultural, and visual resources. Another
22 recommendation was that only dry-cooling technologies be allowed.
23

24 **Response:** On the basis of public comments received on the Draft Solar PEIS, review by
25 the BLM, and continued review of potential impacts identified in the Draft Solar PEIS, the
26 Pisgah SEZ was eliminated from further consideration and will not be identified as an SEZ in
27 applicable land use plans. The potential impacts from solar development in the proposed Pisgah
28 SEZ were considered sufficient reason to eliminate the area from further consideration as an
29 SEZ. Because this proposed SEZ was eliminated from further consideration through the
30 Supplement to the Draft Solar PEIS, the text of the analysis for the SEZ presented in the Draft
31 Solar PEIS was not updated for the Final Solar PEIS.
32

33 Although the area has been dropped from consideration as an SEZ, most of the lands that
34 composed the proposed Pisgah SEZ will be retained as solar ROW variance areas, because the
35 BLM expects that individual projects could be sited in this area to avoid and/or minimize
36 impacts. Any solar development within this area in the future would require appropriate
37 environmental analysis. An exception to the above will be made for specific lands identified
38 during the environmental review process for the approved Calico Solar Project (CACA 49537),
39 which comprises more than 4,600 acres (19 km²) within the SEZ. Through the Calico
40 environmental review process, some parts of the project area were identified as areas where solar
41 development should be avoided; these areas will now be identified as solar ROW exclusion
42 areas, that is, areas where applications for solar development will not be accepted by the BLM.
43

1 **3.1.7 Riverside East SEZ**
2

3 **Summary:** Many of the comments received on the proposed Riverside East SEZ were in
4 favor of identifying the area as an SEZ, with boundary adjustments. In particular, there were
5 recommendations to eliminate all Wildlife Habitat Management Areas (WHMAs), the sand
6 transport corridor, the microphyll woodlands, and habitat connectivity areas from solar energy
7 development. Many commentors proposed that lands within the western end of the SEZ be
8 eliminated to avoid impacts on Joshua Tree NP’s cultural and natural resources and that the SEZ
9 be reconfigured to avoid impacts on Joshua Tree NP’s southern and eastern border.

10
11 There was opposition to designating the area as an SEZ because of its proximity to Lake
12 Tamarisk and Desert Center, while other commentors recommended that the Riverside East SEZ
13 be eliminated because of occupied desert tortoise habitat and other wildlife habitat, important
14 cultural sites, negative impacts on tourism, and off-highway vehicle (OHV) use, which would be
15 affected by solar energy development.

16
17 Many commentors expressed concern for the potential impact on Joshua Tree NP and
18 wildlife corridors. The solar industry expressed concern over the proposed visual resource
19 mitigation requirements for the Riverside East SEZ in the Draft Solar PEIS and other restrictions
20 that would constrain solar energy development within the SEZ. Others expressed concern for
21 impacts on Native American trails, such as the Salt Song Trail, and adequacy of government-to-
22 government consultation. There was concern that full build-out of the Riverside East SEZ would
23 be unlikely, given the groundwater availability and its potential impacts on groundwater
24 resources and groundwater-dependent species, as well as concern about the transmission line
25 assumptions made in the Draft Solar PEIS and whether those lines would actually be available
26 for interconnection. There was also concern regarding the potential impacts on Metropolitan
27 Water District’s facilities and ROWs. Comments requested that sensitive habitats in the vicinity
28 of Palen Lake and Palen Dunes, Ford Dry Lake, and McCoy Wash not be available for
29 development.

30
31 Some commentors did not think that the reduction in size for Riverside East minimized
32 all the potential environmental impacts, including land with wilderness characteristics, visual
33 resource management Class II and III height limitations, visual impacts on Joshua Tree NP,
34 impacts on residents of Desert Center, important linkages of desert tortoise habitat, and impacts
35 on birds. There were also recommendations to exclude additional areas from development
36 including sand transport corridors. Alternatively, commentors also suggested that identifying the
37 McCoy wash as a non-development area is overly restrictive.

38
39 **Response:** The proposed Riverside East SEZ was reconfigured to eliminate 43,439 acres
40 (176 km²) in the northwest portion of the SEZ. Excluding this area will reduce impacts on
41 Joshua Tree NP. In addition, 11,547 acres (46.7 km²) within the SEZ boundaries have been
42 identified as non-development areas. These areas consist of intermittent lakes, major washes, and
43 areas identified for non-development through investigations for approved projects. The
44 remaining developable area within the SEZ is 147,910 acres (598.6 km²). Additional applicable
45 non-development areas within SEZs may be identified during project-specific investigations
46 when additional data have been collected.

1 To accommodate the flexibility described in the BLM’s program objectives and in light
2 of anticipated changes in technologies and environmental conditions over time, the BLM
3 removed some of the prescriptive SEZ-specific design features presented in the Draft Solar PEIS
4 and the Supplement to the Draft Solar PEIS (e.g., height restrictions on technologies used to
5 address visual resource impacts). The lands that had composed the northwest area of the proposed
6 SEZ that were eliminated from the SEZ through the Supplement will be considered solar ROW
7 exclusion areas; that is, applications for solar development on these lands will not be accepted by
8 the BLM. In addition, lands within the SEZ identified during investigations for approved projects
9 as areas where solar energy development should not occur will be defined as non-development
10 areas.

13 3.1.8 Antonito Southeast SEZ

14
15 **Summary:** Many of the comments on the proposed Antonito Southeast SEZ received
16 from environmental groups favored identifying the area as an SEZ. Several members of the
17 public commented that development of the SEZ would affect their ranching operations, while
18 others supported designating the area as an SEZ.

19
20 One commentor expressed concern with wetland protection in the Antonito Southeast
21 SEZ, including Alta Lake, and suggested that the Final Solar PEIS include specific design
22 criteria for wetland protection. There are concerns that the SEZ contains Colorado Department
23 of Wildlife- (CDOW-) identified elk severe winter range for pronghorn and recommended that
24 activity should be limited outside of project fencing during severe winters when elk are using
25 these areas.

26
27 Commentors were concerned that the SEZ contains a Gunnison prairie dog colony of
28 unknown status and that surveys for the species have not been conducted, and provided
29 recommendations to avoid impacts on the Gunnison prairie dog, including avoidance of active
30 colonies, clearance surveys within any area defined by CDOW as having colonies of inactive or
31 unknown status, potential off-site mitigation within areas of high species viability, and project
32 siting that avoids blocking migration corridors used by the species to migrate between colonies.
33 Another commentor was concerned about the potential socioeconomic impact of solar energy
34 development at the proposed Antonito Southeast SEZ. Commentors also expressed concern for
35 proximity to transmission lines in the area and suggested that private land be used for solar
36 energy development. Commentors suggested additional exclusion areas including the Cumbres
37 and Toltec Scenic Railroad and the Alta Lake Allotment.

38
39 **Response:** No boundary revisions were identified for the proposed SEZ. However, areas
40 specified for non-development under SEZ-specific design features were mapped, where data
41 were available. For the proposed Antonito Southeast SEZ, 17 acres (0.07 km²) of non-
42 development wetland and lake areas were identified. Additional applicable non-development
43 areas within SEZs may be identified during project-specific investigations when additional data
44 have been collected. The remaining developable area within the SEZ is 9,712 acres (39.3 km²).
45
46

1 **3.1.9 De Tilla Gulch SEZ**
2

3 **Summary:** Many of the comments received on the proposed De Tilla Gulch SEZ were in
4 favor of identifying the area as an SEZ with proper siting, design, and mitigation.
5

6 Commentors proposed adjusting the boundary to remove the active prairie dog colony
7 that overlaps the northern edge of the SEZ. Also, if surveys performed within the intersection
8 area of the SEZ and Mineral Hot Springs Potential Conservation Area (PCA) indicate that there
9 is significant activity by special status species within the SEZ, boundary adjustments should be
10 considered to eliminate the PCA. Because the SEZ contains CDOW-identified severe winter
11 range for elk and winter concentration habitat for pronghorn, commentors recommended that
12 disturbance during the winter season be avoided or minimized in these areas. One commentor
13 recommended that the BLM and DOE consider re-evaluating the magnitude of impacts of habitat
14 loss within each SEZ for individual species or groups of species.
15

16 Commentors recommended the removal of the De Tilla Gulch SEZ because of potential
17 impacts on the Old Spanish National Historic Trail, and if the area is retained as an SEZ, they
18 suggested that solar development should be restricted to areas that do not have the potential to
19 adversely affect the setting of the trail, and that a combination of mitigation measures should be
20 required to minimize impacts on high-potential route segments located within the SEZ viewshed.
21

22 One commentor suggested that if wet cooling is considered as an option for the De Tilla
23 Gulch SEZ, the Final Solar PEIS should clearly identify the level of groundwater withdrawal that
24 can be maintained without adversely affecting groundwater levels in the area. Finally, another
25 commentor recommended that SEZ-specific design features be adopted that require off-site
26 habitat improvement projects and/or compensatory mitigation that offsets habitats losses in order
27 to minimize displacement of big game and lost hunting opportunities for pronghorn.
28

29 Commentors recommended removing the southern boundaries of the SEZ by 0.5 mi
30 (0.8 km) to avoid impacts on the Old Spanish National Historic Trail. Although the Supplement
31 to the Draft Solar PEIS excluded pronghorn seasonal ranges from the De Tilla Gulch SEZ, it did
32 not exclude severe winter range for elk or valuable habitat for Gunnison's prairie dog,
33 Gunnison's sage-grouse. Commentors also expressed concern for proximity to transmission lines
34 in the area.
35

36 **Response:** The proposed De Tilla Gulch SEZ was reconfigured to eliminate 458 acres
37 (1.9 km²) along the northwest edge of the SEZ (i.e., the area that had bordered U.S. 285).
38 Excluding this area will avoid impacts on an active Gunnison prairie dog colony, on pronghorn
39 winter range and winter concentration area, and on the proposed Cochetopa Scenic Byway. The
40 remaining SEZ area is 1,064 acres (4.3 km²). No additional areas within the SEZ were identified
41 for non-development. Additional applicable non-development areas within SEZs may be
42 identified during project-specific investigations when additional data have been collected.
43

44 To accommodate the flexibility described in the BLM's program objectives and in light
45 of anticipated changes in technologies and environmental conditions over time, the BLM
46 removed some of the prescriptive SEZ-specific design features presented in the Draft Solar PEIS

1 and the Supplement to the Draft Solar PEIS, including specifically disallowing wet- or dry-
2 cooling technologies for the proposed SEZs. In the Draft Solar PEIS, wet cooling in the De Tilla
3 Gulch SEZ was not stated to be infeasible, mainly because of the small size of the SEZ; such
4 water demands would be lower than for other SEZs. For the Final Solar PEIS, detail was added
5 to the groundwater analysis for the De Tilla Gulch SEZ provided in Section 10.2.9.2. It was
6 stated that the high pumping scenario has the potential for a significant groundwater drawdown
7 within the SEZ but not in the surrounding area. Given the restrictive nature of water rights and
8 the need for augmentation water reserves, it would be difficult for any projects seeking an
9 amount of water more than 1,000 ac-ft/yr (1.2 million m³/yr) to be successful in obtaining the
10 needed water rights. Since some configurations of projects within the SEZ that would include
11 wet cooling would not exceed that amount, wet cooling was not stated to be infeasible in the
12 Draft or Final Solar PEIS for the De Tilla Gulch SEZ.

13
14 Because of the extensive potential impacts from solar development in the portion of the
15 De Tilla Gulch SEZ that has been eliminated, those lands will be considered solar ROW
16 exclusion areas; that is, applications for solar development on those lands will not be accepted by
17 the BLM.

18 19 20 **3.1.10 Fourmile East SEZ**

21
22 **Summary:** Most of the comments received from environmental groups on the proposed
23 Fourmile East SEZ were in favor of identifying the area as an SEZ. However, these groups
24 proposed adjusting the eastern boundary 0.25 mi (0.40 km) west of State Highway 150 to avoid
25 adverse impacts on the Old Spanish National Historic Trail and the Los Caminos Antiguos
26 Scenic Byway. There were concerns that the SEZ contains winter range for pronghorn and that
27 the southern tip of the SEZ intersects a Gunnison prairie dog colony of unknown status and
28 surveys for the species have not been conducted. Commentors provided recommendations to
29 avoid impacts on the Gunnison prairie dog, including avoidance of active colonies, clearance
30 surveys within any area defined by the CDOW as having colonies of inactive or unknown status,
31 potential off-site mitigation within areas of high species viability, and project siting that avoids
32 blocking migration corridors used by the species to migrate between colonies. Commentors also
33 expressed concern for proximity to transmission lines in the area. Commentors were concerned
34 that the PEIS did not address potential impacts on the Great Sand Dunes NP and the local
35 economy. At least one commentor supported height restrictions for solar technologies to
36 minimize impacts on specially designated areas, including the Great Sand Dunes NP.

37
38 **Response:** The proposed Fourmile East SEZ was reconfigured to eliminate 999 acres
39 (4 km²), mainly along the eastern boundary of the SEZ, and also a small area on the west side of
40 the proposed SEZ. Excluding these areas will avoid impacts on known cultural resources, a
41 historic playa basin, Caminos Antiguos Scenic Byway, the Old Spanish National Historic Trail,
42 the Pike National Historic Trail, big game winter range, and important riparian habitat. Small
43 additional wetland areas with a total area of about 1 acre (0.004 km²) have been identified as
44 non-development areas within the SEZ. The remaining developable area within the SEZ area is
45 2,882 acres (11.7 km²). Additional applicable non-development areas within SEZs may be
46 identified during project-specific investigations when additional data have been collected.

1 Because of the extensive potential impacts from solar development in the portion of the Fourmile
2 East SEZ that was eliminated, those lands will be considered solar ROW exclusion areas; that is,
3 applications for solar development on those lands will not be accepted by the BLM.
4
5

6 **3.1.11 Los Mogotes East SEZ** 7

8 **Summary:** Most of the comments on the proposed Los Mogotes East SEZ received from
9 environmental groups were in favor of identifying the area as an SEZ. Commentors were
10 concerned with the distance to transmission lines and stated that shallow soils would make
11 development of the SEZ difficult, while another was concerned because the Los Mogotes East
12 SEZ contains pronghorn winter concentration areas. There was a recommendation that the BLM
13 require off-site habitat improvement projects and/or compensatory mitigation to offset habitat
14 losses in order to minimize both displacement of big game and lost hunting opportunities for
15 pronghorn. One commentor expressed concern that the SEZ contains winter range, severe winter
16 range, and winter concentration areas for pronghorn, severe winter range and winter range for
17 elk, and winter range for mule deer. A few commentors were concerned that the SEZ contains a
18 Gunnison prairie dog colony of unknown status, that the Old Spanish National Historic Trail is
19 located immediately east of the SEZ, and that the area is known to have a number of cultural and
20 historical resources that have not been adequately inventoried. There were also concerns with the
21 socioeconomic impact of solar energy development at the proposed Los Mogotes East SEZ.
22 Commentors also expressed concern for the displacement of grazing and suggested locating solar
23 development projects on rock outcroppings or other areas rather than destroying areas for
24 livestock. One commentor recommended reducing the size of the Los Mogotes East SEZ to
25 preserve the winter wildlife range, mating grounds, and birthing grounds, while another
26 recommended that BLM remove the SEZ from consideration because of the potential presence of
27 mountain plovers.
28

29 **Response:** The proposed Los Mogotes East SEZ was reconfigured to eliminate more than
30 half of the area, 3,268 acres (13.2 km²) on the western side of the SEZ. Excluding these areas
31 will avoid impacts on significant cultural resources; grazing allotments; an important riparian
32 area; Gunnison prairie dog, burrowing owl, ferruginous hawk, mountain plover, pronghorn
33 birthing and winter habitat; and visual resources. Additional applicable non-development areas
34 within SEZs may be identified during project-specific investigations when additional data have
35 been collected.
36

37 Because of the extensive potential impacts from solar development in the portion of the
38 Los Mogotes East SEZ that was eliminated, those lands will be considered solar ROW exclusion
39 areas; that is, applications for solar development on those lands will not be accepted by the BLM.
40
41

42 **3.1.12 Amargosa Valley SEZ** 43

44 **Summary:** Some comments received on the proposed Amargosa Valley SEZ were in
45 favor of identifying the area as an SEZ, provided that specific concerns are addressed in the Final
46 Solar PEIS. Many commentors, however, opposed designating the area as an SEZ because of the

1 potential negative impact on Death Valley wilderness and water resources and endangered desert
2 species, including the Devil’s Hole pupfish. Other commentors recommended that Amargosa
3 Valley SEZ be reduced or reconfigured to avoid potential impacts. Some commentors suggested
4 a boundary adjustment to avoid the 100-year flood channel and the secondary wash that is
5 tributary to the Amargosa River, including a buffer to avoid potential impacts on wildlife and
6 plant habitat, to provide flood control, and to preserve hydrologic function. There was a
7 recommendation that the SEZ be moved to an area further from Death Valley NP to avoid
8 impacts on special status species and important water resources.
9

10 One commentor recommended that the SEZ area be reconfigured to address potential
11 impacts on groundwater-dependent species, a national wildlife refuge, and desert tortoise, while
12 another recommended that the portion of the SEZ to the northeast of U.S. 95 be eliminated.
13

14 Concerns were expressed over potential impacts of groundwater withdrawals on the
15 Ash Meadows National Wildlife Refuge (NWR), Devil’s Hole, and the Amargosa Mesquite
16 Trees ACEC. One commentor suggested eliminating the SEZ or restricting technologies to those
17 that use the least amount of water, such as photovoltaic (PV). Several commentors supported the
18 elimination of the Amargosa SEZ, citing the over-allocated groundwater basin, an important
19 corridor for desert tortoise, the potential impact on the Devil’s Hole pupfish, the presence of
20 Big Dune, and because of its location within desert tortoise and other special status species
21 habitat and because the region lacks both groundwater and surface water resources.
22

23 One commentor recommended that impacts on water availability, listed species, and
24 viewshed for the Amargosa Valley SEZ should also be discussed in the Draft Solar PEIS in
25 relation to impacts in California. Another concern was that facilities exceeding 50 ft (15 m) in
26 height could be incompatible with low-level aircraft operations conducted in military training
27 routes (MTRs) and/or present electromagnetic compatibility concerns, and that glare and heat
28 emissions could present both flight and ground safety concerns. A concern over releases of radon
29 from disturbed soil within the SEZ was expressed. One commentor opposed solar development
30 in Amargosa Valley because of its proximity to numerous unrecorded archaeological sites,
31 religious sites, songscapes, and storyscapes important to Southern Paiute people and the
32 Pahrump Paiute Tribe and also requested that ethnographic studies be conducted. One
33 commentor disagreed with the reduction in size of the Amargosa Valley SEZ in the Supplement
34 to the Draft Solar PEIS, and recommended that it be offset by the identification of an alternative
35 SEZ. Another commentor opposed technology limitations at the programmatic level.
36

37 **Response:** The proposed Amargosa Valley SEZ was reconfigured to eliminate the area
38 south and west of the Amargosa River floodplain and the area northeast of U.S. 95, a total of
39 21,888 acres (88.6 km²). Excluding these areas will mitigate many potential impacts, including
40 impacts on Death Valley NP and desert tortoise. In addition, 1,258 acres (5.1 km²) within the
41 SEZ boundaries were identified as non-development areas. These areas consist of lands within
42 the Amargosa River floodplain that were included in the SEZ only to facilitate definition of the
43 boundaries using the Public Land Survey System (PLSS). The remaining developable area
44 within the SEZ is 8,479 acres (34.3 km²). Additional applicable non-development areas within
45 SEZs may be identified during project-specific investigations when additional data have been
46 collected.

1 To reduce the visual resource impacts of solar development within the proposed
2 Amargosa Valley SEZ, SEZ-specific visual resource mitigation requirements were presented in
3 the Draft Solar PEIS. However, the area of the SEZ that was labeled to meet Visual Resource
4 Management (VRM) Class II-consistent objectives in the Draft Solar PEIS was eliminated from
5 the SEZ.
6

7 On the basis of the water impact analysis provided in the Draft Solar PEIS, development
8 within the remaining area of the SEZ may need to be restricted to PV technology or a technology
9 with equivalent or lower water use. Updated analyses taking the revised SEZ boundaries into
10 consideration will be included in the Final Solar PEIS. Because of the extensive potential
11 impacts from solar development in the portion of the Amargosa Valley SEZ that was eliminated,
12 those lands will be considered solar ROW exclusion areas; that is, applications for solar
13 development on those lands will not be accepted by the BLM.
14

15 Regarding concerns for radon release if the soil is disturbed, this is not a valid concern
16 because radon is a gas released from the natural decay of uranium, and there is no evidence that
17 the soil within the Amargosa Valley SEZ has been contaminated with uranium.
18
19

20 **3.1.13 Delamar Valley SEZ**

21

22 **Summary:** Many comments received on the proposed Delamar Valley SEZ favored
23 eliminating the area as an SEZ. Many comments expressed concern for ranching operations in
24 the area and the effect of solar development in the proposed SEZ on grazing allotments in the
25 area.
26

27 Commentors suggested removing the southern end of the SEZ because the sensitive
28 resources in the playa lake make it inappropriate for solar development. There was a concern that
29 any development in the SEZ would have an immediate adverse effect on current and future
30 U.S. Department of Defense (DoD) operations on the Nevada Test and Training Range (NTTR).
31 There was opposition to the designation of Delamar Valley as an SEZ because of its potential
32 adverse impacts on water resources, soil resources, vegetation resources, visual resources,
33 recreation, livestock grazing, wildlife, and county socioeconomics. If, however, the SEZ were
34 to be carried forward, there was a recommendation that only PV technologies be considered
35 because of the lack of groundwater resources in the area. One commentor recommended
36 avoiding Joshua tree habitat along the northern portion of the SEZ, while others recommended
37 eliminating Delamar Valley as an SEZ because of the region's limited groundwater availability
38 and because the groundwater basin is fully appropriated. There were concerns over impacts on
39 ROWs for the Groundwater Development Project.
40

41 **Response:** On the basis of public comments received on the Draft Solar PEIS, review by
42 the BLM, and continued review of potential impacts identified in the Draft Solar PEIS, the
43 Delamar Valley SEZ was eliminated from further consideration and will not be identified as an
44 SEZ in applicable land use plans. The potential impacts from solar development in the proposed
45 Delamar Valley SEZ were considered sufficient reason to eliminate the area from further
46 consideration as an SEZ. Because this proposed SEZ was eliminated from further consideration

1 through the Supplement to the Draft Solar PEIS, the text of the analysis for the SEZ presented in
2 the Draft Solar PEIS was not updated for the Final Solar PEIS.
3

4 Although the area has been dropped from consideration as an SEZ, the lands that
5 composed the proposed Delamar Valley SEZ will be retained as solar ROW variance areas,
6 because the BLM expects that individual projects could be sited in this area to avoid and/or
7 minimize impacts. Any solar development within this area in the future would require
8 appropriate environmental analysis.
9

10 11 **3.1.14 Dry Lake SEZ** 12

13 **Summary:** Many of the comments received on the proposed Dry Lake SEZ favored
14 identifying the area as an SEZ with proper siting and design. For example, commentors
15 recommended excluding the dry lake, playa, and washes to avoid impacts on wildlife and special
16 status species habitat, and removing the portion of the SEZ that is southeast of I-15 to avoid
17 impacts on the Old Spanish National Historic Trail. Commentors also recommended adjusting
18 the SEZ boundary to reduce impacts on the National Historic Trail. There were concerns
19 regarding impacts on use of the area for emergency military aircraft bailout purposes. A few
20 commentors recommended that the Dry Lake SEZ be eliminated to avoid impacts on desert
21 tortoise habitat and military test and training operations. One commentor recommended that the
22 boundaries be adjusted to incorporate the EPA-identified contaminated site located 0.65 mi
23 (1 km) from the SEZ.
24

25 **Response:** The proposed Dry Lake SEZ was reconfigured to include only the
26 southernmost area that is northwest of I-15. Excluding the northern portion of the SEZ will
27 mitigate some potential impacts from development in the SEZ, including impacts on desert
28 tortoise and other wildlife, and potential impacts on military operations. The remaining area is
29 6,186 acres (25 km²). In addition, 469 acres (1.9 km²) of floodplain and wetland non-
30 development areas within the remaining SEZ boundaries were identified. The remaining
31 developable area within the SEZ is 5,717 acres (23 km²). Additional applicable non-
32 development areas within SEZs may be identified during project-specific investigations when
33 additional data have been collected.
34

35 The lands eliminated from the proposed Dry Lake SEZ will be retained as solar ROW
36 variance areas, because the BLM expects that individual projects could be sited in this area to
37 avoid and/or minimize impacts. Any solar development within this area in the future would
38 require appropriate environmental analysis.
39

40 41 **3.1.15 Dry Lake Valley North SEZ** 42

43 **Summary:** Many of the comments received on the proposed Dry Lake Valley North SEZ
44 favored identifying the area as an SEZ with proper siting and design. Commentors recommended
45 boundary adjustments to avoid important wildlife and special status species habitat. Other groups
46 and individual members of the public favored identifying the area as an SEZ, with boundary

1 adjustments due to impacts on grazing. One commentor specifically requested that the area of the
2 SEZ be limited to no more than 10,000 acres (40 km²), stating that existing and planned
3 transmission could accommodate only the corresponding amount of power generated. Other
4 commentors requested that the SEZ be eliminated because of conflicts with military operations
5 and training and lack of sufficient groundwater resources.
6

7 There was concern for groundwater development project ROWs and other areas
8 identified for future ROWs that are located within the SEZ. Other comments requested changes
9 to the transmission line and access road analysis. Some commentors argued that the boundaries
10 for the Dry Lake Valley SEZ should be reduced further than was identified in the Supplement to
11 the Draft Solar PEIS, while others recommended that the removed areas be classified as
12 exclusion areas, rather than solar ROW variance areas. There was a recommendation that the
13 PEIS limit solar development in the SEZ to technologies with a height no greater than 200 ft
14 (61 m).
15

16 **Response:** The proposed Dry Lake Valley North SEZ was reconfigured to eliminate
17 48,148 acres (195 km²), mainly the northern portion of the SEZ. Excluding the northern
18 portion of the SEZ will mitigate some potential impacts from development in the SEZ, including
19 impacts on sage-grouse and other wildlife, grazing, and military operations. In addition, about
20 3,657 acres (15 km²) of wetland and dry lake non-development areas within the SEZ boundaries
21 were identified. The remaining developable area within the SEZ is 25,069 acres (101.5 km²).
22 Additional applicable non-development areas within SEZs may be identified during project-
23 specific investigations when additional data have been collected.
24

25 The lands eliminated from the proposed Dry Lake Valley North SEZ will be retained as
26 solar ROW variance areas, because the BLM expects that individual projects could be sited in
27 this area to avoid and/or minimize impacts. Any solar development within this area in the future
28 would require appropriate environmental analysis.
29
30

31 **3.1.16 East Mormon Mountain SEZ** 32

33 **Summary:** Most of the comments received on the proposed East Mormon Mountain SEZ
34 favored eliminating the area as an SEZ. However, there was support for designating the area as
35 an SEZ. Many comments expressed concern for ranching operations in the area and the effect of
36 solar development in the proposed SEZ on grazing allotments in the area.
37

38 There was a recommendation that any solar energy technologies that require structures
39 higher than 700 ft (1,127 m) above ground level receive additional analysis. There was
40 opposition to the designation of East Mormon Mountain as an SEZ because of its potential
41 adverse impacts on the Mormon Mesa ACEC; specially designated lands with wilderness
42 characteristics and designated by Congress; livestock grazing; recreation; DoD operating areas;
43 sensitive soil, water, and vegetation resources; designated critical habitat for federally
44 endangered species; and visual resource values.
45

1 Commentors also recommended eliminating East Mormon Mountain as an SEZ, because
2 the SEZ includes desert tortoise habitat and is immediately adjacent to the Mormon Mesa Desert
3 Wildlife Management Area (DWMA) and Beaver Dam Slope DWMA in the Northeastern
4 Mojave recovery unit. The Nature Conservancy recommended avoiding the Toquop Wash,
5 because it is a regionally important desert wash containing many of the Mojave Desert
6 ecoregionally significant plant and animal species.

7
8 **Response:** On the basis of public comments received on the Draft Solar PEIS, review
9 by the BLM, and continued review of potential impacts identified in the Draft Solar PEIS,
10 the East Mormon Mountain SEZ was eliminated from further consideration and will not be
11 identified as an SEZ in applicable land use plans. The potential impacts from solar development
12 in the proposed East Mormon Mountain SEZ were considered sufficient reason to eliminate the
13 area from further consideration as an SEZ. Because this proposed SEZ was eliminated from
14 further consideration through the Supplement to the Draft Solar PEIS, the text of the analysis for
15 the SEZ presented in the Draft Solar PEIS was not updated for the Final Solar PEIS.

16
17 Although the area has been dropped from consideration as an SEZ, the lands that
18 composed the proposed East Mormon Mountain SEZ will be retained as solar ROW variance
19 areas, because the BLM expects that individual projects could be sited in this area to avoid
20 and/or minimize impacts. Any solar development within this area in the future would require
21 appropriate environmental analysis.

22 23 24 **3.1.17 Gold Point SEZ**

25
26 **Summary:** Some of the comments received on the proposed Gold Point SEZ supported
27 identifying the area as an SEZ, while others favored eliminating it (or, alternatively, reducing its
28 size to include only the degraded area near U.S. 95 and State Route 266). There was opposition
29 to the SEZ because of impacts on the town of Gold Point and its residents and because of its
30 pristine conditions, Native American concerns, remote area, presence of pronghorn and sage
31 grouse habitat, and lack of water.

32
33 Other environmental groups supported designation of the area as an SEZ but requested
34 that the proposed transmission line run along existing highways to avoid fragmentation and
35 impacts on recreation, and suggested that the BLM may need to scale back the peak construction
36 year and full build-out scenarios, given limited water availability. Commentors also suggested
37 that the project design take into consideration access to forage and water for antelope,
38 particularly during dry periods. Concerns over encroachment into MTR airspace and structures
39 higher than 50 ft (15 m) were also expressed during scoping for the Draft Solar PEIS. One
40 commentator provided alternative locations for renewable energy development. There was also a
41 request that the BLM include a study of the flood potential of the unnamed wash that bisects the
42 SEZ for the Final Solar PEIS.

43
44 **Response:** No boundary revisions for the proposed Gold Point SEZ were identified.
45 However, areas specified for non-development under SEZ-specific design features were mapped,
46 where data were available. For the proposed Gold Point SEZ, 214 acres (0.87 km²) of a

1 significant unnamed intermittent stream passing east–west through the center of the SEZ were
2 identified as non-development areas. The remaining developable area within the SEZ is
3 4,596 acres (18.6 km²). Additional applicable non-development areas within SEZs may be
4 identified during project-specific investigations when additional data have been collected.
5
6

7 **3.1.18 Millers SEZ**

8

9 **Summary:** Many environmental groups providing comments on the Draft Solar PEIS did
10 not identify major conflicts for the Millers SEZ. There was a request that nearby sand dunes and
11 vegetation communities be avoided and a suggestion that the BLM may need to scale back the
12 peak construction year and full build-out scenarios, given limited water availability. Commentors
13 suggested that the BLM include analysis of potential impacts associated with sand dunes and
14 vegetation communities in the Final Solar PEIS, as well as measures to avoid, minimize, or
15 mitigate such impacts. Concerns over encroachment into MTR airspace and structures higher
16 than 50 ft (15 m) were expressed during scoping for the Draft Solar PEIS. One commentor
17 recommended that the Final Solar PEIS include distribution, population size and health, and
18 habitat analysis for kangaroo mice, while another provided recommendations for alternative
19 locations for renewable energy development. There was also concern for avian mortality, and
20 commentors recommended that the SEZ should have height restrictions due to rare migratory
21 bird species in the area. At least one commentor recommended that the Millers SEZ be
22 eliminated due to Native American concerns.
23

24 **Response:** No boundary revisions were identified for the proposed SEZ. However, areas
25 specified for non-development under SEZ-specific design features were mapped, where data
26 were available. For the proposed Millers SEZ, Ione Wash and a small wetland area in the
27 southern portion of the SEZ, totaling 253 acres (1.0 km²), were identified as non-development
28 areas. The remaining developable area within the SEZ is 16,534 acres (66.9 km²). Additional
29 applicable non-development areas within SEZs may be identified during project-specific
30 investigations when additional data have been collected.
31
32

33 **3.1.19 Afton SEZ**

34

35 **Summary:** Most of the comments received on the proposed Afton SEZ favored
36 identifying the area as an SEZ, but with required mitigation measures to protect sensitive plants,
37 National Historic Trails, and cultural resources. These groups generally supported designation
38 of the SEZ because of its proximity to existing roads and transmission lines; however, one
39 commentor recommended that boundaries of the SEZ be modified to remove the Kenzin
40 Conservation Area and protect its grasslands.
41

42 There were concerns that the impacts on ranching presented in the Draft Solar PEIS
43 underestimated the true impacts on grazing allotments and suggested that mitigation of and/or
44 compensation to affected ranching operations should be mandatory. One commentor supported
45 designation of the area as an SEZ and agreed with the SEZ-specific design features in the Draft
46 Solar PEIS, including specifying only PV technology and avoiding impacts on special habitat

1 types. One commentor recommended the removal of the Afton SEZ because of the potential
2 impacts on El Camino Real de Tierra Adentro National Historic Trail, El Camino Real Scenic
3 Byway, Butterfield Scenic Byway, and SRMAs. Full Circle Heritage Services believed that a
4 more assertive effort should be made to consult with the tribes. Some commentors recommended
5 stricter mitigation measures for water resources, including monitoring standards of water quality
6 and groundwater levels, while others urged BLM to place limits on the amount of water that can
7 be used and leave it to the developers to determine whether they can construct or operate within
8 those limits rather than identifying technology limitations.
9

10 **Response:** The proposed Afton SEZ was significantly reconfigured to eliminate
11 46,917 acres (190 km²) of land. Lands that were eliminated are at the north, northeast, southeast,
12 and southwest boundaries. The rationale for the changes was to focus potential solar
13 development in the area along the existing Section 368 corridor, where development already
14 exists. In addition, 742 acres (3 km²) of floodplain and intermittent and dry lake non-
15 development areas within the remaining SEZ boundaries were identified. The remaining
16 developable area within the SEZ is 29,964 acres (121.2 km²). Additional applicable non-
17 development areas within SEZs may be identified during project-specific investigations when
18 additional data have been collected.
19

20 To accommodate the flexibility described in the BLM's program objectives and in light
21 of anticipated changes in technologies and environmental conditions over time, the BLM has
22 removed some of the prescriptive SEZ-specific design features presented in the Draft Solar PEIS
23 and the Supplement to the Draft Solar PEIS (e.g., height restrictions on technologies used to
24 address visual resource impacts).
25

26 On the basis of the water impact analysis provided in the Draft Solar PEIS, development
27 within the remaining areas of the SEZ may need to be restricted to PV technology or a
28 technology with equivalent or lower water use. Updated analyses taking the revised SEZ
29 boundaries into consideration will be included in the Final Solar PEIS. The lands eliminated
30 from the proposed Afton SEZ will be retained as solar ROW variance lands, because the BLM
31 expects that individual projects could be sited in this area to avoid and/or minimize impacts. Any
32 solar development within this area in the future would require appropriate environmental
33 analysis.
34
35

36 **3.1.20 Mason Draw SEZ** 37

38 **Summary:** Of the comments received on the proposed Mason Draw SEZ, most favored
39 eliminating the area as an SEZ. Others supported designating the area as an SEZ, provided
40 boundary adjustments were made. Multiple commentors supported designating the area as an
41 SEZ if the boundary were adjusted to exclude the Sleeping Lady Hills unit of New Mexico
42 Wilderness Alliance's Citizens' Proposed Wilderness Inventory. There was concern for ranching
43 operations in the area and the disproportionate burden that would be placed on ranchers if
44 development occurred on the SEZ. There was support for the elimination of the Mason Draw
45 SEZ, because of the presence of large areas of intact native grassland of the Chihuahuan Semi-
46 Desert Grasslands type, and populations of antelope, quail, and doves that make the area a

1 popular and high-quality hunting and wildlife-watching recreational resource. There were also
2 concerns about impacts on wildlife and wildlife habitat, including pronghorn, mule deer, and
3 Aplomado falcon, as well as overlap of the SEZ with the portion of the Goodsight Mountains'
4 Citizens' Proposed Wilderness Area on the northern end of the unit. The Full Circle Heritage
5 Services recommended a robust ESA and Section 106 consultation process.
6

7 **Response:** On the basis of public comments received on the Draft Solar PEIS, review by
8 the BLM and continued review of potential impacts identified in the Draft Solar PEIS, the Mason
9 Draw SEZ was eliminated from further consideration and will not be identified as an SEZ in
10 applicable land use plans. The potential impacts from solar development in the proposed Mason
11 Draw SEZ were considered sufficient reason to eliminate the area from further consideration as
12 an SEZ. Because this proposed SEZ was eliminated from further consideration through the
13 Supplement to the Draft Solar PEIS, the text of the analysis for the SEZ presented in the Draft
14 Solar PEIS was not updated for the Final Solar PEIS.
15

16 Although the area has been dropped from consideration as an SEZ, the lands that
17 composed the proposed Mason Draw SEZ will be retained as solar ROW variance areas, because
18 the BLM expects that individual projects could be sited in this area to avoid and/or minimize
19 impacts. Any solar development within this area in the future would require appropriate
20 environmental analysis.
21

22 23 **3.1.21 Red Sands SEZ** 24

25 **Summary:** Many comments on the proposed Red Sands SEZ were received. Some
26 commentors were in favor of eliminating the area as an SEZ, while others supported designating
27 the area as an SEZ. There were concerns that groundwater withdrawals might affect the White
28 Sands pupfish. At least one commentor recommended that the BLM modify the boundaries or
29 drop the SEZ entirely. There were suggestions that the BLM work closely with affected tribes to
30 determine whether development of the SEZ could cause adverse impacts on sacred viewsheds
31 and whether those impacts could be adequately mitigated. One commentor favored eliminating
32 the Red Sands SEZ because development within the SEZ could jeopardize groundwater at White
33 Sands National Monument, and because it would have adverse impacts on the development and
34 stability of the gypsum sand dunes and on visual resources of the White Sands National
35 Monument. There was a recommendation that no power tower facilities be allowed in the SEZ.
36

37 **Response:** On the basis of public comments received on the Draft Solar PEIS, review by
38 the BLM, and continued review of the potential impacts identified in the Draft Solar PEIS, the
39 Red Sands SEZ was eliminated from further consideration and will not be identified as an SEZ in
40 applicable land use plans. The potential impacts from solar development in the proposed Red
41 Sands SEZ were considered sufficient reason to eliminate the area from further consideration as
42 an SEZ. Because this proposed SEZ was eliminated from further consideration through the
43 Supplement to the Draft Solar PEIS, the text of the analysis for the SEZ presented in the Draft
44 Solar PEIS was not updated for the Final Solar PEIS.
45

1 Although the area has been dropped from consideration as an SEZ, the lands that
2 composed the proposed Red Sands SEZ will be retained as solar ROW variance areas, because
3 the BLM expects that individual projects could be sited in this area to avoid and/or minimize
4 impacts. Any solar development within this area in the future would require appropriate
5 environmental analysis.
6
7

8 **3.1.22 Escalante Valley SEZ** 9

10 **Summary:** Most of the comments received on the proposed Escalante Valley SEZ
11 favored identifying the area as an SEZ. A few commentors proposed adjusting the boundary
12 adjacent to the dry lakebed in the southwest portion of the SEZ with a buffer to protect the area
13 and using existing access roads rather than constructing a new road from State Route 56.
14

15 There was a suggestion that BLM include the retirement of grazing allotments as a
16 mitigation measure. There were also concerns over vegetation removal and soil disturbance
17 within the Escalante Valley SEZ, and stringent guidelines and mitigation measures to preserve
18 native vegetation and soils were recommended to alleviate impacts. One commentor
19 recommended that cumulative impact analysis include an analysis of the proposed new road
20 construction and new transmission lines and upgrades, particularly for species such as the greater
21 sage-grouse, western burrowing owl, ferruginous hawk, pygmy rabbit, bald eagle, and Utah
22 prairie dog. There was a recommendation that the BLM perform cultural resource surveys and
23 Native American consultation prior to defining the SEZ, to ensure that the SEZ is an area with
24 low resource conflicts. Commentors recommended that the BLM identify a 1,000-hectare
25 (2,741 acres [11 km²]) ecological reference area to provide a control area for researching impacts
26 of utility-scale solar development and to inform future efforts in minimizing and mitigating
27 impacts.
28

29 **Response:** No boundary revisions were identified for the proposed SEZ. However, areas
30 specified for non-development under SEZ-specific design features were mapped, where data
31 were available. For the proposed Escalante Valley SEZ, 12 acres (0.05 km²) of dry lake area and
32 69 acres (0.28 km²) of dune area were identified as non-development areas. The remaining
33 developable area within the SEZ is 6,533 acres (26.4 km²). Additional applicable non-
34 development areas within SEZs may be identified during project-specific investigations when
35 additional data have been collected.
36
37

38 **3.1.23 Milford Flats South SEZ** 39

40 **Summary:** Most of the comments received on the proposed Milford Flats South SEZ
41 favored identifying the area as an SEZ and stated that the region is already fragmented and has
42 low habitat value for many species. There was a concern that development of the SEZ would
43 have a 12% impact on Utah prairie dog habitat, which is a substantial portion of this species'
44 available and potentially suitable habitat in the Utah West Desert, and a recommendation was
45 made that additional analysis of the impacts on the Utah prairie dog be provided in the Final
46 Solar PEIS for the proposed Utah SEZs, including cumulative impact analysis. One commentor

1 recommended that additional analysis be provided in the Final Solar PEIS for impacts on the
2 greater sage-grouse for the proposed SEZs in Utah, and that analysis regarding effectiveness of
3 design features that avoid lek and nesting habitat should be conducted for each SEZ. Another
4 commented that the assumed transmission corridor would cross greater sage-grouse brood-
5 rearing habitat for the Black Mountains-Mineral East leks and is also part of the Bald Hills Bird
6 Habitat Conservation Area. One commentor recommended that the Solar PEIS use the existing
7 designated transmission corridor adjacent to and on the west side of the SEZ. Commentors
8 indicated that the Utah Division of Wildlife Resources (UDWR) quad-level occurrences for
9 greater sage-grouse intersect the SEZ itself, not just the affected area, and suggested use of a
10 different transmission line and access road route than were assumed in the Draft Solar PEIS to
11 minimize surface disturbance. There was also concern with the fragile soil and potential for
12 fugitive dust generation at the proposed Milford Flats South SEZ. One commentor requested that
13 the cumulative impacts assessment include analysis of the impacts of expected new road
14 construction and of new transmission lines and upgrades on the greater sage-grouse, western
15 burrowing owl, ferruginous hawk, pygmy rabbit, bald eagle, and Utah prairie dog. Commentors
16 recommended that the Milford Flats SEZ be eliminated due to Native American concerns.

17
18 **Response:** No boundary revisions were identified for the proposed SEZ. However, areas
19 specified for non-development under SEZ-specific design features were mapped, where data
20 were available. For the proposed Milford Flats South SEZ, 228 acres (0.9 km²) composing the
21 Minersville Canal was identified as a non-development area. The remaining developable area
22 within the SEZ is 6,252 acres (25.3 km²). Additional applicable non-development areas within
23 SEZs may be identified during project-specific investigations when additional data have been
24 collected.

25 26 27 **3.1.24 Wah Wah Valley SEZ**

28
29 **Summary:** Many comments on the proposed Wah Wah Valley SEZ opposed
30 identifying the area as an SEZ in the applicable land use plan. Environmental groups cited the
31 remoteness, lack of water, impacts on special status species, including greater sage-grouse, the
32 need for long, new transmission lines, and the lack of an underlying resource management plan
33 framework as reasons that the proposed SEZ should be eliminated or deprioritized. There was a
34 recommendation that the BLM not use the Section 368 corridor as the assumed location for
35 transmission to connect the SEZ to the grid and a suggestion that the BLM perform cultural
36 resource surveys and consultations prior to defining the SEZ. One commentor indicated that the
37 SEZ contains a substantial portion of the Utah prairie dog and greater-sage grouse habitat in the
38 Utah West Desert and recommended additional analysis and mitigation measures be provided in
39 the Final Solar PEIS. Commentors urged the BLM to look more closely into the impacts on
40 grazing allotments, recommended appropriate and generous mediation standards to compensate
41 the animal unit month holder, and requested clarification on the applicability of neighboring
42 county noise regulations.

43
44 **Response:** No boundary revisions were identified for the proposed SEZ. However, areas
45 specified for non-development under SEZ-specific design features were mapped, where data
46 were available. For the proposed Wah Wah Valley SEZ, 224 acres (0.91 km²) of the Wah Wah

1 Wash were identified as non-development areas. The remaining developable area within the SEZ
2 is 5,873 acres (23.8 km²). Additional applicable non-development areas within SEZs may be
3 identified during project-specific investigations when additional data have been collected. No
4 corrections were needed regarding the noise impact evaluation for Wah Wah Ranch; this was
5 evaluated using the Iron County regulation to provide a comparison with a neighboring county's
6 regulation, not because it is applicable at the Ranch.
7
8

9 **3.2 COMMENTS ON SITING**

10 **3.2.1 General Comments on Siting**

11
12
13
14 **Summary:** Commentors stated that solar facilities should be sited in areas with low
15 impact—on previously disturbed lands, near urban areas, and near existing transmission
16 corridors; the facilities should be sited away from wilderness and important cultural resources,
17 and scattered development should be avoided.
18

19 **Response:** The BLM has worked extensively throughout development of the Solar PEIS
20 to identify appropriate areas for solar development on BLM-administered lands, including the
21 identification of priority areas for development (SEZs) to avoid scattered development over large
22 areas. In the Draft Solar PEIS, the BLM identified many categories of lands for exclusion from
23 utility-scale solar energy development, including lands with known resources, resource uses, or
24 special designations identified in local land use plans (e.g., ACECs, critical habitat areas, many
25 SRMAs, no surface occupancy and ROW exclusion and avoidance areas). Through the
26 Supplement to the Draft Solar PEIS and the Final Solar PEIS, the lands to be excluded were
27 further refined in response to comments and through coordination with other agencies and
28 stakeholders. Particularly, the BLM worked with the National Park Service (NPS) and the
29 U.S. Fish and Wildlife Service (FWS) between the release of the Supplement and the Final Solar
30 PEIS to exclude additional lands in close proximity to NPS units and overlapping priority desert
31 tortoise connectivity habitat.
32

33 In the process of identifying the proposed SEZs, the BLM used siting criteria, working to
34 locate the SEZs near existing transmission lines or designated corridors, on disturbed public
35 lands where possible (e.g., in burned areas or damaged grazing lands), and in areas with low
36 potential for impacts on natural or cultural resources. Through further investigation and
37 consultation with stakeholders, seven of the originally proposed 24 SEZs were eliminated from
38 further consideration, and the size of many of the SEZs was reduced because serious resource
39 concerns were identified. The BLM used the knowledge gained through investigating the
40 proposed SEZs and through modifying the exclusion areas in developing the SEZ identification
41 protocol and the variance process for siting projects outside of SEZs that are presented in the
42 Final Solar PEIS (see Section A.2.6 of Appendix A and Section 2.2.2.3 in the Final Solar PEIS,
43 respectively).
44
45

3.2.2 Exclusion Areas

Summary: Many comments requested specific categories of the public lands be excluded from solar development. Some of these requested exclusion categories were citizen proposed wilderness areas; areas with high concentrations of archaeological resources or of significance to Native Americans; national parks, wilderness areas, national monuments, national historic trails, and areas near these specially designated areas; connectivity areas for desert tortoise as defined by the USFWS; desert wildlife management areas; golden eagle foraging and nesting habitats; conservation lands in California that were donated to the BLM; areas with highly erodible soils; riparian areas; and areas with the potential for adverse impacts on military operations.

Conversely, some comments stated that the exclusion criteria should be used to guide future solar development, and not as categorical exclusions. Comments stated that ROW avoidance areas specific in BLM land use plans and proposed critical habitat should not be exclusions categories. Some counties stated that there were too many exclusions and requested that more land be made available.

Comments were received on the application of exclusions only to siting of utility-scale solar energy generation facilities and not to any required linear infrastructure (i.e., new roads and transmission lines). Some commentors stated the exclusions should be applied to linear infrastructure. One commentor observed that the application of the 5% slope criteria to transmission lines and roads was not practicable. Some commentors noted the uncertainty introduced because the BLM lacked sufficient data to map all the exclusion categories, and urged the BLM to seek to digitize as much exclusion zone data as possible. There was also a question about why non-development areas within SEZs were not designated as exclusion zones.

Response: The BLM initially had 25 exclusion categories in the Draft Solar PEIS. Some of the exclusion categories requested by commentors, such as national monuments and national parks, are excluded from development by law and were never included as lands proposed to be available for solar development. Some additional requested exclusion categories were incorporated as Solar Energy Program exclusions through the Supplement to the Draft Solar PEIS or through the Final Solar PEIS (see Tables 2.2-2 of these documents for the specific exclusions). The BLM has continued to work with the NPS and the USFWS to exclude additional lands of concern.

The identification of exclusion areas allows the BLM to support the highest and best use of public lands by avoiding potential resource conflicts and reserving for other uses public lands that are not well suited for utility-scale solar energy development. Due to the size and scale of utility-scale solar energy development (typically involving a single use of public lands), the BLM is proposing to exclude a broader set of categories than would be identified in a land use plan for other types of ROWs. The exclusions proposed through the Solar PEIS include (1) *explicit* exclusions that will be delineated in the Solar PEIS ROD by a land base that would not change except by future land use plan amendment; and (2) *implicit* exclusions that will be defined in the Solar PEIS ROD by the presence or absence of a specific resource or condition where the land base may change over time (e.g., critical habitat). Implicit exclusions will be based on information in applicable land use plans as amended, Species' Recovery Plans, or

1 similar planning or guidance documents, and verified by site-specific information as necessary.
2 Even with the exclusions that have been applied through the Final Solar PEIS, the total variance
3 land area far exceeds the amount projected to actually be developed under the reasonably
4 foreseeable development scenario (RFDS) (19 million acres [76,890 km²] versus less than
5 300,000 acres [1,214 km²]).
6

7 Although the BLM is continuously adding to and updating its spatial (GIS) data for
8 managed lands, it has not been possible to completely map all of the exclusion categories for the
9 variance areas. Exclusion areas that could not be mapped due to lack of data would be identified
10 during pre-application consultations with local BLM staff or site-specific evaluation of
11 individual ROW applications. For the SEZs, extensive work has been done to identify additional
12 areas within them that are not suitable for development (and will be excluded from such
13 development), so that uncertainty about subsequent identification of additional areas unsuitable
14 for development has been considerably reduced. (Note: the term “non-development area” within
15 an SEZ indicates an area that will be excluded from development).
16

17 While the Solar PEIS considers the impacts of constructing, operating, and
18 decommissioning the related infrastructure needed to support utility-scale solar energy
19 development, such as roads, transmission lines, and natural gas or water pipelines, the land use
20 plan decisions to be made (e.g., exclusions, SEZs, etc.) will be applicable only to utility-scale
21 solar energy generation facilities. Management decisions for supporting infrastructure would
22 continue to be made in accordance with existing land use plan decisions and current applicable
23 policy and procedures. Siting of supporting infrastructure would be fully analyzed in project-
24 specific environmental reviews in accordance with NEPA. Such reviews would be completed in
25 combination with solar generation facility environmental reviews as appropriate.
26

27 28 **3.2.2.1 Requests To Add Exclusion Areas** 29

30 **Summary:** These comments included requests to exclude specific areas from solar
31 development, for example, culturally important sites within the Genesis Project area, the Ivanpah
32 Valley, the Pisgah Valley, House Rock and the Arizona Strip in Arizona, conservation lands in
33 California donated to the BLM, lands within the proposed Mojave Trails National Monument in
34 California, and others.
35

36 **Response:** The BLM worked to incorporate some of the specific requested exclusions
37 through the Supplement to the Draft Solar PEIS and through the Final Solar PEIS (e.g., Pisgah
38 Valley, Ivanpah Valley, and the proposed Mojave Trails National Monument).
39

40 41 **3.2.2.2 Requests To Add Buffer Zones** 42

43 **Summary:** Comments were received on the Draft Solar PEIS and Supplement to the
44 Draft Solar PEIS stating that the exclusion of 0.25 mi (0.4 km) from the centerline of National
45 Historic Trails was insufficient. Similarly, comments were received stating that an exclusion
46 corridor for water features should be established; the U.S. Environmental Protection Agency

1 (EPA) specifically recommended a 100-ft (30.5-m) buffer zone for protection of ecological
2 resources. An interim buffer zone of 25 mi (40 km) for National Parks was requested by the
3 NPS. An exclusion area of 2 mi (3.2 km) either side of any railroad ROWs was requested by a
4 railroad company.
5

6 **Response:** The BLM agrees with the comments regarding the exclusion width for
7 National Historic Trails, and therefore the exclusion for trails in the Final Solar PEIS has been
8 restated to exclude the trails and any trail management corridors identified for protection through
9 applicable land use plans. The specific exclusion of 0.25 mi (0.4 km) from the centerline of trails
10 has been removed. For solar projects located in the viewshed of a National Historic Trail, the
11 programmatic design features require that an inventory to determine the area of possible adverse
12 impact on resources, qualities, values, and associated settings of the trail be conducted to prevent
13 substantial interference and to determine any areas unsuitable for development. Controlling
14 impacts on trails using this requirement will more accurately identify locations that require
15 protective measures than using an arbitrary distance.
16

17 Although the identified non-development area for significant washes in SEZs has been
18 identified as about 264 ft (80 m) from the centerline of the wash, this exclusion is just part of the
19 protective measure identified for washes. The programmatic design features presented in
20 Section A.2.2 of Appendix A require that adequate distance and measures be put in place to
21 preserve the hydrological and ecological function of water features.
22

23 In response to concerns expressed by the NPS regarding impacts on NPS units, the BLM
24 identified an additional 821,000 acres (3,322 km²) of land to be excluded from the variance area;
25 much of this area was within 25 mi (40 km) of NPS units. A specific exclusion was not added for
26 railroad ROWs. Where applicable, railroad company concerns would be considered in
27 preliminary meetings and coordination activities for applications in variance areas.
28
29

30 **3.2.2.3 Wildlife Habitat Exclusions and SRMA Exclusions**

31

32 **Summary:** Many comments expressed support for solar energy development, but only if
33 wildlife and special status species could also be protected from adverse impacts. Some comments
34 requested specific exclusions for certain wildlife habitats (e.g., DWMAs, tortoise connectivity
35 areas). The USFWS recommended that SRMA areas in Nevada be designated as exclusion areas
36 in Nevada because of concerns that displacing OHV users from SRMA areas would move those
37 users into ecologically fragile areas, indirectly affecting wildlife. However, the Silver State
38 project in Nevada, which is partially within an SRMA, was stated to be compatible with the
39 recreational use intended for that area.
40

41 **Response:** The BLM has included many exclusions and required design features in its
42 proposed Solar Energy Program for the protection of wildlife and special status species.
43 Exclusions include designated and proposed critical habitat for special status species, DWMAs,
44 sage-grouse habitat, fringe-toed lizard habitat, Mojave ground squirrel habitat, and so on. In
45 addition, 515,000 acres (2,084 km²) that overlap with priority desert tortoise connectivity habitat
46 has been excluded from the variance area in the Final Solar PEIS. The design features include

1 requirements for pre-disturbance surveys to identify the presence of special status species, and
2 avoid, minimize, and/or offset impacts on special status species if found to be present.

3
4 SRMAs are excluded in all states except Nevada. Development in SRMAs in Nevada
5 would require assessment of the potential direct and indirect impacts on recreation and wildlife
6 through the variance process.

7 8 9 **3.2.2.4 Requests to Exclude Lands with Wilderness Characteristics**

10
11 **Summary:** Commentors requested that lands with wilderness characteristics be excluded
12 from solar energy development, including citizen-proposed wilderness areas.

13
14 **Response:** WAs and WSAs identified through the National Landscape Conservation
15 System (NLCS) are excluded from solar development. Although citizen-proposed wilderness
16 areas have not been categorically excluded from utility-scale solar energy development, the
17 BLM has a system in place to evaluate the wilderness character of all proposed development
18 locations and protect as appropriate such values where they exist. This process is described as
19 part of the programmatic design features.

20 21 22 **3.2.3 Environmental Concerns Related to Siting**

23
24 **Summary:** Many comments expressed concern over a variety of adverse environmental
25 impacts that could be associated with solar development.

26
27 **Response:** The agencies (BLM and DOE) have proposed actions that incorporate
28 extensive protective measures to avoid, minimize, or offset adverse environmental impacts from
29 solar energy development. See Sections 2.2 and 2.3 of this Final Solar PEIS for the details of
30 these programs.

31 32 33 **3.2.4 Concerns Related to Siting Solar Facilities near Residences**

34
35 **Summary:** These comments requested that solar energy development be sited away from
36 residential areas.

37
38 **Response:** Although some commentors were concerned about adverse impacts on
39 residences near solar facilities (in terms of visual impacts, property values, traffic, and increased
40 dust levels), many other commentors expressed support for siting near population centers in
41 order to minimize transmission impacts. The BLM has not excluded development near
42 residential areas, although few BLM-administered lands are in close proximity to highly
43 populated residential areas. To sufficiently gather information on potential issues and barriers
44 and/or opportunities related to a ROW application in a variance area, the BLM will require that a
45 minimum of one public meeting be held as part of the variance process to allow for participation
46 by all interested parties. The public meeting shall be located in close proximity to the community

1 most affected by the proposal and be adequately noticed. The BLM will also make information
2 regarding ROW applications in variance areas available to the public online via the BLM Web
3 site (www.blm.gov) and the Solar PEIS project Web site (<http://solareis.anl.gov>). In addition, in
4 preparing selected parcels within SEZs for competitive offer, the BLM would be required to
5 review all existing analysis for the SEZ and work with appropriate federal, state, and local
6 agencies, and tribes, as necessary to ensure that potential environmental, cultural, or other
7 resource conflicts are considered in the review, including the concerns of nearby residents.
8

9 In its proposed environmental guidance for solar energy development, the DOE has
10 included recommendations for early contact with local officials to identify unique concerns for
11 individual solar power generation projects, including concerns of local residents.
12
13

14 **3.2.5 Concerns Related to Siting Solar Facilities near National Parks**

15
16 **Summary:** Many comments opposed siting of solar facilities near units of the national
17 parks system; most specified impacts on national parks as the main concern.
18

19 **Response:** The variance process described in Section 2.2.2.3 includes required
20 coordination with the NPS for applications that could affect the viewsheds or recreational value
21 of a national park or other NPS units. Such coordination will begin during required preliminary
22 meetings, during which concerns of the NPS would need to be adequately addressed in order for
23 the application process to proceed. NPS concerns would also be considered during the process of
24 identifying new SEZs (Section A.2.6 of Appendix A). In addition, 821,000 acres (3,322 km²) of
25 land that coincides with NPS-identified areas of high-potential conflict have been eliminated
26 from the variance area in the Final Solar PEIS (i.e., proposed for exclusion).
27

28 Three of the proposed SEZs (Riverside East in California, Fourmile East in Colorado,
29 and Amargosa Valley in Nevada) have the potential for impacts on nearby national parks. These
30 impacts have been partially addressed by changes in the SEZ boundaries, moving them further
31 from the national parks. In addition, in preparing selected parcels within SEZs for competitive
32 offer, the BLM would be required to review all existing analysis for the SEZ and work with the
33 NPS, as necessary, to ensure potential impacts on national parks were considered.
34

35 In its proposed environmental guidance for solar energy development, the DOE has
36 included recommendations for early contact with federal agencies to identify unique concerns for
37 individual solar power generation projects, including concerns for impacts on national parks.
38
39

40 **3.2.6 Slope and Solar Insolation Exclusions**

41
42 **Summary:** Some commentors from industry stated that the exclusions for solar
43 insolation and slope were unnecessarily restrictive, because technology advances might make
44 development in those areas feasible and attractive over the 20-year study period covered by the
45 Solar PEIS. Since the exclusions were not based on environmental concerns, the commentors
46 thought they were inappropriate. An environmental group stated opposition to eliminating these

1 exclusion criteria, saying that the result would be the addition of about 23 million acres
2 (93,077.7 km²) to the variance area; the additional lands would introduce the possibility of
3 development on upland slopes critical for climate change adaptation and in habitat areas that
4 had not been addressed in the Solar PEIS.

5
6 **Response:** Lands with solar insolation levels less than 6.5 kWh/m²/day and lands with
7 slopes greater than 5% have been excluded from the lands available for solar application
8 (variance lands) under the BLM’s preferred alternative. The identification of exclusion areas
9 allows the BLM to support the highest and best use of public lands by avoiding potential
10 resource conflicts and reserving for other uses public lands that are not well suited for utility-
11 scale solar energy development. Because of the size and scale of utility-scale solar energy
12 development, the BLM is proposing to exclude a broader set of categories than would be
13 identified in a land use plan for general ROWs.

14
15 Higher insolation values provide significant benefits for solar generation facilities. For
16 instance, a reduction of 1 kWh/m²/day in insolation is equivalent to approximately a 10%
17 reduction in efficiency and, in turn, a proportional increase in costs and the land use footprint
18 (because of the need for additional solar collection equipment to provide the same quantity of
19 energy). Further, areas with higher slope can be more environmentally sensitive than areas with
20 lower slope. In the Final Solar PEIS; however, the BLM has indicated that applications may
21 include some lands with up to a 10% slope where higher-slope inclusions meet all of the
22 following criteria: (1) they are proximate to variance lands in the application; (2) they are not
23 otherwise excluded from development; (3) they allow for the avoidance or minimization of
24 resource conflicts; and (4) they do not create any significant new or additional conflicts. In such
25 cases, a land use plan amendment would have to be adopted as part of the project-specific
26 analysis to permit the slope exception.

27
28 Consistent with existing regulations, applicants may request that the BLM amend a
29 land use plan to allow for an otherwise nonconforming proposal (*BLM Land Use Planning*
30 *Handbook* H-1601-1, 3.VII(B)). For example, an applicant may request a land use plan
31 amendment for development in areas with higher slope or lower insolation than previously
32 identified in order to avoid a potential resource conflict or to maximize the use of existing
33 transmission. In addition, in an effort to provide flexibility to address possible technology
34 advances, the BLM has considered the option of developing on higher slope or lower insolation
35 lands in its SEZ Identification protocol (Section A.2.6 of Appendix A).

36 37 38 **3.3 COMMENTS ON DESIGN FEATURES AND MITIGATION**

39 40 41 **3.3.1 Design Features**

42
43 **Summary:** Many comments were received regarding the general and specific aspects of
44 the programmatic design features presented in Section A.2.2 of Appendix A and the SEZ-
45 specific design features presented in Chapters 8 through 13 of the Draft Solar PEIS
46 (e.g., comments regarding design features for water use, wildlife migration corridors, protection

1 of railroad ROWs, recreation, dust suppression, grazing, transportation). Several comments
2 stated that the design features should be mandatory and required (i.e., stated as “shall” rather
3 than “should”). Other commentors stated that the design features were too restrictive and costly
4 and should not be required for all projects.
5

6 Comments were also received stating that the design features included requirements for
7 too many plans and that they should be consolidated into one plan addressing all requirements
8 for protection of all resources. There was also a statement that the evaluation of the effectiveness
9 of the design features needs to be included in the Solar PEIS.
10

11 **Response:** In preparation of the mitigation measures and design features included in
12 the Draft and Final Solar PEIS, best management practices (BMPs) for renewable energy
13 development compiled by the BLM and other agencies were considered (e.g., “Best Management
14 Practices and Guidance Manual: Desert Renewable Energy Projects,” Nov. 2010, REAT Report,
15 available at [http://www.energy.ca.gov/2010publications/REAT-1000-2010-009/REAT-1000-](http://www.energy.ca.gov/2010publications/REAT-1000-2010-009/REAT-1000-2010-009-F.PDF)
16 [2010-009-F.PDF](http://www.energy.ca.gov/2010publications/REAT-1000-2010-009/REAT-1000-2010-009-F.PDF)). In addition, the BMPs included in some of the National Environmental Policy
17 Act of 1969 (NEPA) documents for fast-track and priority projects that became available during
18 preparation of the Solar PEIS were reviewed for consistency.
19

20 The potentially applicable mitigation measures presented in Chapter 5 of the Draft Solar
21 PEIS were taken in their entirety and proposed as required design features in Section A.2.2 of
22 Appendix A of the Draft Solar PEIS. Based on input received through the Draft Solar PEIS and
23 additional outreach conducted between the publication of the Supplement to the Draft PEIS and
24 the Final PEIS, the BLM has modified the proposed design features presented in the Final Solar
25 PEIS. For example, the number of required plans has been reduced, although the elements of all
26 of the previously proposed plans must be considered in the Plan of Development submitted to the
27 BLM for individual projects.
28

29 Because of site-specific circumstances, not all design features as written will apply to all
30 projects (e.g., a resource is not present on a given site). Some design features may require
31 variations from what is described (e.g., a larger or smaller protective area). In some cases,
32 multiple options for addressing a potential resource conflict are provided. Applicants will be
33 required to work with the BLM to address proposed variations in the design features and to
34 discuss selected options for avoidance, minimization, and/or mitigation of potential resource
35 conflicts. Variations in programmatic design features will require appropriate analysis and
36 disclosure as part of individual project authorizations. Programmatic design features that do not
37 apply to a given project should be described as part of the project case file along with an
38 appropriate rationale. Additional mitigation measures may be identified and required during
39 individual project development and environmental review.
40

41 Each SEZ resource section includes an assessment of the effectiveness of the
42 programmatic and SEZ-specific design features in avoiding or minimizing the impacts of solar
43 development on that resource. To accommodate the flexibility described in the BLM’s program
44 objectives and in light of evolving technologies and environmental conditions, the BLM has
45 removed some of the prescriptive SEZ-specific design features presented in the Draft Solar PEIS
46 and the Supplement to the Draft Solar PEIS (e.g., technology restrictions, height restrictions on

1 technologies used to address visual resource impacts, and no wet-cooling for several SEZs).
2 Instead of including the prescriptive design features, the BLM will give full consideration to any
3 outstanding conflicts in SEZs as part of the competitive process being developed through
4 rulemaking (see Section 2.2.2.2.1 of the Final Solar PEIS). For applications outside of SEZs,
5 potential impacts and corresponding additional required design features will be given
6 consideration through the variance process.
7

8 Specific details on applying the programmatic design features will be developed at the
9 project level and coordinated through the appropriate agencies. Many of the design features that
10 commentors requested to be added were quite specific; such specific requirements would be
11 identified in the required project-specific plans that will be reviewed and approved by the BLM.
12 The design features were developed for the protection of resources; the design features as
13 presented in the Final Solar PEIS will protect those resources and additional modifications would
14 not substantively add to resource protection.
15

16 17 **3.3.2 Regional Mitigation Planning** 18

19 **Summary:** Commentors requested that the Final Solar PEIS include additional
20 information about how compensation for unavoidable impacts on resources (e.g., special status
21 species, wetlands, migration corridors, grazing, recreation such as OHV use, public safety
22 services) would be made for solar energy projects on public lands. Many questioned whether
23 private lands would be purchased or public lands set aside and held in an undeveloped state to
24 compensate for habitat loss elsewhere. Although some commentors were in favor of this
25 traditional means of habitat loss mitigation, concerns were also expressed that such practices
26 would result in adverse impacts on counties through loss of tax revenue. Commentors stated that
27 the amount of land required for such mitigation was not available. In addition, concerns over
28 adverse impacts on recreation due to loss of recreation locations were expressed, regardless of
29 whether the mitigation lands would be on public or private lands. Some comments supported
30 mitigation in the form of fees that would be used for funding conservation and habitat restoration
31 efforts. With respect to impacts on National Historic Trails, there was a request to mitigate
32 impacts through, among other things, new trail easements, development of interpretive sites, and
33 establishment of alternative trail corridors to maintain the integrity of the trail networks. The
34 need for explicit mitigation plans for the SEZs was stated, as well as for regional mitigation
35 plans. It was stated that such plans should be designed consistent with existing wildlife
36 management plans and policies. The regional mitigation plans should first focus on avoidance,
37 then on minimization of impacts, and finally on offsetting impacts.
38

39 **Response:** The BLM's proposed Solar Energy Program under both action alternatives
40 employs a mitigation hierarchy to address impacts—avoidance, minimization, and offset of
41 unavoidable impacts. Avoidance will be achieved through siting decisions and the identification
42 of priority development areas (i.e., SEZs). Minimization will be achieved through siting
43 decisions as well as through the application of programmatic and SEZ-specific design features
44 and review and coordination activities under the proposed variance process. For those impacts
45 that are not fully avoided or minimized, the BLM will determine whether measures to offset or
46 mitigate negative impacts would be appropriate and may recommend such measures following

1 consultation with affected stakeholders. To help accomplish this goal, the BLM proposes to
2 establish regional mitigation plans for development in SEZs (see Section A.2.5 of Appendix A).
3 The framework outlined in the Final Solar PEIS incorporates many of the components suggested
4 in the comments received, including allowing mitigation on both public and private lands,
5 considering the full range of mitigation tools available (including changing land designations and
6 restoration), ensuring adequate funding over time, acquiring third-party-managed mitigation
7 funds, monitoring, and using adaptive management strategies to certify that mitigation is
8 adequate relative to impacts over time. Such plans will establish priority mitigation activities and
9 locations based on, and consistent with, existing conservation objectives, resource management
10 plans, and other Federal, state and/or local goals. See Section A.2.5 of the Final Solar PEIS for
11 additional details.
12
13

14 **3.4 COMMENTS ON THE REASONABLY FORESEEABLE DEVELOPMENT** 15 **SCENARIO (RFDS)**

16 17 18 **3.4.1 General Comments on the RFDS**

19
20 **Summary:** The following bullet points represent the body of comments received on the
21 RFDS presented in the Draft Solar PEIS.
22

- 23 • The assumptions used to derive the RFDS were not valid. This comment
24 particularly was raised with respect to the assumption that 75% of solar
25 development in the six-state study area would take place on BLM-
26 administered lands; commentors were concerned that this assumption would
27 not adequately represent the distribution of development on state, tribal, or
28 private lands.
29
- 30 • The RFDS did not account for distributed generation potential and thus
31 overestimated the amount of utility-scale solar energy development that would
32 be needed in the future to meet energy demands.
33
- 34 • The RFDS underestimated the amount of utility-scale solar energy that will be
35 developed in the future, assuming that state renewable portfolio standards
36 (RPSs) will be raised, thus driving the market for more renewable energy
37 development overall. (Incorrectly, some comments noted that the recent
38 increase in the California RPS to 33% was not incorporated into the RFDS
39 calculations; as clarified in Table E.2-1, footnote b, of Appendix E, the
40 calculations assumed 33% renewable energy by 2020.)
41
- 42 • The PEIS cumulative impacts assessment would not be valid should the level
43 of utility-scale solar development exceed the levels projected by the RFDS
44 over the 20-year study period.
45

- 1 • The RFDS should be estimated in terms of megawatt-hours instead of using
2 nameplate capacity in megawatts.
3
- 4 • A sufficient amount of land would be made available in the proposed SEZs to
5 support the RFDS, making selection of the SEZ program alternative
6 appropriate.
7

8 **Response:** The RFDS for the Solar PEIS was established to help define the potential
9 magnitude of solar energy development that could occur within the six-state study area over the
10 next 20 years. The RFDS is used to estimate potential cumulative impacts and to inform decision
11 making. In an effort to capture all potential cumulative impacts, the RFDS represents an upper-
12 end-of-the-range estimate. For example, it was assumed that 50% of all renewable energy in the
13 six-state study area would come from utility-scale solar energy development. The agencies
14 recognize, however, that it is possible that wind, geothermal, and hydropower may ultimately
15 account for more than 50% of the renewable energy produced and that distributed generation
16 could also meet some of the demand for renewable energy development.
17

18 The most up-to-date renewable portfolio standards were used to generate the estimates of
19 megawatts of nameplate capacity required in each state. These methods resulted in an estimate of
20 approximately 30,000 MW of utility-scale solar power on a corresponding 300,000 acres
21 (1,214 km²) of land (assumed about 10 acres/MW [0.04 km²/MW]) in the six-state study area,
22 including non-BLM-administered lands. The assumption that 75% of solar development would
23 occur on BLM-administered lands (corresponding to about 24,000 MW and 214,000 acres
24 [866 km²] developed) did not affect the overall estimate of 30,000 MW across the six-state study
25 area, but established an upper-range estimate for development on BLM-administered lands.
26

27 The RFDS was estimated in terms for nameplate capacity (megawatts) instead of
28 megawatt-hours because nameplate capacity is the most comparable to existing information
29 about planned projects. The unit megawatt-hours takes into account the operational time of
30 facilities and how much power is actually produced (accounting for hours when the sun is not
31 shining and solar facilities are not producing power). However, as detailed in Appendix E of the
32 Draft Solar PEIS, the average operational time of solar facilities was taken into account in
33 deriving the RFDS, so that the production time of solar facilities was factored into the estimates.
34

35 The RFDS generation and acreage estimates were used in the evaluation of cumulative
36 impacts provided in Section 6.5 of the Draft Solar PEIS. A separate cumulative impact
37 assessment for the individual SEZs was conducted for the individual SEZs that did not rely on
38 the RFDS as an indicator of overall solar development in the vicinity, but instead looked at
39 existing and proposed development of all types. If the overall RFDS of 30,000 MW is exceeded
40 prior to the end of the 20-year study period or if development on BLM-administered lands
41 exceeds 24,000 MW, the BLM and DOE would need to re-evaluate the cumulative impacts of
42 such development through additional NEPA analyses.
43
44

1 **3.4.2 Appropriateness of the RFDS**
2

3 **Summary:** Some commentors stated that the assumption that 75% of solar energy would
4 be met through development on BLM-administered lands was incorrect, because it did not
5 account for the contribution of distributed generation on rooftops.
6

7 Comments were also received comparing the state-level RFDS estimates to the land made
8 available for development in a state through SEZs, particularly in Nevada. Commentors from
9 Lincoln County stated that area of the Dry Lake Valley North SEZ should be reduced because
10 the RFDS for Nevada could be met with less land than was included in the proposed SEZ.
11

12 **Response:** The purpose of the assumptions that 50% of the RPS-based requirement for
13 renewable energy production would be provided from solar energy and that 75% of the solar
14 development would occur on BLM-administered lands was to meet the NEPA requirement to
15 estimate an upper bound of impacts on BLM-administered lands and other lands from utility-
16 scale solar development. To meet this requirement, high end estimates of utility-scale solar
17 development on BLM-administered and other lands were purposely used, so that the impacts
18 would not be underestimated. Similarly, the selection of the RPS method to estimate the RFDS
19 rather than the Renewable Energy Deployment System (ReEDS) method (see Section 2.5 of the
20 Draft Solar PEIS) was largely based on the fact that the RPS method generated larger RFDS
21 estimates. The Solar PEIS text describing the RFDS methodology states that the estimates are
22 likely to be conservatively high. The use of these assumptions in the Solar PEIS in no way limits
23 the actual amount of distributed generation development that will occur over the 20-year study
24 period. The assumption that a high proportion of utility-scale development would occur on
25 BLM-administered lands was intended to result in a conservative assessment on which the BLM
26 could base management decisions. However, the cumulative impact assessment presented in
27 Section 6.5 of the Draft Solar PEIS and the Final Solar PEIS considers the total estimated
28 development in the six-state study area, on both BLM-administered and other lands. Thus the
29 proportion of the development assumed to occur on BLM-administered lands does not limit the
30 assessment, but mainly was used to generate a conservative assessment of potential impacts on
31 BLM-administered lands.
32

33 Through the Supplement to the Draft Solar PEIS, the area of the Dry Lake Valley SEZ
34 was substantially reduced, but not to the 10,000 acres (40.5 km²) recommended by the Lincoln
35 County commentors. Additional acreage in SEZs above the amount corresponding to the state
36 RFDS is needed to account for future identification of non-development areas in any of the
37 state's SEZs, and also to account for possible export of power between states in the study area
38 (i.e., the RFDS is applicable in total for the study area, not just for individual states).
39
40

1 **3.5 INFRASTRUCTURE: TRANSMISSION AND ROADS**

2
3
4 **3.5.1 Transmission Line Assumptions and Capacity Constraints**

5
6 **Summary:** Transmission line losses were a concern for many commentors, who
7 generally stated that connecting remote solar facilities to the transmission grid would be a waste
8 of resources, because of the high costs and inefficiencies of transmitting over long distances. The
9 opinion was that transmission costs would be lower under the SEZ alternative because fewer
10 transmission lines would need to be built. The DoD stated that constructing new lines or
11 upgrading existing lines could have a large impact on its mission, depending on the location.
12

13 There were many comments regarding the assumptions used for the transmission analysis
14 in the Draft Solar PEIS, mainly that the assumption of connecting the SEZs to the transmission
15 grid through the nearest existing transmission line was not realistic, because those lines were
16 unlikely to be available and/or would not have adequate capacity. Commentors on the Draft
17 Solar PEIS requested that the following assessments should be added: the impacts (including
18 land disturbance and costs) of constructing lines along actual routes of transmission from the
19 SEZs to load centers, the available capacity on existing lines, the numbers of the substations
20 required, the need for new or expanded corridors, and the wildlife impacts of new transmission
21 lines. Some specific comments were that the identification of nearest existing transmission lines
22 for some of the proposed SEZs was incorrect.
23

24 **Response:** In the Draft Solar PEIS, background information about transmission line
25 configurations and regulations was given in Section F.4 of Appendix F. In terms of impact
26 assessment, the Draft Solar PEIS included an assessment of the need for additional corridors to
27 support development in SEZs (Appendix G), a generic assessment of the impacts on resources
28 (e.g., water, wildlife, visual resources), and potential health and safety issues associated with
29 use of public and private lands for construction and operation of transmission lines (Chapter 5).
30 With respect to the selection of the SEZ locations, it was recognized that siting the SEZs near
31 to existing transmission lines or designated corridors was important to facilitate actual
32 development; all the SEZs are located either adjacent to or close to existing lines or corridors.
33 The identification protocol for new SEZs also highlights the importance of transmission in
34 identifying new SEZs. Because the BLM and DOE do not have a transmission planning mission,
35 they have no jurisdiction over actual construction or upgrading of transmission lines. The BLM
36 can, however, help to facilitate transmission by siting corridors on public lands.
37

38 The BLM acknowledges that the assumption of tie-in to the nearest transmission lines for
39 the SEZs used in the Draft Solar PEIS was overly simplistic and did not adequately estimate the
40 possible impacts of required new transmission. Therefore, in the Final Solar PEIS, the
41 environmental impact assessment in the Draft Solar PEIS was enhanced with an upper-bound
42 assessment of the potential impacts that would result from constructing all new transmission
43 lines and substations for complete routes from SEZs to load centers, assuming the new lines
44 would follow the routes of existing transmission lines. Because of the programmatic nature of
45 the Solar PEIS and the fact that the routes for these lines are hypothetical, only a generic
46 assessment of the total land disturbance and costs of constructing transmission from SEZs to load

1 centers was provided to supplement the generic impact assessment provided in Chapter 5 of the
2 Draft Solar PEIS. This transmission impact assessment would necessarily be followed by
3 location-specific analyses for actual new or upgraded transmission associated with future solar
4 development.

5
6 The issue of transmission line losses was acknowledged in the Draft Solar PEIS, and
7 some methods for reducing line losses were discussed (see Section F.4.3.2 of Appendix F).
8 However, it appears to be transmission industry consensus that the line losses (estimated at up to
9 5% over longer transmission distances) would be tolerable in order to bring valued generation
10 sources to market).

11
12 Where applicable, the updated SEZ sections in the Final Solar PEIS corrected errors
13 regarding the locations of the nearest existing transmission lines (see the “Development
14 Assumptions for the Impact Analysis” sections for the SEZs in Chapters 8 through 13 of this
15 Final Solar PEIS).

16 17 18 **3.5.2 Substations**

19
20 **Summary:** A few commentors requested that the number, size, and cost of substations
21 required to support solar development in SEZs should be provided in the Solar PEIS
22 transmission analysis.

23
24 **Response:** The SEZ transmission analyses included in Chapters 8 through 13 of this
25 Final Solar PEIS include an estimate of the number, size, and cost of substations required to
26 bring electricity from each SEZ to a load center or centers.

27 28 29 **3.5.3 Access Road Assumptions**

30
31 **Summary:** Comments stated that existing access roads should be used where possible to
32 minimize land disturbance. Several comments were received specific to individual SEZs, stating
33 that an existing smaller road should be used and upgraded rather than constructing a new road in
34 a different path.

35
36 **Response:** The proposed programmatic design features state that existing roads should be
37 used where possible. In the Final Solar PEIS, the road location assumption for the Dry Lake
38 Valley North SEZ was changed in response to these comments, to assume the access road would
39 follow an existing county road path.

40 41 42 **3.5.4 Updated Transmission Analysis Methods and Impact Assessment**

43
44 **Summary:** These comments focused on the proposed revised transmission analysis
45 methodology presented in Section C.7.1 of Appendix C of the Supplement to the Draft Solar
46 PEIS, and the Brenda SEZ test case analysis that was made available on the project Web site at

1 the same time. Comments stated that the mid-range analysis of spare capacity on existing lines
2 was flawed because it did not consider contractual availability of the existing transmission lines.
3 In addition, comments stated that the analysis was flawed because it did not take into account
4 multiple SEZs or other generation and transmission projects in the queue, and could lead to the
5 conclusion that no new transmission lines were needed for certain SEZs. It was requested that
6 the Final Solar PEIS assess expanded and new transmission corridors to accommodate SEZ
7 development.
8

9 **Response:** The overall scope and approach for the transmission analysis in the Final
10 Solar PEIS was guided by an extensive review of comments on the Draft Solar PEIS and the
11 Supplement to the Draft Solar PEIS, and by input from staff at the BLM, the DOE, National
12 Renewable Energy Laboratory (NREL), Western Area Power Administration (Western), and the
13 Western Electricity Coordinating Council (WECC). Specifically in response to comments
14 received on the Supplement to the Draft Solar PEIS, the agencies made significant changes to the
15 transmission analysis, which are included in the Final Solar PEIS. The group of reviewers agreed
16 that establishing a reasonable upper-bound estimate for transmission requirements and impacts
17 (referred to as the dedicated-line transmission [DLT] analysis) would provide the analysis of
18 potential environmental impacts to fulfill the requirements of NEPA for the programmatic scope
19 of the Solar PEIS. This upper-bound analysis (DLT) identified the most likely load centers for
20 power generated at a given SEZ, and estimated the land disturbance and costs associated with
21 constructing all new transmission lines to the load centers along the routes of existing lines.
22 Various transmission line configurations (in terms of circuit and bundle number) were evaluated
23 to determine a range of possible costs. This analysis estimate the upper-bound impacts of
24 transmission construction associated with the SEZs, because it was assumed that no spare
25 capacity on existing lines was utilized.
26

27 As presented in the Supplement to the Draft Solar PEIS, the agencies also considered and
28 tested a mid-range analysis, referred to as the shared-line transmission (SLT) analysis, in an
29 attempt to evaluate the available capacity of the existing grid and available information about
30 new planned or proposed transmission lines, some of which may be able to accommodate new
31 solar electricity generation. The SLT methodology was determined to be useful in estimating
32 potential spare capacity on existing lines, but is subject to greater uncertainties than estimating
33 upper bounds as developed through the DLT analysis. While the SLT approach provides
34 reasonable treatments of many transmission system capability factors, it does not capture all the
35 considerations that influence transmission planning. For example, some of the technical
36 representations that are typically addressed with greater precision in full-scale load flow studies
37 were beyond the scope of this study (such as simulating all generation sources, all loads, and all
38 transmission elements dynamically to determine how new generation sources influence system-
39 wide balances). Based on these considerations, feedback on the methodology, and comments on
40 an initial SLT test case, the SEZ-specific results of the SLT analyses have not been included in
41 Chapters 8 through 13 of this Final Solar PEIS.
42

43 While the agencies expanded the scope of the transmission analysis in this Final Solar
44 PEIS to include an upper-bound scenario for transmission development, adequacy of NEPA
45 analysis, is very different from actually planning and constructing transmission lines to SEZs.
46 The agencies recognize that the Solar PEIS itself can only go so far to address the real needs of

1 industry, but are committed to facilitating transmission to SEZs as an essential part of the
2 ongoing program.

3
4 The BLM is committed to developing a set of guiding principles and corresponding
5 process steps that will help ensure that current and future SEZs have the transmission
6 infrastructure necessary to support full-scale project development. These steps will be a
7 component of the established Solar Energy Program. Facilitating transmission to SEZs will
8 require the BLM to more actively engage in regional transmission planning efforts coordinated
9 through WECC and the California Independent System Operator (CAISO).

10 11 12 **3.5.5 Transmission Corridors**

13
14 **Summary:** Comments requested that new transmission corridors be designated through
15 the Solar PEIS and that impacts from corridor designation be assessed.

16
17 **Response:** The Draft Solar PEIS included an assessment of the need for new corridors to
18 support solar energy development. The assessment identified all BLM-administered lands within
19 the six-state study area that were more than 25 mi (40 km) from existing transmission lines or
20 corridors (termed transmission-constrained areas). The BLM will continue to evaluate
21 transmission needs for the currently proposed SEZs including consideration of available capacity
22 on existing lines and the need for new or modified corridors; efforts will also be made to
23 proactively plan for any new or expanded corridors that may be needed to serve currently
24 proposed SEZs. As part of the identification process for new or expanded SEZs, the BLM will
25 simultaneously evaluate its transmission needs, including the need to designate new corridors or
26 modify existing corridors (e.g., modify widths, modify locations). Corridor modifications or
27 designations may be achieved through a joint land use planning and NEPA process to the extent
28 practicable (see Section A.2.6 of Appendix A).

29 30 31 **3.5.6 Transmission Planning, Policies, and Incentives**

32
33 **Summary:** Some commentors stated that requirements should be included for generators
34 to develop and share substations and gen-ties (local, generator-developed transmission lines used
35 to connect energy generation facilities with the regional transmission grid), both to efficiently
36 use infrastructure and to avoid geographically stranding some projects. A commentor also noted
37 that solar facilities should share transmission facilities with wind projects where possible.

38
39 Other general concerns included coordination with transmission planning agencies
40 (e.g., North American Electricity Reliability Corporation [NERC], WECC, CAISO) and
41 incentives for constructing in SEZs with respect to transmission.

42
43 **Response:** The BLM recognizes that there can be potential problems if substations and
44 gen-ties are not shared by developers with projects in the same SEZ and has included the
45 following item under Section 2.2.2.2.3 (Incentives for Projects in SEZs) of this Final Solar PEIS:
46 “In preparing parcels in SEZs for competitive offer, the BLM will seek to make the most

1 efficient use of existing corridors, consider opportunities for co-location, and avoid
2 geographically stranding future projects from key transmission interconnection points.” The
3 possibility of sharing transmission lines or substations between wind and solar projects would be
4 evaluated at the project-specific level. The BLM and the DOE have worked extensively to
5 incorporate suggestions for improving the transmission planning, policies, and incentives for
6 solar development (particularly within the SEZs), within the capacities of their jurisdictions. For
7 example, the BLM requested that the currently proposed SEZs be reviewed as a case study by
8 the Transmission Expansion Planning Policy Committee (TEPPC) of the WECC as part of the
9 2012 Study Program (the case study would examine system performance impacts associated with
10 introducing power from the SEZs). The Draft 2012 TEPPC Study Program shows that request
11 has been prioritized as high, meaning that it will be studied in the first round of TEPPC cases.
12 Additional incentives for development in the SEZs are presented in Section 2.2.2.2.3 of this Final
13 Solar PEIS.

14 15 16 **3.6 PUBLIC INVOLVEMENT AND NEPA COMPLIANCE**

17 18 19 **3.6.1 Public Involvement**

20
21 **Summary:** Many comments received during scoping for the Draft Solar PEIS requested
22 that meetings be held in locations that would be affected by the Solar PEIS and requested that the
23 public be kept informed of PEIS updates through the Internet, local papers, and local broadcasts.
24 Other comments recommended that the BLM reach out to local communities (including local
25 government, sportsmen, ranchers, and farmers) and tribes and provide opportunities for local
26 involvement.

27
28 Some public comments received on the Draft Solar PEIS stated that scoping comments
29 had not been adequately considered in preparation of the Draft. Commentors argued that if the
30 BLM made substantial changes to the proposed action, it must publish a Supplement as opposed
31 to a Final PEIS; commentors stated that new information could not be included in the Final PEIS
32 and ROD and that the public had not been given the opportunity to comment on that information.
33 Many comments requested an extension to the comment periods for both the Draft and the
34 Supplement because of the documents’ size.

35
36 Commentors on the Supplement to the Draft Solar PEIS requested that they be able to
37 review the adaptive management plan and programmatic design features discussed in that
38 document before they would be published in the Final PEIS. Many commentors felt that the
39 BLM was responsive to public comments and recommendations made by the public, appreciated
40 the publication of the Supplement to the Draft Solar PEIS to allow public comment on the
41 revised alternatives, and appreciated that geospatial data were made available on the project Web
42 site. In particular, commentors appreciated the changes to SEZs and variance lands that BLM
43 made in the Supplement to the Draft PEIS.

44
45 Commentors requested that, after publication of the ROD for the Solar PEIS, all variance
46 requests be made available online to the public and that all data used for decisions, monitoring,

1 and variance processes also be made available in a timely manner. Commentors requested that
2 new data on the SEZs also be made available.
3

4 **Response:** The BLM and the DOE have made extensive opportunities for involvement
5 and comment available to the public throughout the NEPA process of preparation of the Solar
6 PEIS. A project Web site for the public was made available at the beginning of the scoping
7 process to make relevant project information available, and the public was offered the
8 opportunity to subscribe through the project Web site to receive e-mail updates of important
9 project milestones. The agencies conducted scoping for the PEIS from May 29, 2008, through
10 July 15, 2008, during which time members of the public could provide comments on the scope
11 and objectives of the PEIS through the Solar PEIS Web site, by mail, or orally at public
12 meetings. Public meetings were held at 11 locations during the scoping period. In June 2009, the
13 BLM announced the availability of maps of the solar energy study areas and initiated a 90-day
14 public comment period with respect to the study areas. After publication of the Draft Solar PEIS,
15 there was a 90-day comment period that was extended for an additional 30 days and then
16 extended a final time for an additional two weeks. Fourteen public meetings were held during the
17 comment period on the Draft Solar PEIS. After consideration of comments, the BLM made
18 significant changes to the Draft Solar PEIS including the elimination of seven SEZs from further
19 consideration. In October 2011, the BLM published a Supplement to the Draft Solar PEIS and
20 initiated a 90-day comment period with plans for four public meetings. In response to requests,
21 the BLM added an additional public meeting in the San Luis Valley in January 2012. In addition,
22 in response to requests to allow the public an opportunity to see key new or revised materials
23 prior to release of the Final Solar PEIS, several key elements of the BLM's Solar Energy
24 Program (i.e., proposed programmatic design features, the proposed Solar Long-Term
25 Monitoring and Adaptive Management plan, and the proposed Regional Mitigation Framework
26 were made available through the project Web site ([http://www.solareis, anl.gov](http://www.solareis.anl.gov)) in April 2012.
27 The BLM has continued to work with stakeholders throughout the preparation of the Final Solar
28 PEIS. In particular, the BLM worked with cooperating agencies between the release of the
29 Supplement and the Final Solar PEIS to exclude additional lands in close proximity to NPS units
30 and overlapping priority desert tortoise connectivity habitat.
31

32 Although the BLM considered all comments submitted during public comment periods,
33 not all comments resulted in changes to the PEIS. The project Web site is available to inform the
34 public of PEIS updates and information. The Web site includes all project documents including
35 public meeting transcripts, the full Draft Solar PEIS, Supplement to the Draft Solar PEIS, and
36 Final Solar PEIS; documents to support solar energy development; GIS data for the lands
37 available under the various BLM alternatives; interactive mapping tools; panorama views of each
38 SEZ; ethnographic analyses for nine proposed SEZs; BLM solar and renewable energy policies;
39 and additional resources about solar energy technologies.
40

41 42 **3.6.2 Government-to-Government Consultation** 43

44 **Summary:** Many commentors requested that federal agencies comply with the
45 Section 106 process and engage in government-to-government consultation when reviewing
46 individual proposed projects; they opposed approval of utility-scale solar projects before

1 completion of Section 106 and government-to-government consultation processes. There were
2 concerns that government-to-government consultation with tribes was not adequate to identify
3 specific information about project impacts on traditional cultural properties. One commentor
4 requested that BLM consult with tribes to identify additional areas that should be excluded
5 from solar energy development. Commentors requested that the BLM and the DOE discuss
6 more explicitly how impacts on tribal or cultural resources will be avoided or mitigated,
7 consistent with Executive Order (E.O.) 13175, “Consultation and Coordination with
8 Indian Tribal Governments” (*Federal Register* 65[281]:67249–67252), Section 106 of
9 the National Historic Preservation Act, and E.O. 13007, “Indian Sacred Sites” (*Federal*
10 *Register* 61[104]:26771–26772).

11
12 Commentors also recommended that BLM and DOE identify the most effective ways of
13 establishing meaningful consultation and collaboration with tribal officials. One commentor
14 recommended that BLM and DOE work with the Bureau of Indian Affairs to engage tribal
15 governments to determine whether there is interest in developing future SEZs on tribal land.
16 A comment was made that the scope of the PEIS is too large to conduct meaningful tribal
17 consultation. Another commentor was disappointed that there was no coordination between the
18 tribes and the local BLM field offices. There was a request that BLM complete the Section 106
19 process before the ROD is signed for the PEIS. One commentor requested that tribes be made
20 partners as power providers.

21
22 **Response:** In response to concerns over BLM tribal consultation practices, Instruction
23 Memorandum (IM) No. 2012-032, “Native American Consultation and Section 106 Compliance
24 for the Solar Energy Program Described in Solar Programmatic Environmental Statement,” was
25 issued in December 2011 to improve tribal consultation procedures for the solar program
26 (see Section A.1 of Appendix A) The BLM will consult with federally recognized Indian tribes
27 early in the planning process to identify issues and areas of concern regarding any proposed solar
28 energy project. Such consultation is required by the National Historic Preservation Act of 1966
29 (NHPA) and other authorities (such as E.O. 13175, “Consultation and Coordination with
30 Indian Tribal Government,” E.O. 13007, and the like) and is necessary to determine whether
31 construction and operation of a project is likely to disturb traditional cultural properties or sacred
32 sites, impede access to culturally important locations, disrupt traditional cultural practices, affect
33 movements of animals important to tribes, or visually affect culturally important landscapes.
34 Such consultation shall cover planning, construction, operation, and reclamation activities. The
35 BLM will work with tribes during consultations to establish reasonable schedules for their input
36 on important projects, recognizing their limited resources and the time necessary to thoroughly
37 review a project. Agreements or understandings reached with tribes shall be carried out in
38 accordance with the terms of memorandums of agreement (MOAs) or State Specific Procedures
39 as defined within the Solar Programmatic Agreement (PA). The BLM will also consult with
40 Indian tribes under the terms of the Native American Graves Protection and Repatriation Act
41 (NAGPRA). Consultation will continue beyond the ROD for this Final Solar PEIS.

42
43 BLM IM No. 2011-061, “Solar and Wind Energy Applications—Pre-application and
44 Screening,” issued in February 2011, describes the pre-application and screening procedures
45 required for solar and wind energy applications. Agency policy requires at least two pre-
46 application meetings with the applicant. Their purpose includes the identification of needed

1 cultural resource studies. Tribes will be asked to participate. Screening criteria encourage
2 responsible BLM line officers to prioritize the processing of applications for areas with the
3 lowest potential for conflicts, including cultural resource concerns.
4

5 Appendix K summarizes the government-to-government tribal consultation efforts
6 undertaken by the BLM throughout the development of the Solar PEIS. Consultation in the form
7 of correspondence, phone conversations, e-mail, and transmission of maps, documents, and
8 reports has occurred with more than 65 tribes. Face-to-face meetings with at least 16 tribes have
9 led to the exchange of information and concerns that have shaped the outcome of this PEIS
10 process.
11

12 Ethnographic studies were also completed for several SEZs in Nevada and Utah, and the
13 results have been incorporated into this Final Solar PEIS. The completed ethnographic report is
14 available in its entirety on the project Web site (<http://solareis.anl.gov>). In a letter sent to all
15 tribes with cultural and/or historical ties to SEZ and/or variance areas in October 2011, the BLM
16 asked whether they shared concerns similar to those expressed in the ethnographic report. The
17 BLM inquired whether, for those areas of cultural and historical importance to tribes, there are
18 landscape features, sites, or resources of cultural, historical, or sacred importance that the BLM
19 should consider in the environmental review process. The BLM asked whether there are
20 published or unpublished ethnographic accounts or other studies that tribes would recommend
21 the BLM review when evaluating sacred landscapes or traditional cultural properties in areas
22 subject to solar development. Additional cultural and ethnographic work is also being conducted
23 for the SEZs in Colorado, as indicated in the Colorado SEZ sections of the Final Solar PEIS. As
24 money becomes available, it is possible that additional ethnographic studies could be funded
25 within the remaining SEZs in the future.
26

27 Regarding future applications, government-to-government and project-specific
28 consultations with tribal staff usually provide adequate opportunities for tribes to identify
29 traditional cultural properties or sacred sites. However, there may be times when responsible line
30 officers need new ethnographic research to adequately consider the effects of solar development
31 on issues and resources of concerns to tribes. BLM Field Office cultural staff, including
32 specialists assigned to Renewable Energy Coordination Offices where present, in consultation
33 with their Deputy Preservation Officer, will recommend to responsible BLM line officers
34 whether new ethnographic data are required for a given solar application. Should new
35 ethnographic research, studies, or interviews be judged as necessary, the BLM cultural staff, in
36 consultation with tribal officials, will recommend to BLM line officers the appropriate scope of
37 the study, as well as provisions for safeguarding data confidentiality if requested by the tribe.
38
39

40 **3.6.3 Cooperators and Local Government Participation**

41
42

43 **3.6.3.1 Cooperators and Government Participation**

44

45 **Summary:** Comments were received on both the Draft Solar PEIS and the Supplement to
46 the Draft Solar PEIS from most of the cooperating agencies (see Section 1.6 of this Final Solar

1 PEIS for the list of cooperators). The comments expressed various concerns relating to the
2 cooperators' input to the BLM's Solar Energy Program. The NPS requested that it have a role in
3 determining the appropriateness of applications in variance areas in proximity to NPs and
4 National Historic Trails. Subsequent to publication of the Supplement, the USFWS and the
5 NPS submitted detailed GIS information to the BLM requesting that specific areas near NPS
6 units and desert tortoise connectivity areas be eliminated from the variance area footprint.
7 Lincoln County in Nevada provided extensive comments on the Draft Solar PEIS with rationale
8 for exclusion of the proposed Delamar Valley and East Mormon Mountain SEZs and for a
9 reduction in size of the Dry Lake Valley North SEZ; Lincoln County also requested that it be
10 involved in the development of regional mitigation plans. The California Energy Commission
11 (CEC) recommended cooperation between the BLM and CEC in order to better site solar
12 projects. Commentors urged the BLM to develop policies to encourage interagency coordination
13 (e.g., MOUs), including specific guidance on coordination with military and civilian aviation and
14 radar concerns. Esmeralda County in Nevada stated that the BLM should have considered some
15 locations in the county for SEZs. The Nevada Department of Wildlife requested more
16 participation in providing information and data relating to wildlife and the desert tortoise
17 variance process requirements.
18

19 **Response:** The BLM worked extensively with the cooperating agencies throughout
20 preparation of the Solar PEIS. Pre-publication versions of the main sections of both the Draft
21 and Final Solar PEIS were provided to the cooperators, and their comments were considered in
22 preparation of the published versions. In many cases changes were made to the Solar PEIS in
23 response to concerns expressed by cooperators (e.g., changes made in response to Lincoln
24 County comments). In addition, the BLM worked with the NPS and the USFWS between the
25 release of the Supplement and the Final Solar PEIS to exclude some additional lands in close
26 proximity to NPS units and overlapping priority desert tortoise connectivity habitat.
27
28

29 **3.6.3.2 Local Government Participation**

30

31 **Summary:** Many commentors urged that the BLM work with local governments at the
32 beginning of the application process when developing solar energy, because it is greatly affected
33 by decisions made concerning the management and development on federal land. Commentors
34 expressed concern that the PEIS did not include stronger language when referring to
35 coordination with local governments and their regulatory requirements. Inyo County in
36 California requested additional coordination with the BLM to resolve inconsistencies between
37 the PEIS and its General Plan, including potential areas for renewable energy development.
38 Other commentors were also concerned with consistency between BLM and local plans and
39 policies. There were concerns from local governments about potential lost economic
40 opportunities (tourism, mining, grazing, and recreation) and that there is not clear guidance on
41 how local governments can have economic impacts addressed and mitigated. There were also
42 concerns that costs to local government from increased infrastructure and need for public
43 services were not fully addressed. One commentor requested that the BLM allow counties to
44 have a role in designating future SEZs, while another requested that local governments be
45 included in the assessment of energy need. Another commentor recommended that the BLM—
46 not local and state government—fund monitoring programs. One comment recommended that

1 discussions with state and local governments be conducted before SEZs were eliminated from
2 consideration, while another recommended that the new SEZ protocol include a requirement that
3 all petitions for new SEZs have support from the state and county. A comment was received
4 requesting that local governments be required to attend at least one pre-application meeting and
5 that consultation with the state and local government occur during the variance process. A few
6 commentors argued that their comments had not been adequately addressed.

7
8 **Response:** The BLM has identified many opportunities for local governments to
9 participate in the Solar Energy Program and has provided opportunities for coordination among
10 local stakeholders. As outlined in its planning criteria, the BLM will coordinate with federal,
11 state, and local agencies and tribal governments in the PEIS and plan amendment process to
12 strive for consistency with existing plans and policies, to the extent practicable. The SEZ
13 Identification Protocol allows new SEZs to be identified and analyzed through state or local land
14 use planning efforts, and the BLM will encourage local land use planning efforts to consider the
15 need for, and identify as appropriate, new SEZs as part of regular land use plan revisions. In
16 addition to the land use planning and NEPA processes, the BLM will utilize local Resource
17 Advisory Councils (RACs) as a venue for sharing information and engaging in a meaningful
18 dialogue with interested stakeholders. The BLM will require prospective applicants in variance
19 areas to schedule and participate in two preliminary meetings with the BLM before filing a ROW
20 application in a variance area; the aim of the second preliminary meeting is to initiate and ensure
21 early coordination with federal (e.g., NPS and USFWS), state, and local government agencies
22 and tribes. Finally, BLM’s proposed programmatic design features includes many opportunities
23 for local government involvement and consultation including the following: (1) make early
24 contact with local officials, regulators, and inspectors to explore all applicable regulations and
25 address concerns unique to solar power generation projects; (2) emphasize early identification of,
26 and communication and coordination with, stakeholders, including, but not limited to, federal,
27 state, and local agencies; special interest groups; Native American tribes and organizations;
28 elected officials; and concerned citizens; (3) consult with local agencies regarding potential
29 impacts of development within, adjacent, or close to state or local special use areas such as
30 parks; (4) avoid lands identified as incompatible for renewable energy development by local
31 governments; (5) compare preliminary site grading, drainage, erosion, and sediment control
32 plans with applicable local jurisdiction requirements; (6) consult federal, state, and local “water-
33 wise” guidelines, as applicable, for project development in the arid Southwest; (7) site facilities
34 to maximize local, regional, and statewide economic benefits and utilize coordination with local
35 and state entities such as state and county commissions, planning departments, and so on; and
36 (8) site projects to minimize adverse effects on area housing markets and local infrastructure
37 (e.g., schools and other public services) and to ensure adequate housing vacancy rates and local
38 infrastructure support for workers and their families.

39 40 41 **3.6.3.3 State and Regional Participation**

42
43 **Summary:** Many commentors recommended that future solar development in the
44 California desert should be closely coordinated with the DRECP development and
45 implementation. Comments requested that the PEIS incorporate solar energy development and
46 conservation areas identified through other federal and state solar energy planning efforts such as

1 the DRECP and Arizona Restoration Design Energy Project (RDEP); the PEIS should also
2 indicate that additional requirements may apply under the DRECP and the Arizona RDEP that
3 could supersede those presented in the Solar PEIS.
4

5 There were also recommendations that the BLM defer BLM land use plan amendments
6 for the lands identified that are outside of the SEZs pending the outcome of the DRECP planning
7 effort. Commentors recommended that the BLM adopt a plan of avoiding known key habitats in
8 the California Desert Conservation Area (CDCA) pending completion of the DRECP. There was
9 a recommendation that the Final Solar PEIS should consider how federal policies will be
10 coordinated with the mitigation measures that will be developed as part of the California DRECP
11 and those in the recently issued USFWS guidance on the Bald and Golden Eagle and Migratory
12 Bird Treaty to ensure that developers are not subject to multiple mitigation standards.
13

14 Recommendations were made that the BLM should consider policies, recommendations,
15 and findings from state and regional stakeholders including the CEC, Nevada's electric utility
16 agency, Public Utilities Commission of Nevada (PUCN); Arizona's Arizona Corporation
17 Commission (ACC); water managers in Nevada, Arizona, and California; the California
18 Transmission Planning Group; the State of Nevada's Renewable Energy Transmission Access
19 Advisory Committee; the Nevada State Engineer; the Utah Office of Energy Development; the
20 Nevada Department of Wildlife; the State of Nevada Energy Office; and the Western Governors
21 Association. Commentors urged the BLM to work with these groups because groups at the state
22 level might be in a better position to address potential conflicts based on regional knowledge
23 unavailable to a federal agency. Similarly, comments argued that SEZs were identified based on
24 state-by-state evaluations rather than regional relationships and do not take into account federal,
25 state, and local plans and initiatives and that regional planning must occur in the identification of
26 new SEZs. A recommendation was made that the Solar PEIS encourage or mandate the BLM to
27 issue MOUs detailing agency specific responsibilities with affected state and local agencies
28 when siting future solar facilities on BLM lands. Commentors recommended that there be
29 coordination with state issues such as land use conflicts such as mitigation target areas.
30

31 Comments recommended that environmental reviews be administered through the local
32 field offices and that field offices determine the siting for solar energy projects. One comment
33 recommended that BLM offices in Nevada and California need to jointly process applications in
34 the Amargosa region where development on both sides of the state line may have effects on
35 regional groundwater systems. Finally, comments urged BLM to consider regional conservation
36 strategies.
37

38 **Response:** The BLM has identified many opportunities for local governments to
39 participate in the Solar Energy Program and has provided opportunities for coordination among
40 local stakeholders. As outlined in its planning criteria, the BLM will coordinate with federal,
41 state, and local agencies and tribal governments in the PEIS and plan amendment process to
42 strive for consistency with existing plans and policies, to the extent practicable. The SEZ
43 Identification Protocol allows new SEZs to be identified and analyzed through state or local land
44 use planning efforts and the BLM will encourage local land use planning efforts to consider the
45 need for, and identify as appropriate, new SEZs as part of regular land use plan revisions. In
46 addition to the land use planning and NEPA processes, the BLM will utilize local RACs as a

1 venue for sharing information and engaging in a meaningful dialogue with interested
2 stakeholders. BLM’s proposed landscape approach aims to promote coordinated partnership
3 actions at the landscape and local levels.
4

5 The BLM will give consideration to ongoing regional efforts as part of the evaluations
6 of projects in variance areas and the identification of new SEZs. The BLM will require
7 applicant’s present information that the proposed project will be consistent with priority
8 conservation, restoration, and/or adaptation objectives in best available landscape-scale
9 information. When evaluating projects in variance areas, the BLM will consider if the proposed
10 project will be located in a priority area identified in an applicable BLM land use plan for
11 solar energy development and/or by another related process such as the California DRECP
12 (e.g., Development Focus Areas) or Arizona RDEP (e.g., Renewable Energy Development
13 Areas). Further, as described in the variance process, the Renewable Energy Action Team
14 (REAT) agencies will be engaged in evaluating variance applications submitted in the DRECP
15 planning area to maintain consistency between the PEIS and the DRECP’s goals and objectives.
16 This need for consistency with the DRECP goals and objectives and other ongoing regional
17 efforts is also highlighted in the identification protocol for new SEZs.
18
19

20 **3.6.4 Adequacy of NEPA Analysis** 21

22 **Summary:** Many commentors thought that the purpose and need was too narrow and that
23 the PEIS failed to consider a full range of alternatives. Alternatives suggested by commentors
24 included distributed energy, nonfederal lands, and conservation. Commentors also claimed that
25 the PEIS did not adequately assess environmental impact, impacts of transmission line upgrades,
26 and the cumulative impacts of widespread energy development. Specifically, commentors
27 thought that the PEIS failed to provide a quantitative analysis of cumulative impacts and that
28 there was not enough baseline information to develop a Final PEIS.
29

30 Other commentors were concerned that the design features were too broad and could be
31 interpreted or applied inconsistently. Other commentors similarly requested that the language in
32 Appendix A be stronger and that the PEIS include unresolved, deferred, and inadequate
33 mitigation measures.
34

35 Commentors suggested that standards and guidelines be established for project-specific
36 EISs, that the PEIS should be revised every 5 years, and that there be a discussion of the appeals
37 process. At least one commentor indicated that the PEIS failed to adequately evaluate the
38 suitability of the SEZs. Other commentors recommended that the Amargosa Valley, Millers, and
39 Brenda SEZs be evaluated in the cumulative impacts sections for the California SEZs because
40 issues with water, listed species, and viewsheds could have an impact in multiple states.
41

42 **Response:** As described in the Final Solar PEIS, the BLM expects to make planning-
43 level decisions through the Solar PEIS, such as land use designations and design features. The
44 program elements adopted via planning-level decisions will provide the basis for future project-
45 specific utility-scale solar energy development decisions. The Solar PEIS appropriately evaluates
46 the potential direct, indirect, and cumulative environmental, social, and economic effects of

1 establishing broad Solar Energy Program elements and strategies across the six-state study area.
2 Because the proposed program involves environmental effects over a broad geographic and time
3 horizon, the depth and detail of the impact analysis are fairly general, focusing on major impacts
4 in a qualitative manner.
5

6 The Solar PEIS reasonably enumerates and quantifies past and ongoing actions that affect
7 the environment in Chapter 6 and in the individual SEZ chapters. However, given the high level
8 of uncertainty in both the ultimate level of development and the locations of development, it
9 would not be appropriate to speculate on the specific contributions of such development to
10 cumulative impacts, but rather to make assessments as to whether such contributions on the
11 whole would be small, moderate, or large, as the Solar PEIS does. It is not possible at this time
12 to perform a meaningful quantitative analysis of cumulative effects, for example, employing
13 biological thresholds that could portend disproportionate effects. The level of cumulative effects
14 analysis performed in the Solar PEIS is appropriate for the current level of understanding of
15 foreseeable solar development and for informing the decision for which the analysis was
16 performed.
17
18

19 **3.6.5 Need for Supplementation of the Draft Solar PEIS**

20

21 **Summary:** Commentors were concerned that the Draft Solar PEIS was did not provide
22 enough site-specific analysis to ensure the best management of public resources. One commentor
23 recommended that a second Draft Solar PEIS be issued before a Final Solar PEIS that would be
24 broader in scope and include more detailed analysis than the Draft Solar PEIS included. One
25 commentor was concerned that many of the proposed design features, mitigation measures, and
26 monitoring plans presented in the Draft Solar PEIS were too broad in nature, and called for
27 greater detail in the Final Solar PEIS. Regarding the Supplement to the Draft Solar PEIS, a few
28 commentors stated that if the additional data identified as needed in the Supplement to the Draft
29 would constitute significant new information relevant to environmental concerns, the BLM must
30 publish another Supplement to the Draft Solar PEIS instead of a Final Solar PEIS, and circulate
31 the Supplement to the public for review.
32

33 **Response:** The program elements of the Solar PEIS to be adopted by the BLM via
34 planning-level decisions will provide the basis for future project-specific utility-scale solar
35 energy development decisions. The Solar PEIS appropriately evaluates the potential direct,
36 indirect, and cumulative environmental, social, and economic effects of establishing broad Solar
37 Energy Program elements and strategies across the six-state study area. Because the proposed
38 program involves environmental effects over a broad geographic and time horizon, the depth and
39 detail of the impact analysis is fairly general, focusing on major impacts in a qualitative manner.
40 The modifications to the BLM proposed Solar Energy Program made through the Supplement to
41 the Draft Solar PEIS and the Final Solar PEIS address many of the concerns raised by the
42 commentors.
43

44 The SEZ action plans in the Supplement to the Draft Solar PEIS described additional data
45 that could be collected for individual SEZs and proposed data sources and methods for the
46 collection of those data. Work is under way by the BLM to collect some of the additional data as

1 specified under these action plans (e.g., additional data collection to support evaluation of
2 cultural, visual, and water resources has begun). The BLM intends to make additional data for
3 the SEZs that are obtained subsequent to issuance of the Solar PEIS available to interested
4 stakeholders through the Solar PEIS Web site (solareis.anl.gov). Notices of new data availability
5 will be sent to Web site subscribers. However, note that additional data and analysis will help
6 facilitate development in SEZs, but the BLM is not required to identify an area as an SEZ as part
7 of the Solar Energy Program.
8
9

10 **3.7 POLICY**

11
12

13 **3.7.1 Need for an Energy Plan**

14

15 **Summary:** Comments requested that the agencies review their missions in light of a
16 national energy policy in order to address issues such as how much solar power is needed, how
17 large the facilities should be, the technologies that should be used, and where they should be
18 located (e.g., near demand).
19

20 **Response:** This Solar PEIS was undertaken to address the direction of Congress to
21 facilitate renewable energy development (in this case solar), both on private and public lands.
22 The amount of solar energy production evaluated (the RFDS) is based on each of the six states'
23 legislated demand for renewable power. It is not the mission of the agencies or the Solar PEIS to
24 determine issues such as which of the available technologies should be used or a maximum
25 facility size. The Solar PEIS does delineate the potential adverse impacts of the technologies,
26 identifies particularly sensitive lands, and develops appropriate and protective corresponding
27 required mitigation measures (design features).
28
29

30 **3.7.2 Equity/Local Impacts**

31

32 **Summary:** Many comments on the Draft Solar PEIS stated that there should be some
33 benefits to towns and counties from solar development on nearby public lands. Comments on the
34 Supplement to the Draft Solar PEIS stated that there should be a substantial benefit to the local
35 and regional communities near solar developments and that local residents should be hired to
36 work at the solar facilities. Some comments favored a phased approach to development to avoid
37 boom/bust cycles and to promote permanent jobs.
38

39 **Response:** Revenues from ROW authorizations on the public lands, including solar
40 energy ROW authorizations, are deposited in the General Fund of the Treasury. There is no
41 authority under the Federal Land Policy and Management Act (FLPMA) or other laws that
42 provides for any other distribution of revenues to state or local governments. Special legislation
43 would be required to provide for any other distribution of revenues, and this is outside the scope
44 of the Solar PEIS. The BLM does intend to consider the social and economic impacts associated
45 with the build out of SEZs through the development of regional mitigation plans for SEZs.
46

1 Some local revenues would be generated through local sales tax on materials, equipment,
2 and supplies for solar facilities purchased locally and from purchases and expenses by solar
3 facility employees in the local area. In addition, utility-scale solar energy development could
4 result in local and regional economic benefits in terms of both jobs and income created. The
5 associated transmission system development and related road construction would also translate
6 into new jobs and income. These benefits would occur as both direct impacts, resulting from the
7 wages and salaries, procurement of goods and services, and collection of state sales and income
8 taxes, and indirect impacts, resulting from new jobs, income, expenditures, and tax revenues
9 subsequently created as the direct impacts circulate through the economy. Increasing the pace of
10 solar energy development would cause these economic benefits to be realized at a faster pace as
11 well.
12
13

14 **3.7.2.1 Impacts on the San Luis Valley Community** 15

16 **Summary:** Several comments were received indicating a preference for small-scale
17 development on private lands in the San Luis Valley. Commentors were in favor of phased
18 development that would promote sustainable economic growth and reduce impacts. There were
19 also concerns that equitable revenue sharing was not analyzed in the Solar PEIS and requests that
20 the Solar Program require hiring of local residents. Commentors stated that a plan for the energy
21 produced in the valley is needed, and that some or all of the electricity generated should stay in
22 the valley. Concerns were expressed about transmission constraints within the San Luis Valley
23 (e.g., limited possible routes in and out).
24

25 **Response:** Decisions on utility-scale projects on public lands do not preclude smaller
26 developments on private lands, if there is market interest. Revenues from ROW authorizations
27 on the public lands, including solar energy ROW authorizations, are deposited in the General
28 Fund of the Treasury. There is no authority under FLPMA or other law that provides for any
29 other distribution of revenues to state or local governments. Special legislation would be required
30 to provide for any other distribution of revenues, and this is outside the scope of the Solar PEIS.
31

32 Programmatic design features for environmental justice (see Section A.2.2.19 of the Final
33 Solar PEIS) require projects on BLM-administered lands to evaluate environmental justice issues
34 and to minimize and/or mitigate potential environmental, economic, cultural, and health impacts
35 on low-income and minority populations. For example, design features include consideration of
36 establishing vocational training programs in communities to promote the development of skills
37 required at solar facilities. While the BLM is not authorized to require revenue sharing with local
38 communities, it would encourage developers to communicate with local communities and
39 attempt to address their concerns. Further, the BLM does intend to consider the social and
40 economic impacts associated with the build out of SEZs through the development of regional
41 mitigation plans for SEZs which will include extensive involvement of local stakeholders
42 (see Section A.2.5 of Appendix A). Also, because the BLM will offer lands in SEZs through a
43 bureau-driven competitive process, it will be in a position to phase development in SEZs
44 overtime.
45

1 It is not within the authority of the BLM to make requirements on where electricity
2 generated at facilities on public lands would be distributed. Additional NEPA analysis would be
3 required for new transmission lines to take solar-generated electricity out of the San Luis Valley
4 (if needed). The transmission analyses included for each of the four SEZs in the Valley
5 (Sections 10.[1,2,3, and 4].23 in the Final Solar PEIS) assume that new transmission lines would
6 follow the path of existing transmission to avoid potential conflicts from construction of new
7 transmission lines in undisturbed sensitive areas.
8
9

10 **3.7.3 Variance Process**

11
12 **Summary:** Many comments on the Draft Solar PEIS favored minimizing the numbers of
13 ROWs granted outside of zones, the need for a stringent pre-application screening process, and
14 the need for the BLM to clarify its ability to reject applications. For the Supplement to the Draft
15 Solar PEIS, many comments reiterated that applications for lands outside of SEZs should only be
16 processed for areas with low resource conflicts and only if land available within solar energy
17 zones was insufficient. It was stated that the BLM should exhaust processing of all pending
18 applications and fully develop SEZs prior to granting ROWs in variance areas. If significant
19 conflicts are identified for specific variance areas, these areas should be excluded from
20 development. Comments requested involvement of the public at the pre-application phase and
21 requested that the description of the variance process be clear on the requirements for
22 applications in variance areas. It was specifically requested that the process for minimizing
23 impacts on holders of grazing rights be clarified.
24

25 **Response:** Many of the suggestions on the Draft Solar PEIS were implemented through
26 the development of a variance process in the Supplement to the Draft Solar PEIS. For the Final
27 Solar PEIS, additional appropriate revisions were made to the variance process, for example, to
28 clarify policies for coordination with state and local government agencies. Some clarifications to
29 the description of the variance process made for the Final Solar PEIS include additional text to
30 indicate that the most current data and best science will be used when applications in variance
31 areas are reviewed and a requirement for two preliminary meetings with the BLM and other
32 federal, state, and local government agencies and for a pre-NEPA public meeting as part of the
33 variance process. Details on the procedures for minimizing impacts on grazing rights holders
34 have been added to the ROW authorization policies, applicable to both applications within SEZs
35 and in variance areas (see Section 2.2.1.1 of the Final Solar PEIS, under Due Diligence – Plan of
36 Development). In addition, revisions to the variance process make clear that impact assessment
37 for transmission must be included as part of the overall evaluation of a proposal.
38

39 Regarding limiting processing of applications outside of zones, one objective of the
40 BLM's proposed Solar Energy Program is to provide flexibility to the solar industry to consider
41 a variety of locations for development. Variances may be needed in the near term because the
42 lands identified as SEZs might be insufficient to accommodate demand for utility-scale solar
43 development or may not have access to adequate transmission capacity to facilitate such
44 development. In addition, there might be market, technological, or site-specific factors that make
45 a project appropriate in a non-SEZ area. The BLM will consider ROW applications for utility-
46 scale solar energy development in variance areas on a case-by-case basis based on environmental

1 considerations; coordination with appropriate federal, state, and local agencies and tribes; and
2 public outreach. The responsibility for demonstrating to the BLM and other coordinating parties
3 that a proposal in a variance area will avoid, minimize, and/or mitigate, as necessary, sensitive
4 resources will rest with the applicant.
5
6

7 **3.7.4 Conflicts with Existing or Proposed ROWs**

8

9 **Summary:** These comments included requests for the BLM to acknowledge in the Solar
10 PEIS that existing ROWs within SEZs (e.g., railroad ROWs) would not be affected by the
11 identification of an area as an SEZ in the applicable land use plan. Comments noted that existing
12 ROWs within SEZs place additional restrictions on development within SEZs, which in some
13 cases may significantly restrict development within an SEZ. In instances in which an application
14 has been made for a ROW but action is still pending, the BLM should confirm that the
15 designation of an SEZ will not prohibit BLM granting additional ROWs for facilities
16 (e.g., transmission facilities) within an SEZ. Also, there were questions on whether applications
17 for new ROWs within SEZs would be processed.
18

19 **Response:** The priority and processing of ROWs within SEZs was addressed in
20 Section 2.2.2.2 of the Supplement to the Draft Solar PEIS, and the text is repeated in the same
21 sections of the Final PEIS. The text reads as follows: “ROWs for utility-scale solar energy
22 development in SEZs would be given priority over all other ROWs. The BLM may decide to
23 authorize ROWs for other uses that are found to be compatible with utility-scale solar energy
24 development such as shared access roads and transmission lines. The identification of an area as
25 an SEZ will not affect previously authorized ROWs, whether or not construction has been
26 initiated on those ROWs. The BLM will consider the processing of pending ROW applications
27 in identified SEZs on a case-by-case basis.”
28

29 Recognizing the railroads have unique concerns with respect to solar energy
30 developments near their existing ROWs, the BLM has included a requirement for coordination
31 with the railroad industry to determine potential for impacts on railroad ROWs and operations
32 under its variance process (described in Section 2.2.2.3.1 of this Final Solar PEIS).
33
34

35 **3.7.5 Long-Term Monitoring and Adaptive Management**

36

37 **Summary:** Comments on the Draft Solar PEIS indicated that the BLM should determine
38 whether the required design features under its proposed Solar Energy Program would be
39 effective in mitigating adverse impacts through a long-term monitoring program. In establishing
40 a long-term monitoring program, the BLM should build on monitoring programs that have been
41 developed by other federal agencies and nongovernmental organizations. The BLM should
42 define the outcomes that it will require, particularly for indicators of species impacts and water
43 use impacts. The requirements for monitoring and reporting to the public should be made clear.
44 The conservation and adaptive management measures to be taken if adverse impacts are
45 identified through monitoring should be specified. Commentors requested that funding

1 mechanisms for long-term monitoring be discussed and that the monitoring and adaptive
2 management requirements be included in the ROD for the Solar PEIS.
3

4 Although the Supplement to the Draft Solar PEIS provided additional details on the
5 implementation of long-term monitoring, additional requests were received, including that the
6 BLM include a firm commitment to monitoring and adaptive management for key resources in
7 the Final Solar PEIS, that monitoring protocols be standardized on the basis of an optimal set of
8 indicators, that an adaptive management review team be established, that all monitoring data be
9 publicly available, and that plans for public comment on adaptive management and monitoring
10 be included. Comments again pointed out that funding opportunities for responsive adaptive
11 management would need to be identified.
12

13 **Response:** The framework for a solar long-term monitoring and adaptive management
14 plan (LTMP) to be followed for the BLM’s Solar Energy Program is presented in Section A.2.4
15 of Appendix A of this Final Solar PEIS. This framework is based on the BLM’s Assessment,
16 Inventory, and Monitoring (AIM) strategy and includes discussion of development of conceptual
17 models that drive the selection of core and supplemental indicators for monitoring. The
18 framework discusses the intent of the BLM to build an interdisciplinary team to ensure
19 successful implementation of the LTMP and states that stakeholders including the general
20 public would be engaged throughout the process. The framework states that the objectives of the
21 LTMP must be SMART (Specific, Measureable, Achievable, Relevant, and Time sensitive) by
22 indicating the desired amount of change (specific), level of confidence for the measured change
23 (measurable), funding and capacity requirements (achievable), relationship to the management
24 question (relevant), and time frame during which the measurement occurs to effectively inform
25 management (time sensitive). The LTMP will include an adaptive management loop to determine
26 whether the results of monitoring require modification of requirements for specific projects or
27 adoption of new or revised SEZ-specific design features. The BLM is proposing to pilot-test the
28 AIM-based LTMP in a limited fashion initially with BLM staff; other federal, state and local
29 partners; and interested stakeholders. The BLM will make adjustments as necessary to the AIM-
30 based Solar LTMP based on the pilot test prior to implementing it across all six states covered by
31 the Solar Energy Program.
32
33

34 3.7.6 New Policy Recommendations 35

36 **Summary:** Several comments suggested new policy guidelines for development, for
37 example, that a portion of each SEZ be set aside for research and development to help define
38 BMPs for each of the technologies; that the BLM have consistent implementation of science-
39 based analysis to use in decision-making, including basing decisions on resource consumption
40 per annual megawatt-hour and compatibility with the existing grid; and that the BLM redirect
41 ROW applicants to RePower America lands (i.e., contaminated lands).
42

43 **Response:** Some of the policy recommendations are outside of the scope of the Solar
44 PEIS, but the BLM and DOE are working toward them through other programs. For example, the
45 DOE is supporting assessment of the feasibility of solar development on RePower America

1 lands. In addition, BLM and DOE programs are supporting various research and development
2 projects to help define best management, including long-term monitoring pilot projects.
3

4 The suggestion to provide facility descriptions and information in terms of megawatts
5 (instead of megawatt-hours) in the Solar PEIS was based on the most prevalent available
6 information for comparison with information in the literature; in this case information on
7 existing or under-construction solar facilities was often available only in terms of the nameplate
8 megawatt rating.
9

10 11 **3.7.7 BLM Land Use Planning** 12

13 **Summary:** Comments on the Draft Solar PEIS emphasized that the RMPs and LUPs be
14 updated to fully address renewable energy development on public lands; there was concern about
15 relying on out-of-date RMPs to guide solar development (particularly with respect to wildlife
16 impacts). Questions were raised as to whether the LUP amendments would allow for other types
17 of development (e.g., wind facilities) within SEZs.
18

19 In comments on the Supplement to the Draft Solar PEIS, The Wilderness Society
20 requested that LUP amendments include language from the recent IMs and policy elements. On a
21 related note, the society stated that the Solar PEIS ROD should incorporate a process for
22 updating LUPs regularly, for example when new exclusion areas are identified through long-
23 term monitoring and adaptive management. It was requested that IMs, intended to be interim in
24 nature, not be used to implement policy that should be done through LUP amendments. The
25 USFWS requested that the LUP amendments (1) require exclusions to protect mitigation lands;
26 (2) accept compensation habitat with conservation easements; and (3) require the designation of
27 exclusion areas in unused portions of ROW application sites.
28

29 **Response:** The land use plan amendments to be made to implement the solar program
30 will include the following decisions to establish the foundation for a comprehensive Solar
31 Energy Program: (1) land use plan amendments that identify exclusion areas for utility-scale
32 solar energy development in the six-state study area; (2) land use plan amendments that identify
33 priority areas for solar energy development that are best suited for utility-scale production of
34 solar energy, that is, SEZs; (3) land use plan amendments that identify variance areas for utility-
35 scale solar energy development in the six-state study area; and (4) land use plan amendments that
36 establish design features (i.e., mitigation requirements) for solar energy development on public
37 lands to ensure the most environmentally responsible development and delivery of solar energy
38 (some may be SEZ-specific, as necessary). Land use plans that are undergoing revision or
39 amendment concurrent with the Solar PEIS will be reviewed to identify and resolve
40 inconsistencies between the Solar PEIS and individual planning efforts.
41

42 In addition to the planning-level decisions outlined above, the BLM's Solar Energy
43 Program will include a number of policy components, such as the variance process to address
44 ROW applications for utility-scale solar energy development outside of SEZs, and incentives for
45 projects proposed in SEZs. These components will be reflected in the Record of Decision (ROD)
46 for the Solar PEIS; the BLM will issue subsequent IMs, as necessary, to formally establish such

1 policies. Where applicable, the BLM retains the ability to change policies associated with its
2 Solar Energy Program through existing policy-making tools rather than through a future land use
3 planning process.
4

5 As part of the BLM’s proposed monitoring and adaptive management plan (Solar
6 LTMP), the BLM will establish meaningful, measureable objectives and impact thresholds.
7 Monitoring information will be evaluated against established objectives and thresholds, and
8 specific management changes will be required if such objectives or thresholds are not met or are
9 exceeded. The BLM will use information derived from the Solar LTMP to adaptively manage
10 projects, the Solar Energy Program, Solar LTMP conceptual models and the Solar LTMP more
11 generally. For example, Solar LTMP outputs can aid BLM in efforts to review project-level
12 construction compliance activities and adjust future project compliance decisions. Information
13 may be used to amend BLM’s Solar Energy Program by adopting new or revised SEZ-specific
14 design features or SEZ boundaries, developing new or revised programmatic design features, or
15 establishing new or revised exclusions. Any changes to the BLM’s Solar Energy Program will be
16 subject to appropriate environmental analysis and land use planning and the related requirements
17 for public involvement.
18

19 Regarding the question of BLM approval of other uses within SEZ, the priority and
20 processing of ROWs within SEZs was addressed in Section 2.2.2.2 of the Supplement to the
21 Draft Solar PEIS, and the text is repeated in the same sections of this Final Solar PEIS. The text
22 reads as follows: “ROWs for utility-scale solar energy development in SEZs would be given
23 priority over all other ROWs. The BLM may decide to authorize ROWs for other uses that are
24 found to be compatible with utility-scale solar energy development such as shared access roads
25 and transmission lines. The identification of an area as an SEZ will not affect previously
26 authorized ROWs, whether or not construction has been initiated on those ROWs. The BLM will
27 consider the processing of pending ROW applications in identified SEZs on a case-by-case
28 basis.”
29
30

31 **3.7.8 Treatment of Climate Change in the Solar PEIS** 32

33 **Summary:** Comments stated that in the Solar PEIS the BLM should include a discussion
34 and analysis of the program’s impact on the climate change adaptation capability of wildlife, as
35 well as the impacts of rapid onset climate change on plant and wildlife communities. Some
36 comments stated that climate change trends and projections should be built into the Affected
37 Environment section of the Solar PEIS and that local climate change from darkening the areas
38 above and beneath panels should be considered.
39

40 Comments also stated that the Draft Solar PEIS provided no scientific evidence that
41 large-scale solar will reduce net greenhouse gas emissions once manufacturing of components,
42 construction, transmission, and the disruption of carbon-sequestering ecosystems are taken into
43 account, and that it did not take into account the cost and greenhouse gas (GHG) impacts from
44 backup generation that is needed to support intermittent solar energy production.
45

1 **Response:** The Solar PEIS does estimate GHG emissions that may be avoided if the solar
2 power generated in SEZs were to replace fossil fuel generation sources (see the Air Quality
3 assessments for the SEZs in Chapters 8 through 13). Climate change was addressed in several
4 sections of the Draft Solar PEIS (Section 4.11.3 on GHG emissions and climate change;
5 Section 5.11.2.4 on albedo effects [see below]; Section 5.11.4 on the impacts of GHG emissions;
6 Section 6.5.1.2.2 on trends in climate change and corresponding effects on ecosystems; and
7 Section 6.5.2.10.2 on the cumulative impacts on global climate change from solar development).
8 Changes in regional precipitation and temperature attributed to climate change and leading to
9 reduction in total water supplies is acknowledged in Section 6.5.2.8 of the Draft Solar PEIS. It is
10 beyond the scope of the Solar PEIS to conduct the life-cycle type assessments that would
11 quantify total GHG emissions associated with all components of solar energy productions;
12 however, the DOE is supporting research in this area through other programs.
13

14 Large-scale absorption of sunlight on solar panels or the reflection of sunlight off of
15 troughs or heliostats could decrease or increase the fraction of solar radiation reflected back into
16 space (this fraction is termed albedo). The potential impact of these albedo effects on climate
17 change was discussed in Section 5.11.2.4 of the Draft Solar PEIS. In the Solar PEIS, CO₂
18 emissions from heavy equipment and backup generators are considered to be minor because this
19 equipment is used infrequently and/or for short periods during construction. Finally, hybrid solar
20 projects are acknowledged in the Solar PEIS. The PEIS impact evaluations would be applicable
21 for the solar portions of those facilities, while the fossil-fuel portions of the facilities would
22 require separate environmental analyses.
23

24 Prior to the authorization of solar development, there would be additional analysis of
25 climate change and additional or changed factors would be considered.
26
27

28 **3.7.9 Rental Policy and Lease Rates**

29

30 **Summary:** Comments ranged from recommendations for BLM to increase and to
31 decrease its lease rates. Some commentors urged that the BLM modify rental policies to be less
32 restrictive for solar developers, although comments were also received that requested industry
33 pay development costs relating to the permitting process. In addition, there were comments that
34 suggested rental rates should be higher for land with greater ecological or cultural concerns. In
35 addition, there was a suggestion for the BLM to modify rental policies to be less expensive but
36 offset the reduction in revenue with a megawatt capacity fee.
37

38 **Response:** The details of BLM's current rental policy, including rent and megawatt
39 capacity fees, can be found in IM No. 2010-141, "Solar Energy Interim Rental Policy"
40 (see Section A.1.2 of this Final Solar PEIS for additional detail). Through its rulemaking process,
41 the BLM is considering necessary changes or adjustments to its rental policies. The draft rule is
42 expected by the end of 2012 and will consider adjustments to rental policies to be incorporated
43 into the BLM's regulations.
44
45

1 **3.7.10 ROWs and Leases**
2

3 **Summary:** Comments called for the BLM to demonstrate how a ROW grant differs from
4 a lease and suggested that the BLM lease solar energy development rights rather than using the
5 ROW system. Comments were also received requesting the BLM to identify and evaluate the
6 regulatory hurdles necessary to change from the existing solar ROW authorization process to a
7 competitive leasing approach.
8

9 **Response:** Under current regulations, there is no difference between the terms *lease* and
10 *ROW*. FLPMA is BLM’s Organic Act and is the authority for the BLM to authorize ROWs on
11 public lands. The term *right-of-way* is defined in FLPMA as an easement, lease, permit, or
12 license to occupy, use, or traverse public lands granted for the purposes listed in Title V of
13 FLPMA (thus ROWs include leases). Solar energy development projects are approved under
14 Title V of FLPMA, and systems for generation, transmission, and distribution of electric energy
15 are also granted ROWs under Title V of FLPMA.
16

17 The BLM is expecting to offer lands in SEZs through a competitive process; a regulatory
18 rulemaking effort is under way to define this competitive process, which includes a public
19 review and comment period (see Section 2.2.2.2.1 of this Final Solar PEIS). The Advanced
20 Notice of Proposed Rulemaking was published on December 29, 2011, and the BLM intends to
21 have a Proposed Rule available for comment by the end of 2012. This rulemaking process may
22 further refine terms such as ROW and lease.
23
24

25 **3.7.11 Competitive Leasing**
26

27 **Summary:** Comments included requests for a competitive leasing process to ensure that
28 the public’s resources are valued and administered appropriately. Some commentors were
29 concerned that the competitive bid process would result in an increased cost of electricity to
30 consumers and suggested that the BLM should instead set a fixed price for land that would be
31 consistent for all developers. Several conservation groups suggested that the BLM establish
32 pilot approaches to competitive leasing and select the system that best protects taxpayers
33 without unnecessarily burdening project proponents. The Society for American Archeology
34 recommended that if a competitive process is developed, then plans for the identification,
35 evaluation, and treatment of historic properties be required in the bid packages and be part of the
36 selection criteria. At least one comment argued that competitive leasing, when combined with
37 high rental rates, bonds, and other costs, might make the cost to the developer prohibitively high.
38 The solar industry comments expressed opposition to competitive leasing, saying that the process
39 makes development on private land more attractive and that competitive leasing would make the
40 cost to the developer prohibitively high. Comments stated that the BLM should clarify how a
41 competitive leasing process would work and should not adopt competitive leasing without
42 providing for public review and comment.
43

44 **Response:** The BLM has initiated a rulemaking to establish a competitive process for
45 offering public lands for solar development within designated leasing areas. The Advanced
46 Notice of Proposed Rulemaking was published on December 29, 2011, and the BLM intends to

1 have a Proposed Rule available for comment by the end of 2012. The proposed rule could
2 include provisions such as a call for nominations, review of nominations, notice of competitive
3 offer, issuance of competitive ROW lease authorizations, and administration of competitive
4 ROW leases (see Section 2.2.2.2.1 of this Final Solar PEIS for additional details).

7 **3.7.12 Solar PEIS Consistency with BLM Policy Instruction Memoranda**

9 **Summary:** Comments on the Draft Solar PEIS requested that the BLM clarify the
10 relationship between policy IMs and the policies set forth in the Solar PEIS, including how the
11 Solar PEIS would modify the memoranda. In addition, commentors asked for the content of IMs
12 to be included in Appendix A and in the land use plan amendments issued as a result of the Draft
13 Solar PEIS. Comments on the Supplement to the Draft requested that the PEIS be consistent with
14 IMs and that variance applications be processed in accordance with IM No. 2011-061, “Solar and
15 Wind Energy Applications—Pre-application and Screening.”

17 **Response:** While the BLM’s existing policy IMs formed the foundation of the policies
18 proposed in the Solar PEIS, the concepts contained in such IMs have been modified in the Final
19 Solar PEIS to reflect experience gained through processing of solar applications as well as
20 consideration of comments received on the Draft Solar PEIS and the Supplement to the Draft
21 Solar PEIS. The ROD for the Solar PEIS will formally establish the policies for the Solar Energy
22 Program and in some cases may replace policies identified in existing policy IMs. The
23 rulemaking process under way to define a competitive process for offering public lands for solar
24 development within designated leasing areas may further modify BLM’s policies related to solar
25 energy ROWs.

28 **3.7.13 Bonding and Reclamation**

30 **Summary:** Many comments argued for reclamation bonds to be established so that in the
31 event that a solar energy facility closes, the land would be restored to its original condition. In
32 addition, commentors wanted to know how BLM would ensure that applicants are financially
33 capable of development, and what would occur if an applicant sold its interest in a specific
34 project after extensive authorization work had been accomplished, and the new owner changed
35 the project technology or configuration.

37 **Response:** Bonding reviews are based on the Reclamation Cost Estimate provided as part
38 of the Decommissioning and Site Reclamation Plan, which is part of the Plan of Development
39 (POD). This Reclamation Cost Estimate is public information and can be reviewed by any
40 member of the public.

42 Policy guidance has been provided on bonding requirements (IM 2011-003), and the
43 BLM’s current policy regarding bonding is outlined in Section 2.2.1.1 of this Final Solar PEIS.
44 The bonding requirements consider site- and project-specific needs, including measures
45 necessary to address bonding for maintaining translocated species such as desert tortoise.
46 Additional bonding requirements or adjustments to current bonding requirements will be

1 considered through the rulemaking process that is currently under way to define a competitive
2 process for offering public lands for solar development within designated leasing areas.
3
4

5 **3.7.14 SEZ Authorizations and Incentives** 6

7 **Summary:** Comments on the Draft Solar PEIS and Supplement to the Draft Solar PEIS
8 included that the authorization process description should discuss the terms of ROW grants
9 (e.g., length) and methods for preserving the ROW beyond the initial time granted. Comments
10 stated the need for additional incentives for development in SEZs, such as priority processing
11 (including increased agency staffing and specific timelines), surcharges for applications outside
12 of SEZs, and cost sharing between applicants and the BLM. The State of Utah suggested many
13 financial incentives for development in SEZs (phase-in period for rental payments, fixed
14 megawatt capacity fee, limited base acreage rental payments). The USFWS encouraged offering
15 incentives for applications within SEZs. Nye County in Nevada requested clarification on when
16 cultural surveys would need to be done and if they would be required before a POD would be
17 approved.
18

19 **Response:** In response to concerns expressed in comments on the Draft Solar PEIS, the
20 Supplement included a description of how the BLM would process applications in SEZs and in
21 variance areas, including a description of incentives for developing within SEZs. The Final Solar
22 PEIS modified the description of the SEZ authorization process based on comments received.
23 The requirements of the NHPA will be met for any development within SEZs in accordance with
24 the PA; PODs would be required to address the need for additional archeological and/or
25 ethnographic data, but the surveys would not need to be completed prior to approval of the POD.
26 Terms of the SEZ ROWs and financial incentives are being given consideration in BLM's
27 ongoing rulemaking efforts as well (see Section 2.2.2.2.1 of this Final Solar PEIS).
28
29

30 **3.7.15 Solar ROW Authorization Policies** 31

32 **Summary:** Comments on the Draft Solar PEIS included many requests for clarification
33 of the ROW policies that would be applicable for ROW applications both within SEZs and
34 outside of SEZs. A set of comments reviewed many of the design features presented in
35 Section A.2.2 of Appendix A of the Draft Solar PEIS with respect to ROW policies, and some
36 comments compared them with the requirements of existing BLM IMs. There were requests that
37 ROW terms should be flexible because the life of many solar facilities would exceed the
38 proposed 30-year term. Commentors stated that applications not worthy of continuation should
39 be identified and dismissed through pre-application meetings with the BLM (prior to the start of
40 NEPA analysis). A solar industry commentor requested that for collocated ROWs, any adverse
41 impacts on existing facilities within the ROW as a consequence of collocation should be
42 mitigated by the party seeking collocation (this would be applicable for cases of shared
43 infrastructure between solar projects, most likely to happen within SEZs). The comments also
44 stated that the PEIS should consider issuance of testing and monitoring ROWs for solar, as short
45 term (3 to 4 year) low impact land rights.
46

1 Comments on the Supplement to the Draft Solar PEIS requested clarification of BLM's
2 treatment of the transfer of ROW grants. A comment stated that the BLM should review ROW
3 grants if ownership of the grant changes to ensure the ability of a project to be successfully
4 completed is not adversely affected.

5
6 **Response:** The Final Solar PEIS presents in detail the policies that would be applicable
7 for all solar ROWs, including ROWs in SEZs, and in variance areas (see Sections 2.2.1, 2.2.2.2,
8 and 2.2.2.3, respectively, in this Final Solar PEIS). All solar energy ROW authorizations are
9 issued with terms that provide for the right of renewal. Renewal provides an opportunity to
10 review the terms and conditions of the authorization and provides for the protection of public
11 land resources. Renewal is subject to the ROW holder's compliance with the terms and
12 conditions of the authorization.

13
14 The ROW policies also address transfer of ROW grants. In order to approve ROW
15 authorizations, the BLM is required to ensure the assignee has assumed the full responsibilities
16 for compliance with the terms and conditions of the ROW authorization, which may include a
17 review of the economic and technical viability of the assignee.

18
19 With respect to collocated ROWs, the BLM has now added the following text regarding
20 incentives for development within SEZs: "In preparing parcels in SEZs for competitive offer, the
21 BLM will seek to make the most efficient use of existing corridors, consider opportunities for
22 co-location, and avoid geographically stranding future projects from key transmission
23 interconnection points." (in Section 2.2.2.2.3 of the Final Solar PEIS).

24
25 Finally, the BLM at this time sees no need to establish a site-testing ROW for solar
26 projects similar to the 3-year site testing authorizations for wind energy projects areas. However,
27 the BLM can issue short-term ROW authorizations for short-term activities. Casual use activities
28 on public lands do not require an authorization.

29 30 31 **3.7.16 Solar PEIS Consistency with Local Plans**

32
33 **Summary:** Comments on the Draft Solar PEIS included local government units
34 requesting conformity of the Solar PEIS ROW authorization policies with local planning efforts.
35 One commentor requested that BLM exclude lands from development that had been identified by
36 the local government as regional linkages in the Habitat Conservation Plan. Some local
37 governments were concerned that the Draft Solar PEIS and the Supplement to the Draft Solar
38 PEIS had identified exclusion areas that locally were considered to be good locations for solar
39 development. Similar concerns about coordination with local planning policies were received on
40 the Supplement to the Draft Solar PEIS. Commentors were concerned that a requirement does
41 not exist for BLM to evaluate projects against local plans, development codes, or ordinances.
42 There was also a question about which entity would be responsible for the NEPA analysis for
43 SEZs identified subsequent to the Solar PEIS process and analyzed through state or local land
44 use planning efforts.

1 **Response:** Requirements for coordination with local agencies are now included under the
2 authorization policies for applications both within SEZs and in variance areas
3 (see Sections 2.2.1, 2.2.2.2, and 2.2.2.3 of the Final Solar PEIS). Furthermore, the protocol for
4 identifying new SEZs includes consideration of relevant local land use plan decisions
5 (see Section A.2.6.3.2 of Appendix A).
6

7 The BLM will endeavor to assess the need for new or expanded SEZs a minimum of
8 every 5 years in each of the six states covered by the Solar PEIS. The process for identifying new
9 or expanded SEZs will be open and transparent, with opportunities for substantial involvement of
10 multiple stakeholders including local governments and entities. The BLM will identify new or
11 expanded SEZs at the state or field office level as an individual land use planning effort or as
12 part of an ongoing land use plan revision.
13

14 **3.7.17 Withdrawal of SEZ Lands**

15 **Summary:** Comments received on this topic were all on the Draft PEIS. One comment
16 noted that the long-term withdrawal of lands from potential conflicting uses (aka segregation of
17 the lands) to support solar energy development could result in speculative solar development
18 applications prior to the segregation on the lands proposed for segregation. Another commentor
19 noted that FLPMA requires that withdrawals of more than 5,000 acres (20 km²) from mineral
20 entry require a mineral report and review by Congress; this requirement would apply to most of
21 the SEZs. Finally, there was a request to identify specific parcels within SEZs as being suitable
22 for disposal and to include an analysis of the impacts of disposal.
23

24 **Response:** As is clarified in the Final Solar PEIS (Section 2.2.2.4), only the SEZs are
25 being proposed for long-term withdrawal, which is consistent with the BLM's intent to prioritize
26 solar development within the SEZs. There are currently no plans to dispose of lands within the
27 SEZs; the Final Solar PEIS clarifies that lands within the SEZs are expected to be offered
28 competitively for solar development. The procedures for evaluating pending applications both
29 within and outside of the SEZs ensure that speculative applications will be identified and closed
30 within a reasonable timeframe. The required withdrawal analysis for the proposed SEZs has been
31 included in the Final Solar PEIS (see SEZ sections in Chapters 8 through 13 of the Final Solar
32 PEIS), including mineral potential assessment reports that meet the standards set forth in 43 CFR
33 Part 2300 and *BLM Manual 3060*. The proposed withdrawal will be for a period of 20 years. The
34 Secretary of the Interior's decision regarding the withdrawal will be made based on the analyses
35 provided in the Solar PEIS.
36
37
38

39 **3.7.18 Solar PEIS Relation to the California Desert Protection Act and Plan**

40 **Summary:** Several comments on both the Draft Solar PEIS and the Supplement to the
41 Draft Solar PEIS stated that the BLM and DOE should revise the Solar PEIS to exclude utility-
42 scale solar energy development on Class L lands within the CDCA. Specifically, the BLM was
43 requested to remove the Vinagre Wash Special Management Area from the variance area and to
44
45

1 consider the Quechan Tribe’s concerns regarding development on Class L lands. Comments
2 were also received stating that the Solar PEIS should address the legal status of the CDCA.
3

4 **Response:** The BLM has eliminated some of the lands of concern within the CDCA
5 planning area (e.g., Vinagre Wash, some lands near the Quechan Tribal lands; see Table 2.2-2 of
6 this Final Solar PEIS). The allowance for future solar development within the CDCA planning
7 area will be addressed through the variance process in coordination with the California REAT
8 agencies (see Section 2.2.2.2.6 in Chapter 2 of this Final Solar PEIS). Appropriate changes to the
9 CDCA management plan will be made in conjunction with the DRECP planning efforts,
10 considering decisions made in the Solar PEIS.
11
12

13 **3.7.19 Small-Scale Solar Projects on Public Lands**

14

15 **Summary:** Comments on both the Draft Solar PEIS and the Supplement to the Draft
16 Solar PEIS stated that BLM’s solar program should favor (or, at least, evaluate the benefits of)
17 smaller scale solar systems on public lands to mitigate environmental impacts and facilitate local
18 economic development.
19

20 **Response:** The PEIS does not express a preference for development projects greater than
21 20 MW over development of smaller projects. In Chapter 1, the scope of the Solar PEIS is
22 defined as applicable to projects larger than 20 MW. The PEIS addresses only utility-scale solar
23 projects, because the footprints of these large projects and environmental impacts are potentially
24 much more significant. Decisions on projects that are less than 20 MW would continue to be
25 made in accordance with existing land use plan requirements, current applicable policy, and
26 individual site-specific NEPA analysis.
27
28

29 **3.7.20 Tiering of Future NEPA Analysis to the Solar PEIS**

30

31 **Summary:** Comments on the Draft Solar PEIS and on the Supplement to the Draft Solar
32 PEIS expressed concern that the process of tiering future environmental assessments from the
33 Solar PEIS was not described in enough detail. Some commentors expressed support for tiering
34 future solar energy projects to the Solar PEIS such that those projects could be accomplished
35 through environmental assessments, rather than EISs. Other commentors expressed concern that
36 such tiering would not provide adequate assessment of potential environmental impacts.
37

38 **Response:** The BLM has conducted a thorough environmental review of the proposed
39 SEZs so that future reviews of projects within SEZs can tier to the existing NEPA analysis,
40 thereby limiting the required scope and effort of additional project-specific NEPA analyses.
41 The extent of tiering will vary by project and location, as will the necessary level of NEPA
42 documentation. Tiered analyses for projects in SEZs are expected to be narrowly focused on
43 those issues not already adequately analyzed in the Solar PEIS (see Section 2.2.2.2.2). Future
44 projects in variance areas would also tier to the Solar PEIS through application of the
45 authorization policies and design features incorporated into the ROD for the PEIS.
46

3.7.21 Visual Resource Management Strategies

Summary: Comments on the strategies for managing impacts on visual resources presented in the Draft Solar PEIS and the Supplement to the Draft Solar PEIS both favored the strategies and opposed them. Opposition to the design features that were part of the strategies stated that they were too prescriptive (e.g., in specifying height limits for technologies used) and would not allow developers flexibility in addressing visual resource impacts. Some environmental groups also stated opposition to the strategies presented in the Draft and the Supplement, stating that the BLM should not put in place proscriptive height and technology restrictions and that the visual resources impacts should be addressed on a project-by-project basis.

Response: In order to accommodate the flexibility described in the BLM's program objective and in light of anticipated changes in technologies and environmental conditions over time, the BLM has removed some of the prescriptive SEZ-specific design features presented in the Draft Solar PEIS and the Supplement to the Draft Solar PEIS for visual resource impacts (i.e., height and technology restrictions). Instead of including the prescriptive design features, the BLM will give full consideration to any outstanding conflicts in SEZs as part of the competitive process being developed through rulemaking (see Section 2.2.2.2.1 of this Final Solar PEIS). For applications outside of SEZs, potential impacts on viewsheds, including comments from stakeholders regarding those impacts, will be given consideration through the variance process.

3.7.22 Policy Regarding Desert Tortoise Connectivity Areas

Summary: Comments received on the Draft Solar PEIS requested that tortoise connectivity areas be identified as exclusion areas. The USFWS provided data requesting that extensive specific locations identified as connectivity areas be excluded. The Supplement to the Draft Solar PEIS requested comments on whether to consider all variance applications within desert tortoise connectivity areas on a case-by-case basis in coordination with the USFWS (option 1) or to require that such applications demonstrate that tortoise densities within the project area would be within specific limits, that the number of translocations required would be less than or equal to 35, and other requirements (option 2). Comments received on the Supplement options from the solar industry were in favor of option 1, stating that option 2 had several unsupported, rigid requirements with no foundation in scientific evidence. However, other commentors, including the USFWS, continued to recommend that the Mojave desert tortoise habitat linkages identified in the 2011 Revised Recovery Plan for the species be identified as exclusion areas.

Response: The focus of the proposed variance process, including factors related to desert tortoise, is on collecting the right data and evaluating it with the right parties to assess the appropriateness of a given proposal, rather than on a prescriptive set of measures that would be established at the programmatic level. The BLM believes that this approach allows flexibility to adapt as data and science improves, recognizes the variability and trade-offs associated with individual applications, and allows for satisfactory protection of resources of concern.

1 The BLM and the USFWS have continued consultation regarding desert tortoise
2 connectivity areas throughout preparation of the Final Solar PEIS. Through this consultation
3 process, an additional 515,000 acres (2,084 km²) of lands that coincide with priority desert
4 tortoise connectivity habitat have been excluded from the variance lands, and the additional
5 data collection and evaluation measures for desert tortoise and priority connectivity habitat
6 that will be required for applications in the remaining variance lands have been outlined
7 (see Section 2.2.2.3.1 on the Variance Process in the Final Solar PEIS). Developers that propose
8 utility-scale solar energy projects in variance areas that overlap priority desert tortoise
9 connectivity habitat identified on USFWS maps will be required to meet with the BLM and
10 USFWS early in the process as part of the previously mentioned preliminary meetings to receive
11 instructions on the appropriate desert tortoise survey protocols and the criteria the BLM and
12 USFWS will use to evaluate results of those surveys. The USFWS will also make additional
13 information regarding the evaluation of impacts on desert tortoise and priority desert tortoise
14 connectivity habitat available on a public Web page.
15
16

17 **3.7.23 Work Identified in SEZ Action Plans**

18

19 **Summary:** Comments were received regarding the SEZ action plans presented in the
20 Supplement to the Draft Solar PEIS, most in favor of the concept of ongoing characterization of
21 the SEZs. A prevalent concern was the lack of clarity on whether BLM or developers would fund
22 the data collection and on when the data would be obtained.
23

24 **Response:** The SEZ action plans in the Supplement to the Draft Solar PEIS described
25 additional data that could be collected for individual SEZs and proposed data sources and
26 methods for the collection of those data. Additional data collection for SEZs would likely be
27 conducted by the BLM; however, the agency will consider opportunities for partnerships to
28 collect such information. Work is under way by the BLM to collect some of the additional data
29 as specified under these action plans (e.g., additional data collection to support evaluation of
30 cultural, visual, and water resources has begun). The BLM will prioritize the collection of
31 additional data and analysis in those SEZs that are most likely to be developed in the near future.
32 The BLM intends to make additional data for the SEZs that are obtained subsequent to issuance
33 of the Solar PEIS available to interested stakeholders through the Solar PEIS Web site
34 (solareis.anl.gov). Notices of new data availability will be sent to Web site subscribers.
35

36 Note that additional data and analysis will help facilitate development in SEZs, but the
37 BLM is not required to identify an area as an SEZ as part of the Solar Energy Program. Some of
38 the data gaps identified in the SEZ action plans will likely need to be addressed by developers.
39
40

41 **3.8 NEW SEZS AND RELATED PROJECTS**

42

43 **Summary:** Comments on the Draft Solar PEIS asked for clarification of the process to
44 change proposed SEZs, remove proposed SEZs, or propose additional new SEZs, and requested
45 that the impacts of those changes be evaluated in the PEIS and that exclusion criteria be
46 identified. Comments also requested that landscape assessments be used to identify new SEZs

1 and that degraded and private lands should be prioritized when new SEZs are identified.
2 Comments on the Supplement to the Draft requested clarification of the role of local
3 governments as well as the role of BLM land use plans and land use plan revisions in the SEZ
4 identification process. Commentors also recommended that the identification of additional SEZs
5 should be based on market conditions and the need for power and should rely on results from the
6 California DRECP, the BLM West Chocolate Mountain EIS, and BLM's RDEP in Arizona.

7
8 **Response:** In response to comments on the Draft Solar PEIS, a proposed Identification
9 Protocol for New Solar Energy Zones was presented in the Supplement to the Draft Solar PEIS
10 (Appendix D). The protocol that was further modified in response to comments and is presented
11 in this Final Solar PEIS (Section A.2.6 of Appendix A). The BLM recognizes the need for a
12 process to identify new and/or expanded SEZs as a critical component of the BLM's overall
13 approach to solar energy development. The protocol describes a process to assess the need for
14 additional SEZs at least every 5 years in each of the six states (Section A.2.6.1 of Appendix A).
15 The protocol also addresses the use of landscape-scale information in the identification of new
16 SEZs (Section A.2.6.3.4 of Appendix A). As described in the protocol, the BLM will consider
17 petitions for new zones or scoping comments suggesting new SEZs as part of regular planning
18 efforts. The Final Solar PEIS includes more defined roles for state and local government
19 involvement and consideration of local plans and policies. The protocol emphasizes the
20 consideration of degraded, disturbed, and/or previously disturbed lands as part of all future
21 processes to identify new or expanded SEZs. Although it is the BLM's goal that an assessment
22 of the need for new or expanded SEZs will be take place a minimum of every 5 years,
23 stakeholders can petition to consider new zones at any time.

24 25 26 **3.8.1 Recommendations for Specific New SEZs and SEZ Expansions**

27
28 **Summary:** Many commentors recommended that BLM consider areas for new SEZs.
29 Comments included the following recommendations: (1) use Utah Renewable Energy Zone
30 Phase I and II reports that identify solar energy development zones in Utah; (2) consider areas
31 recommended by the CEC and CDFG, including lands adjacent to proposed SEZs; (3) consider
32 lands identified by Pima County in Arizona for the Solar America Communities grant;
33 (4) include an SEZ in the western Mojave Desert and western Riverside County in California;
34 (5) propose solar development along the Central Arizona Canal; and (6) add additional SEZs
35 near the cities of Pueblo and Colorado Springs in Colorado. A few commentors requested that
36 the BLM consider specific proposed project locations as potential SEZs or variance areas. Most
37 of the comments received on the Draft Solar PEIS and Supplement to the Draft Solar PEIS
38 argued that the new zones they recommended were suitable for development because of
39 proximity to transmission infrastructure, disturbed land, and population centers. Some
40 commentors suggested that the SEZ Identification Protocol should include the REDP in Arizona,
41 the Chocolate Mountains EIS, and the DRECP in Arizona, without regard to the "need"
42 requirement outlined in the Supplement to the Draft Solar PEIS. Comments also recommended
43 that SEZs be identified in the West Mojave and Imperial Valley in California.

44
45 **Response:** While the BLM decided not to identify additional SEZs as part of the Solar
46 PEIS, the BLM considers the future identification of additional SEZs an essential element of its

1 overall approach to solar energy development on public lands. The BLM has identified a need
2 for additional SEZs in some states, particularly in Arizona and California. The BLM has initiated
3 efforts to identify new SEZs in these states. Such efforts are taking place outside of the Solar
4 PEIS process but consistent with the principles outlined in the SEZ identification protocol
5 presented in the Final Solar PEIS (see Section A.2.6 of Appendix A). The BLM believes that the
6 future identification of new SEZs will most appropriately be managed at the BLM state and/or
7 field office levels where there is a better understanding of need and potential resource conflicts.
8 As described in the protocol, the BLM will consider petitions for new zones or scoping
9 comments suggesting new SEZs as part of regular planning efforts. Although it is the BLM's
10 goal that an assessment of the need for new or expanded SEZs will take place a minimum of
11 every 5 years, stakeholders can petition to consider new zones at any time.

12
13 The Final Solar PEIS includes more defined roles for state and local government
14 involvement and consideration of local plans and policies. Current ongoing efforts that may
15 result in the identification of new SEZs and that are highlighted in the Solar PEIS include the
16 Arizona RDEP, the California DRECP, and the California West Chocolate Mountains
17 Renewable Energy Evaluation Area (REEA) planning effort. In addition, the BLM will
18 encourage local land use planning efforts to consider the need for, and identify as appropriate,
19 new SEZs as part of land use plan revisions.

20 21 22 **3.8.2 The California DRECP**

23
24 **Summary:** Many commentors recommend that the BLM use the results of the DRECP to
25 identify additional SEZs or to adjust proposed SEZs. Other commentors indicated that there
26 might be a potential conflict between the conservation planning efforts of the DRECP and the
27 Solar PEIS preferred alternative, and suggested that BLM approve only those projects in the
28 California desert that are consistent with the developing conservation strategy within the DRECP
29 planning area. Comments urged the BLM to publish a Final PEIS that allows the flexibility of
30 incorporating the DRECP planning effort into California BLM land use plans as an amendment.
31 Commentors recommended that since the DRECP is creating a process in California in which
32 new SEZs will be identified, there is no need for a variance process and it should be dropped
33 from the PEIS. Commentors suggested that the BLM should defer approval of the Solar Energy
34 Program for those areas that will also be governed by the DRECP until after the DRECP process
35 identifies the off-limit areas. At that time, the BLM will be more prepared to designate areas that
36 are suitable for solar development and that will protect cultural resources. Finally, there was
37 opposition to the DRECP, citing too much development in the area and Council on
38 Environmental Quality (CEQ) violations.

39
40 **Response:** The California BLM intends to use the DRECP as the foundation for possible
41 amendments to the CDCA plan and three additional RMPs. The DRECP is also being designed
42 as a Habitat Conservation Plan. Through potential land use plan amendments, the DRECP may
43 be used to identify priority areas for renewable energy development and associated reserve areas
44 within the DRECP planning area. Any applications filed in SEZs and variance lands within the
45 DRECP planning area will be evaluated by the REAT agencies to maintain consistency between
46 the PEIS and the DRECP's goals and objectives.

1 Because of its refined and regional focus, the DRECP planning effort will likely result in
2 further adjustment to the decisions for utility-scale solar development made in the Solar PEIS,
3 such as modified Development Focus Areas or SEZs, new Development Focus Areas or SEZs,
4 and/or additional exclusions that support the reserve design. The DRECP would tier to the NEPA
5 analysis in the Solar PEIS, to the extent practicable, to take advantage of the work already
6 completed for the CDCA planning area.
7
8

9 **3.8.3 The Arizona RDEP**

10
11 **Summary:** Many commentors suggested that the approach being analyzed in Arizona
12 BLM’s RDEP (i.e. solar development on degraded lands and across multiple jurisdictions)
13 should be applied for areas outside the SEZs in all six states. Other commentors recommended
14 that the BLM consider soliciting the public for identification of disturbed lands to identify new
15 SEZs and variance areas, using an approach similar to that employed for the Arizona RDEP. At
16 least one commentor preferred the SEZ only alternative in combination with the RDEP. Another
17 recommendation suggested that the BLM identify a more robust set of exclusion criteria, such
18 as those being applied in the RDEP to identify new SEZs. Finally, the results of the RDEP in
19 Arizona, the Chocolate Mountains EIS, and the DRECP in California to identify lands that
20 would be suitable for solar development should be incorporated as SEZs.
21

22 **Response:** For utility scale-solar development, the RDEP will serve as a step-down
23 analysis to the Solar PEIS. The RDEP will consider the identification of an additional SEZ,
24 consider increasing the Arizona acreage identified for renewable energy, and may help to
25 streamline the variance process for some of the variance areas potentially identified through the
26 Solar PEIS ROD. It is anticipated that applications proposed in renewable energy development
27 areas identified in the RDEP may comply with some elements of the proposed variance process
28 and therefore could qualify for priority processing. This will serve as an additional incentive for
29 developers.
30
31

32 **3.8.4 West Chocolate Mountains SEZ Possibility**

33
34 **Summary:** Commentors requested that the BLM consider adding an SEZ and prioritize
35 development in the Chocolate Mountains area, options that have not been evaluated in the PEIS.
36 Commentors recommended that the results of the Chocolate Mountains EIS that identifies lands
37 suitable for solar development should be incorporated as SEZs in the Solar PEIS.
38

39 **Response:** The BLM is evaluating the potential environmental impacts associated with
40 renewable energy testing and development on public lands within the West Chocolate Mountains
41 REEA, including solar, wind, and geothermal. The planning effort is expected to result in
42 amendments to the CDCA Plan of 1980 to identify sites within the West Chocolate Mountains
43 REEA as suitable and not suitable for solar and wind energy development and for geothermal
44 leasing and development. It is anticipated that utility-scale solar energy applications proposed in
45 suitable areas for solar energy development may comply with some elements of the proposed
46 variance process and therefore could qualify for priority processing. The West Chocolate

1 Mountains REEA is also considering the identification and evaluation of an SEZ as part of the
2 planning process.
3
4

5 **3.8.5 West Mojave SEZ Possibility**

6

7 **Summary:** Commentors requested that the BLM consider adding an SEZ and prioritize
8 development in the West Mojave area. Comments claimed that the conservation community,
9 solar industry, and local elected officials have expressed interest in a BLM analysis of
10 appropriate lands in the West Mojave, but the area has not yet been evaluated in the Solar PEIS.
11

12 **Response:** The SEZ Identification Protocol recognizes the need for a process to identify
13 new and/or expanded SEZs on an as-needed basis as part of the BLM’s overall approach to solar
14 energy development. The California BLM intends to use the DRECP as the foundation for
15 possible amendments to the CDCA plan and three additional RMPs. The DRECP is also being
16 designed as a Habitat Conservation Plan in accordance with the ESA and a Natural Communities
17 Conservation Plan in accordance with the California Natural Communities Conservation
18 Planning Act. Through potential land use plan amendments, the DRECP may be used to identify
19 priority areas for renewable energy development (potentially through the identification of
20 Development Focus Areas, similar to SEZs but open to renewable development beyond solar)
21 and associated reserve areas within the DRECP planning area. The West Mojave area is part of
22 the DRECP planning area.
23
24

25 **3.9 PURPOSE AND NEED FOR THE SOLAR PEIS**

26

27 **Summary:** About 40 comments were received regarding the BLM’s purpose and need
28 statement for the Solar PEIS, which is based on The Energy Policy Act of 2005 (Public
29 Law 109-58), which seeks approval of 10,000 MW of renewable energy generation on Public
30 Lands by 2015; E.O. 13212, “Actions to Expedite Energy Related Projects, which directs
31 executive departments and agencies to “take appropriate actions, to the extent consistent
32 with applicable law, to expedite projects that will increase the production, transmission, or
33 conservation of energy”; and several other E.O.s or Secretarial Orders (see Section 1.3.1 of this
34 Final Solar PEIS). Most of the comments were from environmental groups and expressed the
35 opinion that the BLM should not interpret Public Law 109-58 as a mandate to permit utility-scale
36 solar facilities on public lands. Commentors stated that the narrowly drawn purpose and need
37 statement precluded the discussion of alternatives for distributed generation and use of privately
38 owned and degraded lands. Conversely, an industry representative stated that the Solar PEIS
39 failed to meet the purpose of and need for expediting solar energy projects, because the proposed
40 design features presented in the Draft Solar PEIS would prevent development within SEZs.
41

42 **Response:** A purpose and need statement shall briefly specify the underlying purpose
43 and need to which the agency is responding in proposing the alternatives, including the
44 proposed action (40 CFR 1502.13). It is clear that the Congress’s intent in Public Law 109-58
45 was to direct the use of some portion of the public lands for renewable energy development in an
46 environmentally responsible manner (whether a mandate or not, it is direction that the BLM must

1 follow). The BLM has identified utility-scale solar energy development on public lands as a
2 potentially important component in meeting the nation's energy goals and objectives and
3 applicable Congressional direction.
4

5 The BLM has identified a need to respond in a more efficient and effective manner to the
6 high interest in siting utility-scale solar energy development on public lands and to ensure
7 consistent application of measures to avoid, minimize, and mitigate the adverse impacts of such
8 development. The BLM is therefore considering replacing certain elements of its existing solar
9 energy policies with a comprehensive Solar Energy Program that would allow the permitting of
10 future solar energy development projects to proceed in a more efficient, standardized, and
11 environmentally responsible manner. On the basis of the states' legislated RPSs, the BLM has
12 scoped the Solar PEIS RFDS to consideration of 24,000 MW of generation on public lands in the
13 six-state study area, or up to about 214,000 acres (866 km²). While the BLM is allowing
14 application on approximately 19 million acres (76,890 km²) of public lands, if development on
15 public lands could exceed 24,000 MW during the 20-year study period assessed, the BLM will
16 need to re-evaluate the cumulative impacts of such development through additional NEPA
17 analyses.
18

19 Alternatives incorporating distributed generation with utility-scale generation, or
20 focusing exclusively on distributed generation, do not respond to the agencies' purpose and need
21 for agency action in this Solar PEIS. The applicable federal orders and mandates providing the
22 drivers for specific actions being evaluated in this Solar PEIS compel the agencies to evaluate
23 utility-scale solar energy development. The Energy Policy Act of 2005 (P.L. 109-58) requires the
24 Secretary of the Interior to seek to approve non-hydropower renewable energy projects on public
25 lands with a generation capacity of at least 10,000 MW of electricity by 2015; this level of
26 renewable energy generation cannot be achieved through distributed generation systems. In
27 addition, Order 3285A1 issued by the Secretary of the Interior requires the BLM and other
28 DOI agencies to undertake multiple actions to facilitate large-scale solar energy production.
29 Accordingly, the BLM's purpose and need for agency action in this Solar PEIS is focused on the
30 siting and management of utility-scale solar energy development on public lands.
31

32 The proposed programmatic design features will apply to all BLM-administered lands
33 regardless of whether those lands are within variance areas or SEZs. However, based on the
34 extensive upfront data collection and environmental analysis that has been completed for SEZs,
35 the BLM expects that many of the requirements associated with programmatic design features
36 will be met or substantially met for lands in SEZs. For example, as part of the Solar PEIS, the
37 BLM has undertaken groundwater modeling for some of the SEZs. The programmatic design
38 feature that requires the collection of such groundwater information therefore will have already
39 been at least partially met. Further, because SEZs have been sited to avoid potential resource
40 conflicts, the BLM expects that many design features will not be triggered.
41

42 Based on input received through the Draft Solar PEIS and additional outreach conducted
43 between the publication of the Supplement to the Draft Solar PEIS and the Final Solar PEIS, the
44 BLM has modified the proposed design features presented in the Final Solar PEIS. The proposed
45 design features are intended to result in the avoidance, minimization, and/or mitigation of
46 potential resource conflicts. Some design features may require variations from what is described

1 (e.g., a larger or smaller protective area). In some cases, multiple options for addressing a
2 potential resource conflict are provided. Applicants will be required to work with the BLM to
3 address proposed variations in the design features and to discuss selected options for avoidance,
4 minimization, and/or mitigation of potential resource conflicts. Variations in programmatic
5 design features will require appropriate analysis and disclosure as part of individual project
6 authorizations. Programmatic design features that do not apply to a given project should be
7 described as part of the project case file along with an appropriate rationale.
8
9

10 **3.10 CONCERNS REGARDING LOSS OF MULTIPLE LAND USE**

11
12 **Summary:** Commentors requested that the BLM explore all options to allow the SEZs to
13 be multiple use because once these lands become industrial, they will be permanently changed.
14 Comments included requests to allow the SEZs to be multiple-use areas and to co-exist with
15 grazing, wind energy, agriculture, and recreation. Strengthening the permitting and leasing
16 process was mentioned as a method to conserve public land and balance multiple uses. Several
17 comments cited the FLPMA and its mandate that public lands be managed without permanent
18 impairment and that projects that eliminate one or more designated uses be reported to Congress.
19 A concern was also expressed that lands that might be set aside for mitigation of the impacts of
20 solar development would further lessen the amount of land available for multiple uses.
21

22 **Response:** The BLM is charged with managing public lands under a multiple-use
23 mandate, but as recognized in Section 103(c) of FLPMA, multiple uses may not always occur on
24 the same piece of land and uses may shift over time. The BLM balances various uses and land
25 classifications through its land use planning process to ensure an appropriate mix of uses is
26 provided. The need to accommodate solar energy resource development on the public lands has
27 necessitated examination and rebalancing of competing uses.
28

29 ROWs for utility-scale solar energy development in SEZs would be given priority over
30 all other ROW applications. The BLM may decide to authorize other ROWs or uses in SEZs,
31 however, that are found to be compatible with utility-scale solar energy development, such as
32 shared access roads or transmission lines or other generation sources, such as geothermal. The
33 identification of an area as an SEZ will not affect previously authorized ROWs, regardless of
34 whether construction has been initiated on those ROWs. The BLM will consider the processing
35 of pending Solar ROW applications in identified SEZs on a case-by-case basis.
36

37 The BLM will coordinate with any potentially affected grazing permittee/lessee to
38 discuss how a proposed solar project may affect grazing operations and to address possible
39 alternatives as well as mitigation and compensation strategies. Upon acceptance of a POD that is
40 likely to adversely affect a current livestock grazing operation, the BLM authorized officer will
41 send a certified letter to the permittee/lessee to serve as the 2-year notification of the BLM's
42 potential decision to cancel the permit/lease, in whole or in part, and devote the public lands to a
43 public purpose that may preclude livestock grazing, as required by 43 CFR 4110.4-2(b). The
44 intent of the 2-year notification is to provide the grazing permittee/lessee time to make any
45 necessary financial, business, or management adjustments should the permit/lease be cancelled

1 (in whole or in part). The letter will also inform the permittee/lessee of his or her ability to
2 unconditionally waive the 2-year prior notification.
3

4 For those impacts on BLM-administered lands resulting from solar energy development
5 that are not avoided or minimized, the BLM must implement effective measures to offset (or
6 mitigate) impacts and to ensure viability of resources over time. To help accomplish this goal,
7 the BLM proposes to establish regional mitigation plans for development in SEZs
8 (see Section A.2.5 of Appendix A). Projects outside of SEZs would also be required to follow
9 the mitigation hierarchy: avoid, minimize, mitigate. In accordance with NEPA, the impacts of
10 solar development projects and all associated mitigation measures (if any), as well as any further
11 impacts caused by the mitigation measures themselves, must be analyzed. This will include
12 impacts on other land uses cause by mitigation measures. The anticipated effectiveness of any
13 mitigation measures in reducing or avoiding adverse impacts must also be considered.
14

16 **3.11 APPLICATIONS FOR SOLAR ENERGY ROWS**

17

19 **3.11.1 Fast-Track Projects**

20

21 **Summary:** Commentors disapproved of the fast-track projects, citing inadequate
22 consultation with tribes and the impacts on sacred sites and landscapes. Comments included
23 requests for the BLM to publicly acknowledge the deficiencies of the current fast-track process
24 and commit to improve it. One commentor stated that there is no scientific evidence for the
25 assertion that reduced GHG emissions offset the negative environmental impacts of utility-scale
26 solar projects, thus allowing them to push through approvals.
27

28 **Response:** The term “Fast Track” was used by the BLM to indicate priority processing
29 of projects in previous years. The BLM now refers to such projects as “Priority Projects.” The
30 BLM, in coordination with other DOI agencies, will apply the due diligence and screening
31 criteria requirements of IM 2011-060 and IM 2011-061, or other policies that the BLM might
32 adopt in the future, to determine priority projects. Designation as a “priority” project means that
33 the BLM and other DOI agencies have agreed to prioritize processing and review of the
34 application. Priority projects are subject to all regulatory and statutory requirements, including
35 full NEPA review. Designation of a project as priority does not confer any decrease in permitting
36 time.
37

38 Applications for utility-scale solar energy facilities on BLM-administered lands, whether
39 granted priority status or not, are processed on a project-by-project basis as ROW authorizations
40 issued in accordance with Title V of FLPMA and BLM’s ROW regulations (43 CFR Part 2800).
41 When the BLM authorizes the construction of utility-scale solar energy generation facilities on
42 BLM-administered lands, it must comply with NEPA, the Endangered Species Act (ESA), the
43 National Historic Preservation Act of 1966 (NHPA), and other applicable statutes and
44 regulations. The BLM’s project-specific environmental analysis must address all applicable
45 components of the solar energy generation facility, including, as appropriate, the installation and
46 maintenance of solar collectors, the availability and consumption of water for steam generation

1 and cooling, oil or gas backup generators, the creation and use of thermal or electrical storage,
2 turbines or engines, access roads, electrical inverters and transmission facilities, and water or
3 natural gas pipelines. In addition, solar energy development must be in conformance with the
4 existing, approved land use plan (see Section 1.3.4). The BLM’s existing solar energy policies
5 and proposed Solar Energy Program, if adopted, will help the BLM prevent unnecessary damage
6 to the environment, including unnecessary or undue degradation of the public lands, and
7 otherwise meet the objectives of BLM’s ROW regulations (43 CFR 2801.2), by establishing
8 sound environmental policies, procedures, and siting and mitigation strategies for solar energy
9 development on the public lands.

12 **3.11.2 Pending Applications**

14 **Summary:** Some commentors stated that active applications should not be reviewed until
15 a ROD is issued and that processing applications beforehand interferes with the purpose of the
16 Solar PEIS. There were also comments that any existing applications that are located outside of
17 areas where development is allowed under any alternative can be discarded, and that applicants
18 can resubmit under the new program and relocate into the SEZs.

20 **Response:** The BLM defines “pending” applications as any applications (regardless of
21 place in line) filed within proposed variance and/or exclusion areas before the publication of
22 the Supplement to the Draft Solar PEIS (October 28, 2011), and any applications filed within
23 proposed SEZs before June 30, 2009 (see Section 1.3.3.2 of this Final Solar PEIS). Pending
24 applications will continue to be processed in accordance with due diligence and siting
25 requirements under the BLM’s existing policies and regulations and will not be subject to any
26 new program elements adopted through the ROD for this Solar PEIS. The BLM has cataloged
27 91 first-in-line solar applications that meet the definition of pending; as of May 31, 2012, 13 of
28 these first-in-line pending applications had been closed (denied or withdrawn). The BLM will
29 process second-in-line and subsequent applications as pending applications if they otherwise
30 meet the criteria for pending and the corresponding first-in-line application is closed (denied or
31 withdrawn).

34 **3.11.3 New Applications**

36 **Summary:** Many commentors argued that the Solar PEIS fails to address how existing
37 solar applications will be managed, and many recommendations were made as to how BLM
38 should process these applications. Many of the comments received did not differentiate between
39 pending and new applications; instead, they either recommended or questioned the date on which
40 applications would be processed according to the terms in the ROD or continue to be processed
41 under current guidelines. Commentors also questioned how applications filed before issuance of
42 a ROD and before RMP amendments will be treated. Some commentors recommended that all
43 existing solar applications outside of the SEZ should be rejected. Other commentors argued that
44 the BLM should process applications according to criteria set forth in BLM IM 2011-059 dated
45 February 7, 2011. There were recommendations that ROW applications submitted after June 30,
46 2009 should not be processed. At least one commentor recommended that applications filed after

1 March 1, 2011 be prioritized and that the BLM maintain publically available lists of active solar
2 applications and incorporate these data into the Final Solar PEIS. Other commentors requested
3 that all new ROW applications should not receive further processing until after the ROD is
4 signed.

5
6 **Response:** The BLM defines “new” applications as any applications filed within
7 proposed SEZs after June 30, 2009, and any applications filed within proposed variance
8 and/or exclusion areas after the publication of the Supplement to the Draft Solar PEIS
9 (October 28, 2011). All new applications will be subject to program elements adopted
10 by the Solar PEIS ROD, which may include a competitive process for projects in SEZs
11 (see Section 2.2.2.2.1 of this Final Solar PEIS) and a variance process for projects proposed
12 in variance areas (see Section 2.2.2.3).

13 14 15 **3.12 SOLAR ENERGY TECHNOLOGY SELECTION AND IMPACT EVALUATION**

16
17 **Summary:** Various technologies have different problems (e.g., noise for dish engine,
18 bird mortality for power towers). There were concerns that the assessment of impacts of the
19 various technologies in the Solar PEIS would become outdated quickly, and that technologies at
20 utility scale are untested in desert environments. Commentors wanted the Solar PEIS to state
21 how changing technologies would be incorporated in the BLM’s Solar Energy Program.

22
23 It was stated that only low-water-use technologies should be employed and that wet
24 cooling should not be allowed. Some commentors specified PV should be the only technology
25 granted BLM ROWs because of low water use and low height of the panels. A request was
26 received for the Final Solar PEIS to expand the analysis of water usage for the proposed SEZs.
27 Several comments criticized technology information provided in Appendix F of the Draft Solar
28 PEIS.

29
30 **Response:** The Solar PEIS included assessments of the technologies currently in use in
31 the United States or other parts of the world. If ROW applications employing significantly
32 different technologies with different potential impacts are received by the BLM over the 20-year
33 study period, then additional analysis will be required to evaluate those impacts. In addition, a
34 detailed comparison of the efficiencies of the various technologies was considered beyond the
35 scope of the Solar PEIS, for which the assessment was limited to the potential environmental
36 impacts of the technologies.

37
38 The jurisdiction of the BLM does not include the granting of water rights or permits to
39 pump groundwater. Such jurisdiction is complex and the permitting agencies vary from state to
40 state. To accommodate the flexibility described in the BLM’s program objectives and in light
41 of anticipated changes in technologies and environmental conditions over time, the BLM has
42 removed some of the prescriptive SEZ-specific design features presented in the Draft Solar PEIS
43 and the Supplement to the Draft Solar PEIS, including specifically disallowing wet or dry
44 cooling for the proposed SEZs). For the Final Solar PEIS, detail was added to the groundwater
45 analysis for the proposed SEZs. The maximum amount of water rights likely to be obtainable for
46 each SEZ was estimated and compared with the amount needed for wet- or dry cooling at full

1 build-out. However, it was recognized that various mixed configurations of projects utilizing
2 various technologies could occur within SEZs that would not exceed the estimated maximum
3 obtainable amount of water. This more complex assessment of groundwater availability in the
4 SEZs was reflected in the modified SEZ-specific design features.

5
6 Appendix F of the Draft Solar PEIS provided extensive information on the four
7 technologies assessed, thermal storage technologies, and various configurations of transmission
8 facilities. This information was presented as background for the Solar PEIS impact analyses, but
9 was not needed for the assessments. The information was not updated for the Final Solar PEIS.
10 The project-specific assessments would address impacts from the technologies to be employed,
11 including technologies that had changed or were not included in the Solar PEIS.

12 13 14 **3.13 RELEVANT LAWS AND EXECUTIVE ORDERS**

15
16 **Summary:** Several comments regarding BLM’s authorities under FLPMA and the public
17 land trust doctrine focused on the scale of the utility-scale solar energy developments and their
18 long-term impacts on the environment, and observed that BLM should use all its FLPMA
19 authorities to protect public lands. Other commentors suggested that BLM ensure that local laws
20 and ordinances be included along with Federal and state laws as requirements applicable to
21 applicants, and that the PEIS include noise regulations and policies, laws related to rail
22 transportation, and the Farmland Protection Policy Act. Comments also suggested that all air
23 quality impacts be thoroughly modeled and that BLM include a statement in the Solar PEIS that
24 it will ensure compliance with federal and state air quality standards. Two comments suggested
25 that preparation of the Solar PEIS does not supplant the need for the development and adoption
26 of regulations applicable to solar energy development. The criteria for approving or rejecting
27 solar project applications and the role of public participation were mentioned as needing to be
28 addressed by regulations.

29
30 **Response:** In accordance with FLPMA (Section 103(c)), public lands are to be managed
31 for multiple use that takes into account the long-term needs of future generations for renewable
32 and nonrenewable resources. The Secretary of the Interior is authorized to grant ROWs on
33 public lands for systems of generation, transmission, and distribution of electric energy
34 (Section 501(a)(4)). When the BLM authorizes the construction of utility-scale solar energy
35 generation facilities on BLM-administered lands, it must comply with NEPA, the ESA, NHPA,
36 and other applicable statutes and regulations including federal, state and local laws and
37 ordinances (e.g., air quality, noise, farmland protection, and the like). The BLM’s project-
38 specific environmental analysis must address all applicable components of the solar energy
39 generation facility, including, as appropriate, the installation and maintenance of solar collectors,
40 the availability and consumption of water for steam generation and cooling, oil or gas backup
41 generators, the creation and use of thermal or electrical storage, turbines or engines, access roads,
42 electrical inverters and transmission facilities, and water or natural gas pipelines. In addition,
43 solar energy development must be in conformance with the existing, approved land use plan.

44
45 The potentially applicable requirements in Appendix H are limited to federal or state laws
46 or county ordinances; applicable regulations and policies have not been included in order to keep

1 the appendix brief. Rail planning and safety laws were not included but would be considered if
2 applicable for individual projects. Guidance for noise levels is discussed in Section 5.13 of the
3 Draft Solar PEIS. The Farmland Protection Policy Act is included in the list of potentially
4 applicable laws in Table H-9, Land Use, of Appendix H of the Draft Solar PEIS.
5

6 The PEIS is not intended to serve as a regulation applicable to utility-scale solar projects;
7 the PEIS, however, may inform the development of regulations. The BLM has decided to
8 undertake rulemaking to establish a competitive process for offering public lands for solar as
9 well as wind energy development within designated leasing areas (i.e., SEZs). The rule will also
10 address other policy elements for solar and wind ROWs, such as bonding and rental rates. When
11 established, the rule may supersede some of the current authorization policies identified in the
12 Solar PEIS (see Section 2.2.2.2.1 for more information). The rule making process allows ample
13 opportunities for public involvement. An Advanced Notice of Proposed Rulemaking (ANPR)
14 was published on December 29, 2011, and a draft rule is expected closely following the release
15 of the Solar PEIS ROD.
16

17 18 **3.14 ALTERNATIVES EVALUATED IN THE SOLAR PEIS**

19 20 21 **3.14.1 SEZ Program Alternative (SEZ Only Alternative)**

22
23 **Summary:** Many commentors expressed support for the SEZ Program Alternative.
24 These commentors argued that the SEZ Program Alternative would result in targeted solar
25 energy development in which SEZs would be clearly identified and vetted by all interested
26 parties. Commentors also suggested that the acreage available for solar development in the
27 proposed SEZs would be sufficient to support future solar development according to the RFDS
28 estimates in the PEIS. Commentors were in support of the SEZ Program Alternative because it
29 would minimize impacts on desert ecology, wildlife, wildlife corridors, water resources, cultural
30 and historic resources, and viewsheds, and avoid conflicts with National Parks. Commentors also
31 argued that the SEZ Program Alternative would streamline the environmental review process and
32 reduce the need for additional transmission line infrastructure.
33

34 Commentors who opposed the SEZ Program Alternative thought that it would not make
35 available an adequate amount of land to support solar development and would not fulfill the
36 purpose and need of the PEIS. Commentors argued that the SEZ Program Alternative would
37 slow pace of development, and the program would have limited flexibility including siting
38 opportunities to identify appropriate locations for utility-scale solar development. At least one
39 commentor argued that the SEZ Program Alternative would not be compatible with near-term
40 national renewable energy policies, because it would not provide sufficient certainty for long-
41 term development planning.
42

43 **Response:** The BLM agrees that there are many advantages to development in SEZs and
44 has therefore prioritized development within SEZs under its proposed Solar Energy Program
45 and also developed a proposed process for identifying new SEZs if needed (Section A.2.6 of
46 Appendix A). However, development in variance areas may be needed in the near term, because

1 the lands identified as SEZs might be insufficient to accommodate demand for utility-scale solar
2 development or may not have access to adequate transmission capacity to facilitate such
3 development. In addition, there might be market, technological, or site-specific factors that make
4 a project appropriate in a non-SEZ area. The variance process, however, is intended to be the
5 exception rather than the rule. The BLM will consider ROW applications for utility-scale solar
6 energy development in variance areas on a case-by-case basis based on environmental
7 considerations; coordination with appropriate federal, state, and local agencies and tribes; and
8 public outreach.

11 **3.14.2 Solar Energy Development Program Alternative (BLM Preferred Alternative)**

13 **Summary:** Commentors who supported the BLM Preferred Alternative did so because
14 they thought it would allow for the most efficient development of utility-scale solar energy and
15 would provide a comprehensive analysis and mitigation recommendations for solar energy.
16 However, some of these commentors noted that additional considerations such as transmission
17 capacity, water availability, coordination with the FAA and military, and other siting concerns
18 could make some of the proposed SEZs difficult to develop. Commentors argued that siting
19 flexibility is critical to the solar industry as technologies develop, and that the current permitting
20 process must be improved to allow expedited development and reduced costs to developers.

22 Commentors who opposed the BLM Preferred Alternative did so because they felt it was
23 too similar to the no action alternative, would result in a lengthy and expensive environmental
24 review process, and would fragment desert ecosystems. Commentors argued that opening
25 22 million acres (89,031 km²) of development is not necessary to achieve the estimated future
26 solar energy requirements in the BLM RFDS analysis. Other commentors were opposed to
27 making large amounts of land available for solar energy development. Commentors were
28 concerned that while the SEZs have been analyzed in great detail, the remaining lands have not
29 and significant environmental and cultural resources impacts could result.

31 **Response:** Many of the concerns expressed regarding the BLM Preferred Alternative
32 were addressed through the development of a variance process in the Supplement to the Draft
33 Solar PEIS and its refinement for the Final Solar PEIS (see Section 2.2.2.3). Under the preferred
34 alternative, development in SEZs would be prioritized; however, development in variance areas
35 may be needed in the near term because the lands identified as SEZs might be insufficient to
36 accommodate demand for utility-scale solar development or may not have access to adequate
37 transmission capacity to facilitate such development. In addition, there might be market,
38 technological, or site-specific factors that make a project appropriate in a non-SEZ area. The
39 variance process, however, is intended to be the exception rather than the rule. The BLM will
40 consider ROW applications for utility-scale solar energy development in variance areas on a
41 case-by-case basis based on environmental considerations; coordination with appropriate federal,
42 state, and local agencies and tribes; and public outreach.

44 To address the possibility that additional restrictions to development in the currently
45 proposed SEZs might be needed based on future analysis and that there may not be adequate
46 development capacity in the currently proposed SEZs, a protocol for identifying new SEZs on

1 BLM-administered lands has been included in the Final Solar PEIS (Section A.2.6 of
2 Appendix A).

3 4 5 **3.14.3 BLM No Action Alternative** 6

7 **Summary:** Commentors in favor of the No Action Alternative argued that it would
8 require a more thorough review of impacts and slow the project approval process in comparison
9 with the action alternatives, and thus would be more protective of the environment. In addition,
10 commentors argued that all projects should be subject to a full NEPA review, regardless of their
11 location.
12

13 Commentors who opposed the No Action Alternative thought that project-by-project
14 approvals would fail to protect public lands and that the impacts would be greater and more
15 widespread under the No Action Alternative. Commentors also argued that under the No Action
16 Alternative, there would be greater uncertainty, conflicts and delays in the permitting process.
17

18 **Response:** Regardless of the alternative selected, applications for utility-scale solar
19 energy facilities on BLM-administered lands will be processed as ROW authorizations issued in
20 accordance with Title V of FLPMA and BLM's ROW regulations (43 CFR Part 2800). When the
21 BLM authorizes the construction of utility-scale solar energy generation facilities on BLM-
22 administered lands, it must comply with NEPA, ESA, NHPA, and other applicable statutes and
23 regulations. The BLM project-specific environmental analysis must address all applicable
24 components of the solar energy generation facility, including, as appropriate, the installation and
25 maintenance of solar collectors, the availability and consumption of water for steam generation
26 and cooling, oil or gas backup generators, the creation and use of thermal or electrical storage,
27 turbines or engines, access roads, electrical inverters and transmission facilities, and water or
28 natural gas pipelines. In addition, solar energy development must be in conformance with the
29 existing, approved land use plan (see Section 1.3.4). The BLM's existing solar energy policies
30 and proposed Solar Energy Program, if adopted, will help the BLM prevent unnecessary damage
31 to the environment, including unnecessary or undue degradation of the public lands, and
32 otherwise meet the objectives of BLM's ROW regulations (43 CFR 2801.2), by establishing
33 sound environmental policies, procedures, and siting and mitigation strategies for solar energy
34 development on the public lands.
35
36

37 **3.14.4 BLM Modified SEZ Alternative** 38

39 **Summary:** Many commentors recommended that the agencies modify their preferred
40 alternative to facilitate efficient and environmentally responsible permitting for project
41 developers. Some commentors suggested that individual SEZs be modified or eliminated to
42 avoid sensitive resources. Commentors provided specific recommendations including boundary
43 revisions and exclusion areas; areas where additional analysis is needed; sensitive resources that
44 will need to be addressed with further site-specific, project-level review; opportunities for
45 responsible development; and mitigation measures. Commentors also recommended a more
46 robust and efficient process to designate new SEZs in the future, and an alternative that would

1 limit development to the SEZs identified in the Final Solar PEIS and additional SEZs that may
2 be identified in the future.

3
4 Other commentors expressed concern about identifying new SEZs in addition to those
5 identified in the Final Solar PEIS and about the variance process, which could allow
6 environmental effects across 20 million acres (80,937 km²) of public land even though the
7 RFDS indicates additional lands would not be needed. Commentors recommended that the
8 BLM tighten the variance process to provide adequate incentives to drive development in the
9 SEZs. Other commentors supported the changes made to the program alternative through the
10 Supplement to the Draft Solar PEIS, arguing that the changes offered flexibility but also ensured
11 protection of sensitive lands.

12
13 **Response:** The BLM has made further modifications to the program alternative that was
14 presented in the Supplement to the Draft Solar PEIS based on comments and concerns raised by
15 the public, stakeholders, and cooperating agencies.

16
17 On the basis of input received from the public, stakeholders, cooperating agencies, and
18 tribes on the Supplement to the Draft Solar PEIS, the list of proposed exclusions was modified,
19 including some state-specific exclusions (see Table 2.2-2 of the Final Solar PEIS). The
20 identification of exclusion areas allows the BLM to support the highest and best use of public
21 lands, avoiding potential resource conflicts and reserving for other uses public lands that are not
22 well suited for utility-scale solar energy development.

23
24 Many of the suggestions on the Draft Solar PEIS were implemented through the
25 development of a variance process in the Supplement to the Draft Solar PEIS. To accommodate
26 the flexibility described in the BLM's program objectives, the program alternative also proposes
27 a collaborative process to identify additional SEZs. The BLM proposes to identify lands outside
28 of proposed exclusion areas and SEZs as variance areas for utility-scale solar energy
29 development. Variance areas would be open to application but would require developers to
30 adhere to the proposed variance process (detailed in Section 2.2.2.3.1 of the Final Solar PEIS).
31 Variances may be needed in the near term because the lands identified as SEZs might be
32 insufficient to accommodate demand for utility-scale solar development or may not have access
33 to adequate transmission capacity to facilitate such development. In addition, there might be
34 market, technological, or site-specific factors that make a project appropriate in a non-SEZ area.
35 The BLM will consider ROW applications for utility-scale solar energy development in variance
36 areas on a case-by-case basis based on environmental considerations; coordination with
37 appropriate federal, state, and local agencies and tribes; and public outreach. The responsibility
38 for demonstrating to the BLM and other coordinating parties that a proposal in a variance area
39 will avoid, minimize, and/or mitigate, as necessary, sensitive resources will rest with the
40 applicant.

41
42 For the Final Solar PEIS, additional appropriate revisions were made to the variance
43 process, for example, to clarify policies for coordination with state and local government
44 agencies. Some clarifications to the description of the variance process made for the Final Solar
45 PEIS include additional text to indicate that the most current data and best science will be used
46 when applications in variance areas are reviewed and a requirement for two preliminary

1 meetings with the BLM and other federal, state, and local government agencies and for a pre-
2 NEPA public meeting as part of the variance process. Details on the procedures for minimizing
3 impacts on grazing rights holders have been added to the ROW authorization policies, applicable
4 to both applications within SEZs and in variance areas (see Section 2.2.1.1 of the Final Solar
5 PEIS, under Due Diligence—Plan of Development). In addition, revisions to the variance
6 process make clear that impact assessment for transmission must be included.

9 **3.14.5 Development on BLM-Administered Lands**

11 **Summary:** Commentors opposed solar development on public land and requested that a
12 more environmentally preferred option be considered that would not allow utility-scale solar
13 development on BLM-administered lands. One commentor argued that restricting solar
14 development to public lands unfairly limits development to rural communities. Most commentors
15 were in favor of solar development on previously disturbed sites or on a smaller scale through
16 distributed generation.

17
18 **Response:** Alternatives based on suggestions that BLM not allow utility-scale solar
19 development on public lands would not respond to the purpose and need for agency action in this
20 PEIS and would not meet the objectives established for the BLM by the Energy Policy Act of
21 2005 and Secretarial Order 3285A1, both of which require the BLM to facilitate renewable
22 energy development on public lands (see Section 1.3.1 of this Final Solar PEIS).

25 **3.14.6 DOE's Proposed Program**

28 **3.14.6.1 DOE's Program and Guidance**

30 **Summary:** Comments on the Draft Solar PEIS requested that DOE strengthen the
31 description of its solar-related programs and include its programmatic environmental guidance
32 in the Solar PEIS. Other comments suggested that DOE establish which program offices would
33 utilize the Solar PEIS and the new guidance in their decision-making processes; that DOE clarify
34 how future environmental analyses would be streamlined through use of the guidance; that DOE
35 support water monitoring and conservation efforts; and that DOE support only projects for which
36 thorough cultural resource consultation has been completed.

38 Comments on the Supplement to the Draft Solar PEIS provided suggestions for
39 changes/additions to the draft guidance that DOE presented in the Supplement. Various
40 comments requested that DOE's proposed guidance be revised to increase the emphasis on early
41 and continued local involvement, to clarify whether the guidance would be applied as
42 recommendations or requirements, to clarify who would use it; and to include programmatic
43 mitigation and monitoring measures.

45 **Response:** In response to comments, the DOE published proposed guidance in the
46 Supplement to the Draft Solar PEIS. The proposed guidance is meant to encourage the support of

1 projects that are planned and designed to avoid significant environmental impacts. In response to
2 the comment that the DOE should clarify what is meant by the intention to streamline future
3 environmental analysis and documentation, the DOE stated that it intended this to mean, as
4 explained in Section 3.3.1 of the Supplement to the Draft Solar PEIS, that use of the proposed
5 guidance would better enable the DOE to comprehensively determine where to make technology
6 and resource investments to minimize the environmental impacts of solar technologies for DOE-
7 supported solar projects and, as a result, streamline future environmental analysis and
8 documentation.

9
10 The DOE included additional text in Section 1.4 of the Final Solar PEIS describing the
11 breadth of the various DOE programs that could potentially fund solar projects and the variety of
12 program goals, which make it impractical to define a single DOE Solar Energy Program that
13 could meet all needs adequately. This breadth of funding programs and variety of goals also
14 makes any attempt to define an RFDS highly speculative. DOE projects and activities are subject
15 to the appropriate NEPA review, at the site-specific level, and these activities would be included
16 in any subsequent cumulative impacts analysis. In addition, any project-specific monitoring and
17 mitigation and all necessary consultations with other federal agencies would be addressed in a
18 project-specific NEPA review.

19
20 In addition to including the proposed guidance in the Supplement to the Draft Solar
21 PEIS and the Final Solar PEIS, the DOE has added language to Sections 1.4 and 2.3 of the
22 Final Solar PEIS to clarify use of the guidance. The DOE clarified that the guidance contains
23 recommendations, not requirements. Section 1.4 of this Final Solar PEIS clarifies that the
24 proposed guidance would be available for consideration during development of projects and
25 proposals by both federal entities and the general public, and by decision makers when the
26 decision to implement any solar energy project is being evaluated.

27
28 The DOE has considered all suggested revisions to the proposed guidance and, within the
29 scope of this document, the authority of DOE, and as appropriate to the proposed action, has
30 modified the proposed guidance. More specifically, the DOE has revised the proposed guidance
31 in this Final Solar PEIS to incorporate some suggestions, including adding the phrases “and
32 rangelands,” “microphyll woodlands,” “lands identified as incompatible for renewable energy
33 development by local government,” “state wildlife agencies,” “critical wildlife habitats and
34 migrations corridors,” “National and Historic Scenic Trails,” and “State Natural Heritage ranks
35 G1 and G2” to various parts of Section 2.3.2. The DOE added the bullet “Consider visual effects
36 of project location and components on nearby units of the National Park System and other areas
37 under National Park System management” and the bullet “Coordinate with the U.S. Army Corps
38 of Engineers to discuss the reach and extent of waters of the United States on the proposed
39 project site. As appropriate, present a reasonable range of on-site and off-site alternatives and an
40 analysis that evaluates alternatives to avoid impacts on waters in compliance with Section 404
41 of the Clean Water Act.” DOE’s proposed guidance in the Final Solar PEIS emphasizes
42 coordination with the Federal Aviation Administration (FAA) and DoD for development in
43 proximity to airports. Also, DOE’s proposed guidance emphasizes consideration of water
44 resource issues and early interaction with the USFWS, state and tribal agencies, and local
45 jurisdictions. Further, in response to the comment that the DOE should commit to supporting
46 only those projects for which thorough cultural resource consultation has been completed, the

1 DOE would like to clarify that it would not fund or proceed with a solar energy project unless it
2 has fulfilled all environmental and other related requirements, including Section 106 of the
3 NHPA. However, DOE’s proposed guidance is intended to be applicable to a wide range of
4 projects and locations; therefore, it does not include site-specific directives.
5

6 The DOE anticipates that the proposed guidance, if adopted, would allow the DOE to
7 further integrate environmental considerations into its analysis and selection of proposed solar
8 projects. The DOE believes this would allow the appropriate project-specific NEPA review to
9 proceed more efficiently, including development of appropriate project-specific mitigations, and
10 the application of BLM requirements to appropriate projects. Any of the DOE program and field
11 offices that support solar energy projects may take advantage of the analysis in the Solar PEIS
12 and use the proposed guidance. It is not limited to particular offices within the DOE.
13
14

15 3.14.6.2 Siting of DOE-Supported Projects

16
17 **Summary:** The DOE should support distributed generation and siting of solar projects on
18 previously disturbed lands and in low-conflict areas. In addition, it was requested specifically
19 that the DOE support siting on previously disturbed tribal lands.
20

21 **Response:** While distributed energy is outside the scope of this Solar PEIS, the DOE
22 did include additional text in Section 1.4 of the Final Solar PEIS describing the breadth of the
23 various DOE programs that could potentially fund solar projects and the variety of program
24 goals, which make it impractical to define a single DOE Solar Energy Program that could meet
25 all needs adequately. The DOE also included additional information in Section 1.2 of the Final
26 Solar PEIS detailing why both utility-scale and distributed generation solar power are needed.
27

28 In addition, commentors suggested that the DOE give preference to projects on
29 previously disturbed lands. DOE’s proposed guidance in the Final Solar PEIS recommends that
30 DOE “maximize use of previously disturbed lands” (see Section 2.3.2.3). DOE’s proposed
31 guidance recognizes the importance of siting projects in low-conflict zones (specifically, see the
32 recommendations contained in Section 2.3.2.3, Land Use, of the proposed DOE guidance).
33 Further, DOE anticipates that the proposed guidance, if adopted, would allow the DOE to further
34 integrate environmental considerations into its analysis and selection of proposed solar projects.
35 All DOE projects, whether on federal, state, private, or tribal lands, undergo project and site-
36 specific analysis, as appropriate, under NEPA.
37

38 The DOE continues to explore opportunities to engage in meaningful dialogue with the
39 tribal nations to enhance interactions and relationships regarding solar energy development.
40 DOE’s proposed guidance encourages early interactions with Native American tribes and
41 organizations. However, because the DOE may be asked to fund projects on federal, state,
42 private, or tribal lands, the guidance is not location-specific.
43
44

3.14.7 Distributed Generation Alternative

Summary: Commentors recommended that BLM and DOE include a distributed generation alternative that would eliminate or reduce the need for SEZs. Commentors suggested that limiting action alternatives to an SEZ-only alternative comprising 700,000 acres (2,833 km²) and a Solar Program alternative encompassing 22 million acres (89,031 km²) would not constitute a reasonable range of alternatives. Commentors argued that a distributed generation alternative would be comparable in efficiency and cost to a utility-scale solar development alternative and should be considered. In addition, commentors argued that an alternative that is outside the legal jurisdiction of the lead agency must still be analyzed in an EIS if it is reasonable.

Response: As discussed in Section 1.2, the scope of the PEIS is limited to utility-scale solar development, in part, because the Energy Policy Act of 2005 and DOI Secretarial Order 3285A1 require that the BLM take steps to facilitate development at that scale. The development of distributed-generation, small-scale solar energy facilities, such as roof-top mounted PV systems, is not included in the scope of this PEIS. While such solar energy development will be an important component of future electricity supplies (and is the focus of separate DOE initiatives; see Section 2.5.1 of the Final Solar PEIS), current research indicates that the development of both distributed-generation and utility-scale solar power will be needed, along with other energy resources and energy efficiency technologies. Because these systems typically do not include electricity storage, they cannot provide power during the evenings or at night, and the power output can fluctuate significantly during cloudy weather. As a result, buildings equipped with roof-top PV systems remain dependent on the transmission grid, and electric utilities must maintain adequate generating capacity to provide electricity to customers when needed. Ultimately, both utility-scale and distributed-generation solar power will need to be deployed at increased levels, and the highest penetration of solar power overall will require a combination of both types.

Alternatives incorporating distributed-generation with utility-scale generation, or focusing exclusively on distributed generation, do not respond to the agencies' purpose and need for agency action in this Solar PEIS. As discussed in Section 1.1, the Energy Policy Act of 2005 (P.L. 109-58) requires the Secretary of the Interior to seek to approve nonhydropower renewable energy projects on public lands with a generation capacity of at least 10,000 MW of electricity by 2015; this level of renewable energy generation cannot be achieved through distributed-generation systems. In addition, Order 3285A1 issued by the Secretary of the Interior requires the BLM and other DOI agencies to undertake multiple actions to facilitate large-scale solar energy production.

The evaluation of distributed-generation systems does fall within the scope of DOE's mission; however, it is being handled in other initiatives separate from this Solar PEIS. The DOE recognizes that the present electric grid, built decades ago, was based on a centralized generation approach and was not designed to handle high levels of distributed renewable energy systems. In 2007, DOE launched the Renewable Systems Interconnection (RSI) study to identify the technical and analytical challenges that must be addressed to enable high penetration levels for distributed energy systems, with a particular emphasis on solar PV

1 systems (see Section 2.5.1 of the Final Solar PEIS). As a result of the RSI study, in 2008, the
2 DOE initiated the Solar Energy Grid Integration Systems (SEGIS) program to further develop
3 electronics and build smarter, more interactive systems and components. In addition, in 2011, the
4 DOE launched the Rooftop Solar Challenge to accelerate significant improvements in market
5 conditions for solar PV projects.
6

7 Through these efforts, the DOE is actively pursuing the expansion of distributed-
8 generation systems and their contribution to the country's electricity supply. While distributed
9 generation of solar energy clearly is an important component of DOE's SunShot Initiative and
10 Solar Energy Technologies Program, inclusion in this analysis of an alternative incorporating
11 distributed generation does not address the DOE's purpose and need to satisfy both E.O.s and
12 respond to this congressional mandate and promote, expedite, and advance the production and
13 transmission of environmentally sound energy resources, including renewable energy resources
14 and, in particular, cost-competitive solar energy systems at the utility scale (see Section 1.4.1).
15

16 **3.14.8 Other Suggested Alternatives** 17

18
19 **Summary:** Commentors recommended other alternatives in addition to the alternatives
20 considered in the Solar PEIS. Suggestions included a disturbed lands alternative, an alternative
21 that excludes public land from solar energy development, a conservation protection alternative,
22 a demand-side management alternative, and an alternative that includes SEZs at a scale
23 commensurate with the RFDS. One commentor suggested an alternative that recognizes that
24 transmission infrastructure may not be constructed and therefore SEZs might not be developed as
25 proposed. A recommendation was made to include an alternative that restricts the range of solar
26 energy technologies to promote technologies that minimize water use. Commentors suggested
27 that the PEIS identify more alternatives, including alternatives with different levels of solar
28 energy development and the implementation of smaller scale projects, given the rapidly changing
29 technology and economics of solar energy development. One commentor suggested that BLM
30 consider land exchanges with local governments as an additional alternative, while another
31 recommended that BLM consider an SEZ alternative that continues to process existing ROW
32 applications that have been screened according to exclusion criteria. Commentors recommended
33 an alternative that establishes renewable energy zones, rather than limiting zones to solar energy
34 exclusively. Other commentors suggested that the DOE consider a broader range of alternatives
35 because it is not limited to development on public land. A few commentors disagreed with all of
36 the alternatives because the large impacts from solar energy development cannot be mitigated
37 enough to adequately protect water, wildlife, and other natural resources.
38

39 **Response:** Parts of some of the suggested alternatives have been considered in the Solar
40 PEIS. For example, the development capacity available through the SEZs in comparison with the
41 RFDS is evaluated in the Draft and Final Solar PEIS (see Section 6.2.7), and development
42 constraints due to lack of transmission are discussed in Section G.4 of Appendix G. Potential
43 development limitations in the SEZs due to water constraints are discussed in individual SEZ
44 sections in Chapters 8 through 13. In addition, the BLM has decided to leave small, in some
45 cases isolated, parcels in the variance land base to allow for the opportunity to combine federal
46 and nonfederal lands (that may or may not be disturbed or degraded). The proposed Solar Energy

1 Program does allow processing of pending ROW applications. Consideration of a distributed
2 generation alternative was not included; see Response number 3.14.7 above.

3
4 The BLM and the DOE have considered an adequate range of alternatives and impacts in
5 the Solar PEIS.

6 7 8 **3.15 TECHNICAL RESOURCE AREA ASSESSMENTS**

9 10 11 **3.15.1 Lands and Realty**

12 13 14 **3.15.1.1 Design Features for Lands and Realty**

15
16 **Summary:** These comments addressed design features that will be applied at the time
17 of design and construction of approved solar facilities. One comment addressed the issue of
18 collocation of project infrastructure for single or multiple projects (design feature LR2-1 in the
19 Final Solar PEIS), requesting that the requirement for consolidating access and other supporting
20 infrastructure should be qualified to apply only where feasible and safe. Another addressed
21 whether some preconstruction activities could be permitted prior to the protection of Evidence
22 of the PLSS (design feature LR2-1). A comment requested that relocation of monuments be
23 addressed as a BMP, and another said that the Solar PEIS should acknowledge the full scope of
24 possible ROW conflicts (e.g., ROWs for water, power, and telecommunications in addition to
25 electricity transmission). Finally, one comment stated that effects on prime and unique farmland
26 should be considered.

27
28 **Response:** The design features will be considered by the BLM Authorized Officer prior
29 to approving a solar energy ROW. The direction to the authorized officer is to maximize the
30 efficient use of public land and to minimize impacts. Accomplishing this goal would require
31 recognizing the long-term management needs of the area and would logically include safety and
32 feasibility issues. The second and third comments are addressed by the LR2-1 design feature that
33 addresses PLSS monuments, including a change in wording that specifies that protection of
34 PLSS evidence will be required “prior to commencement of ground disturbing activity.” The
35 design features for lands and realty address conflicts that could occur with any existing ROWs
36 within solar energy development areas, not just existing transmission ROWs (see LR1-1, for
37 example). A design feature requiring consideration of effects on prime and unique farmland has
38 been included in design feature LR1-1 in the Final Solar PEIS. The BLM Authorized Officer will
39 have discretion to consider site specific situations in implementing the design features.

40 41 42 **3.15.1.2 Multiple-Use Concerns**

43
44 **Summary:** This comment articulates the concern that lands currently classified for
45 multiple use in the California desert would be converted to the single-purpose use of solar energy
46 power generation. The comment also describes a concern that lands that might be set aside for

1 mitigation of the impacts of solar development would further lessen the amount of land available
2 for multiple uses.

3
4 **Response:** The BLM is charged with managing public lands in the California desert
5 under a multiple-use mandate, but as recognized in Section 103(c) of FLPMA, multiple uses may
6 not always occur on the same piece of land and uses may shift over time. The BLM balances
7 various uses and land classifications through its land use planning process to ensure an
8 appropriate mix of uses is provided. The need to accommodate renewable energy resource
9 development on the public lands has necessitated examination and rebalancing of competing
10 uses.

11
12 For those impacts on BLM-administered lands resulting from solar energy development
13 that are not avoided or minimized, the BLM must implement effective measures to offset (or
14 mitigate) impacts and to ensure viability of resources over time. To help accomplish this goal,
15 the BLM proposes to establish regional mitigation plans for development in SEZs
16 (see Section A.2.5 of Appendix A). Projects outside of SEZs would also be required to follow
17 the mitigation hierarchy - avoid, minimize, mitigate. In accordance with NEPA, the impacts of
18 solar development projects and all associated mitigation measures (if any), as well as any further
19 impacts caused by the mitigation measures themselves must be analyzed. This will include
20 impacts on other land uses caused by mitigation measures. The anticipated effectiveness of any
21 mitigation measures in reducing or avoiding adverse impacts must also be considered.

22 23 24 **3.15.1.3 Impacts on Adjacent Lands**

25
26 **Summary:** Comments in this category focus on the potential impact of SEZs or solar
27 projects on legal access to adjoining federal, state, and private lands, on nearby state and private
28 lands, and on existing ROWs both within and adjacent to solar developments. One comment
29 requested that the role of invasive species in fire hazards be discussed.

30
31 **Response:** All solar facilities would be developed consistent with the protection of valid
32 existing rights including existing ROWs and legal access. Holders of an existing ROW on BLM-
33 administered lands that are under application for solar development will be notified by the BLM
34 of the existence of the application as required in Title 43 of the CFR and as described in design
35 feature LR1-3, and their comments will be solicited. Informal access (not legal access) to private,
36 state, or federal lands could be disrupted by construction of large solar facilities, but the BLM
37 has adopted a design feature that requires identification of legal access to federal, state, and
38 private lands to avoid creating areas that are inaccessible or that would be difficult to manage
39 (LR1-1). Another design feature (LR1-1) also requires consultation with federal, state, and
40 county agencies; property owners; and other stakeholders to identify potentially significant land
41 use conflicts and directs that those issues be addressed in the project specific environmental
42 analysis. While design feature LR1-1 does not specify an outcome of the consultation, it is
43 intended to ensure a full consideration of any potential conflicts between neighboring
44 ownerships.

1 The Solar PEIS also included a description of the potential conflict between solar
2 energy development and the capacity of designated transmission corridors. In general, solar
3 development and transmission corridor development are not compatible, and approval of solar
4 development or approval of ROWs within corridors will exclude the other use. To adequately
5 consider the future capacity of designated transmission corridors, the BLM has adopted design
6 feature LR2-1, which requires a study of the need for future transmission capacity where any
7 designated corridor intersects a proposed solar energy development.
8

9 The role of invasive species in fire hazards is discussed under Vegetation in
10 Section 5.10.1.1 of the Draft Solar PEIS.
11
12

13 **3.15.1.4 Use of Previously Disturbed Lands**

14

15 **Summary:** These comments have a common theme of not using undisturbed lands for
16 solar energy development. The first comment opposes any conversion of undisturbed public
17 grazing lands and also indicates opposition to conversion of agricultural lands (this generally
18 does not apply to public lands) and agricultural water supplies to support solar energy
19 development. The other two comments recommend using public lands previously disturbed for
20 energy development (e.g., oil and gas) and private agricultural lands that may not have adequate
21 water supplies (example provided is in the San Luis Valley of Colorado).
22

23 **Response:** In response to the identified need to support renewable energy development,
24 the Solar PEIS has reviewed public lands in the six southwestern states for their suitability for
25 solar energy development. As can be seen in the evolution of the amount of land in proposed
26 SEZs and the amount of land available for application outside of SEZs under the variance
27 process, public lands are being eliminated from consideration as well as identified as suitable for
28 solar energy development. At the same time BLM efforts such as the RDEP in Arizona and the
29 review of the fragmented public lands in the West Chocolate Mountains REEA in California are
30 looking at either disturbed lands or lands that are hard to manage for other purposes, to consider
31 their use for renewable energy development. The overall goal is to place renewable energy
32 facilities on public lands where they can best be accommodated while taking into account
33 environmental, social, and economic factors.
34

35 The benefits and opportunities associated with the use of areas in, or adjacent to,
36 previously contaminated or disturbed lands for solar energy development is highlighted in the
37 variance process and the Identification Protocol for New SEZs as well as the incentives for SEZs
38 (partnering with suitable nonfederal lands) in the Final Solar PEIS. The BLM has also decided to
39 leave small, in some cases isolated, parcels in the variance land base as an opportunity to
40 combine federal and nonfederal lands in areas that are disturbed,
41
42

1 **3.15.2 Specially Designated Areas and Lands with Wilderness Characteristics**
2
3

4 **3.15.2.1 Inadequate Wilderness Mapping**
5

6 **Summary:** A commentor indicated that maps in Appendix N of the Draft Solar PEIS do
7 not clearly show wilderness boundaries near the SEZs, especially critical maps for the proposed
8 Riverside East SEZ and the proposed Iron Mountain SEZ that do not show important “linked”
9 views between wilderness areas adjacent to both SEZs.
10

11 **Response:** The maps in Appendix N were not used to support the discussion of impacts
12 on wilderness and other specially designated areas. Specific maps showing the location of
13 wilderness and other sensitive areas were included for the Riverside East SEZ (Section 9.4.3.2)
14 in which impacts on specially designated areas and lands with wilderness characteristics were
15 described. In addition, discussion of the presence of overlapping viewsheds involving the Iron
16 Mountain and Riverside East SEZs was included in the Draft Solar PEIS. However, the Iron
17 Mountain SEZ has been dropped from further consideration as an SEZ, removing the issue of
18 overlapping viewsheds.
19
20

21 **3.15.2.2 Design Features for Specially Designated Areas**
22

23 **Summary:** These comments address programmatic design features in Section A.2.2.2
24 of Appendix A that would affect specially designated areas and lands with wilderness
25 characteristics. Some of the comments concern inventory requirements for wilderness
26 characteristics prior to approval of solar energy facilities, and others indicate that impacts on
27 specially designated areas and lands with wilderness characteristics should be “avoided” not
28 “minimized.”
29

30 **Response:** Design features LWC1-1 and LWC2-1 are intended to ensure that
31 consideration is provided to protection of lands with wilderness characteristics consistent with
32 directions to the BLM in FLPMA, the Wilderness Act, and other legislative, regulatory, and
33 policy direction. BLM managers will determine whether there is current information on lands
34 with wilderness characteristics available at the time of consideration of specific solar energy
35 projects to ensure that values for lands with wilderness characteristics can be properly
36 considered in the environmental impact assessment of a proposed solar energy project. The
37 actual age of any inventory of lands with wilderness characteristics is less important than
38 whether the available information is accurate and whether there have been LUP decisions made
39 regarding management of resources of lands with wilderness characteristics. At this time there
40 are numerous, recently completed BLM LUPs that contain decisions regarding management of
41 lands with wilderness characteristics that can be used to meet the requirements of this design
42 feature.
43

44 The State of Utah has commented that further review of lands with wilderness
45 characteristics is contrary to state law and must be considered during the governor’s consistency
46 review. The comment points out that recent BLM LUPs (Vernal, Price, Moab Monticello,

1 Richfield, and Kanab) have already reviewed lands with wilderness characteristics and should
2 be exempted. These plans are good examples where the issue of lands with wilderness
3 characteristics has been recently addressed and may not have to be reconsidered in the near
4 future; however, should new information regarding lands with wilderness characteristics be
5 provided now or in the future, a review of all available inventory and management information
6 would be completed at that time. All LUPs and LUP amendments are subject to a governor's
7 consistency review as required by Section 202 of FLPMA. The ROD for this FEIS will be
8 subject to such a review by the governors of all six affected states.
9

10 Several comments indicated that impacts on specially designated areas and lands with
11 wilderness characteristics should be completely avoided. The intent of design features LWC1-1
12 and LWC2-1 is to ensure that indirect impacts on specially designated lands and lands with
13 wilderness characteristics are avoided or minimized if application to construct a solar facility
14 on variance lands is received. However, the BLM is charged with a multiple-use mission that
15 sometimes requires choices between competing, valuable resources. The variance process
16 described in the Final Solar PEIS will ensure that decisions regarding location of solar energy
17 facilities shall avoid or minimize impacts on specially designated areas and shall identify
18 mitigating measures for solar facilities near these areas if needed.
19
20

21 **3.15.2.3 Affected Environment Assessment for Specially Designated Areas**

22

23 **Summary:** A comment from the NPS stated that additional information is needed in
24 Section 4.3 of the Draft Solar PEIS on non-BLM administered specially designated areas located
25 within the Solar Energy Development Program lands considered in the Solar PEIS including
26 NPS managed lands.
27

28 **Response:** Information in Section 4.3 of the Draft Solar PEIS was intended to describe
29 the general setting within the study area as it applies to specially designated areas and lands with
30 wilderness characteristics. To that end, only a general characterization of what was meant by the
31 heading of the section was required. Figures 4.3-1 through 4.3-7 in the section show the general
32 locations of specially designated areas. Some additional information provided by the NPS has
33 been included in the Final Solar PEIS update to Section 4.3.
34
35

36 **3.15.2.4 Specially Designated Areas near Colorado SEZs**

37

38 **Summary:** One of the comments mistakenly described areas/features as being within the
39 proposed Antonito Southeast SEZ that are not actually included within the SEZ. Another
40 comment restated some information contained in the Los Mogotes SEZ section of the Draft Solar
41 PEIS, and then mistakenly discussed information not applicable to the proposed Los Mogotes
42 SEZ but possible applicable to nearby areas. A comment on the Draft Solar PEIS supported
43 moving the eastern boundary of the Fourmile East SEZ to the west side of State Highway 150. A
44 comment on the Fourmile East SEZ from the NPS suggested that only low-profile (height) solar
45 facilities be permitted and that power towers be specifically excluded; suggested that lighting in
46 the SEZ be carefully designed to avoid impacts on night sky viewing opportunities from Great

1 Sand Dunes National Park and Preserve and disagreed with the finding that no special design
2 features are needed to reduce night sky impacts. Further, NPS stated its opinion that the
3 presence of solar energy development along the main access road into the Great Sand Dunes
4 National Park and Preserve and within the viewshed of the park would adversely affect park
5 visitors' recreational experience.
6

7 **Response:** In the Supplement to the Draft Solar PEIS, the eastern boundary of the
8 Fourmile East SEZ was moved to the west to improve the view of the mountains to the east for
9 travelers on State Highway 150 and to reduce the potential impact on travelers heading for the
10 Great Sand Dunes National Park and Preserve. The BLM has decided to not restrict potential
11 solar energy technologies that can be constructed within SEZs as part of this Solar PEIS and is
12 deferring the decision on the types of technologies that might be permissible to be addressed at
13 the site-specific level at which a wide array of technology issues and resource impact
14 information (e.g., water use, impact on surrounding specially designated areas, military and
15 civilian airspace issues, and so on) can best be analyzed. The BLM included a proposed design
16 feature that would reduce or eliminate night sky glow from solar facilities, in Section A.2.2.11.3
17 of Appendix A.
18
19

20 **3.15.3 Livestock and Grazing**

23 **3.15.3.1 Compensation for Permittee Losses**

24
25 **Summary:** These comments all dealt with suggested compensation of grazing permittees
26 for losses associated with changes in BLM grazing permits. Comments suggest compensation
27 for lost animal unit months (AUMs), water rights, and the invalidation of approved allotment
28 management plans. Comments also included a disagreement with a 2-year Notice of Cancellation
29 and a suggestion that if an allotment is cancelled, an alternative area should be provided to the
30 grazing permittee.
31

32 **Response:** The administration of grazing permits is governed by the regulations
33 contained in 43 CFR Part 4100. Applications for future solar development would require
34 additional NEPA analysis, and potential impacts on grazing privileges and associated water
35 rights would be analyzed at that time. As a first course of action, the BLM will coordinate with
36 any potentially affected grazing permittee/lessee to discuss how a proposed solar project may
37 affect grazing operations and to address possible alternatives as well as mitigation and
38 compensation strategies. In order to eliminate grazing from all or a portion of an allotment,
39 a decision must be issued in accordance with 43 CFR Part 4160. If a proposed allotment
40 modification or closure affects use of authorized range improvements, the BLM must
41 compensate the permittee as provided in Section 402(g) of FLPMA. The requirements for
42 notification of cancellation are defined in 43 CFR 4110.4-2(b) and specify a 2-year advance
43 notice to permittees except under emergency conditions. The compensation for the loss of the
44 permittee's portion of the value of range improvements is defined in 43 CFR 4120.3-6. Although
45 there are no regulatory requirements to provide replacement grazing lands to permittees
46 displaced by new uses of the public lands, the revised Solar Program ROW Authorization

1 policies described in Section 2.2.1.1 of the Final Solar PEIS provides additional details on how
2 the BLM will address grazing lease cancellations resulting from the approval of solar ROWs,
3 including the requirement that the decision address compensation for range improvements.
4

6 **3.15.3.2 Disagreement with Livestock Grazing Impact Assessment Methodology**

7
8 **Summary:** These comments stated that the grazing impact assessment methodology
9 presented in the Draft Solar PEIS was incorrect and described additional impacts not identified in
10 the Draft. Additional information was also provided on impacts on specific allotments included
11 in the DLVN and Wah Wah SEZs as they were proposed in the Draft Solar PEIS.
12

13 **Response:** The methodology employed in the Draft Solar PEIS was intended to
14 qualitatively identify impacts on grazing operations by artificially equating percentage reductions
15 in authorized AUMs to low, medium, and high impacts. However, based on the comments
16 received, the methodology clearly was not effective in meeting this goal and has been dropped.
17 Revisions have been included in the updated livestock grazing sections for applicable SEZs
18 (Chapters 8 through 13 in this Final Solar PEIS) that better describe the range of potential
19 impacts on individual ranch operations as a result of a loss in grazing, such as a loss in the value
20 of the private lands and water rights associated with the ranch operations. Specific impacts are
21 still not quantified because of the need to analyze the potential impacts of specific solar
22 development proposals on specific ranch operations, but it is believed that the description of
23 qualitative impacts is now more complete.
24

26 **3.15.3.3 Range Improvements**

27
28 **Summary:** These comments are from one organization. Some of the comments were
29 generic, while other referred to specific SEZs. The comments included objections to possibly
30 mitigating a loss of AUMs with range improvements and to the lack of a cumulative impact
31 analysis for the consideration of the mitigation of grazing losses, and suggestions that the NEPA
32 process should consider a range of mitigation activities and that the BLM should consider the
33 relinquishment of lost AUMs rather than mitigation for their loss.
34

35 **Response:** In the Draft Solar PEIS the BLM identified potential impacts that could occur
36 on grazing from the development of solar energy facilities and also indicated potential mitigation
37 measures that could be employed to minimize those impacts. There was no decision made as to
38 what, if any, mitigation measures would be employed. The BLM will coordinate with any
39 potentially affected grazing permittee/lessee to discuss how a proposed solar project may affect
40 grazing operations and to address possible alternatives as well as mitigation and compensation
41 strategies. Site-specific analysis of grazing impacts of specific projects would need to be
42 conducted for 11 future solar projects. Any site-specific analysis of the impacts on grazing would
43 necessarily include consideration of the impacts of any potential mitigating measures that might
44 be employed as well as the impacts from any loss of AUMs. Design Feature RG1-2 for livestock
45 grazing was amended to indicate that retirement of lost AUMs would also be considered.

1 Cumulative effects of any range improvements proposed for mitigation of lost AUMs would also
2 be considered at the site-specific level.
3
4

5 **3.15.3.4 Design Features for Livestock Grazing**

6

7 **Summary:** The comments suggested revision of the proposed design feature for
8 livestock grazing (now numbered RG1-1), which would have required that the applicant and the
9 permittee be encouraged to enter into an agreement that addresses mitigation and compensation
10 for the ranch owner's portion of the value of range improvements that would be lost due to
11 construction of solar energy facilities.
12

13 **Response:** The BLM agrees that this provision presented as part of the design feature in
14 the Draft Solar PEIS should be removed. There may be many issues that need to be discussed
15 regarding impacts on grazing operations, and it is inappropriate to single out this one issue. The
16 design feature as presented in the Final Solar PEIS requires evaluation of impacts on rangeland
17 resources and grazing use as part of the environmental impact analysis for the project and
18 consideration of options to avoid, minimize, and/or mitigate adverse impacts in coordination
19 with the BLM.
20

21 **3.15.3.5 Comments Opposing Solar Development Due to Grazing Impacts**

22

23 **Summary:** Many of these comments suggested that solar development should occur in
24 areas that either are not suitable for grazing or are not being grazed. Some commentors stated
25 that there should be no net loss of grazing AUMs from BLM-administered lands.
26

27 **Response:** Livestock grazing occurs on about 105 million acres (424,920 km²) of BLM-
28 administered lands within the study area, and consequently there is likely to be conflict between
29 solar energy development and livestock grazing in most suitable solar energy sites. The BLM is
30 charged in FLPMA with managing the public lands for many uses and is frequently allocating or
31 re-allocating lands among the various competing uses. Overall, about 19 million acres
32 (82,964 km²) are identified as potentially available for application under the program alternative
33 in this Solar PEIS. At the site-specific level, the BLM has dropped or modified boundaries of
34 proposed SEZs, some because of conflicts with grazing use, and has also adopted programmatic
35 design features for livestock grazing that may help avoid or reduce conflicts with grazing in the
36 future. Through this Solar PEIS, the BLM is making reasonable land allocation decisions
37 between competing resources that take into account the many potential uses of the public lands
38 and strike a balance compatible with the mandate in FLPMA. The BLM will coordinate with any
39 potentially affected grazing permittee/lessee to discuss how a proposed solar project may affect
40 grazing operations and to address possible alternatives as well as mitigation and compensation
41 strategies and fully consider potential impacts as part of site-specific environmental analysis.
42
43
44

1 **3.15.4 Wild Horses and Burros**

2
3
4 **3.15.4.1 Impacts on Wild Horse and Burro Water Sources**

5
6 **Summary:** One comment suggested that there is an apparent conflict in two design
7 features related to water sources for wild horses and burros and water sources for facility use.

8
9 **Response:** In the Draft Solar PEIS, one of the design features for wild horses and burros
10 did state that coordination would occur to ensure that impacts on wild horses and burros would
11 be minimized. However, it was not clear whether water sources would be maintained, and while
12 they may be maintained, other solutions to minimize impacts on grazing rights holders may also
13 be identified or, in some cases, the impacts may not be entirely mitigated. In the Final Solar
14 PEIS, the text of the design feature WHB1-1 has been modified to clarify this issue.

15
16
17 **3.15.5 Recreation Impacts**

18
19
20 **3.15.5.1 Multiple-Use Concerns for Recreation**

21
22 **Summary:** The comments contained several themes, including (1) the level of analysis
23 of recreation impacts is insufficient; (2) there should be more of discussion of mitigation of
24 recreation impacts and more mitigation should be required; (3) impacts on motorized access
25 (i.e., OHV use) are understated, including a lack of discussion of impacts on those physically
26 unable to use public lands for recreational purposes without motorized access; (4) there is a
27 lack of discussion of the impact on human-powered outdoor recreation; and (5) there was no
28 discussion of the impact on hunting and fishing on lands adjacent to solar energy developments.

29
30 Several commentors raised the issue of the potential impact on recreational use associated
31 with acquisition or management of lands for mitigation of impacts on other resources
32 (e.g., desert tortoise mitigation). Commentors also raised the issue of lack of mitigation for
33 impacts on recreational use, particularly where roads designated for motorized (OHV) use might
34 be affected.

35
36 **Response:** The level of recreational analysis in the Solar PEIS is consistent with the scale
37 of the document, and the descriptions in Sections 4.5 and 5.5 adequately characterize both the
38 types of recreational activities on public lands and the nature of the impacts on recreational use
39 that would accompany solar energy development. Both direct and indirect impacts are described.
40 Many types of specially designated areas are excluded from solar energy development
41 (see Table 2.2-2 for the complete list of exclusions), which will avoid direct impacts on
42 recreational use of these areas. It is likely that there are areas that are not designated but that
43 provide important recreational outlets to local or regional populations (e.g., well known rock-
44 hounding areas). These areas have not been identified as exclusion areas as part of this Solar
45 PEIS, but the BLM has adopted design feature R2-1, which would preclude development of such

1 areas. These types of areas will be identified at the site-specific level by local BLM offices along
2 with local users.

3
4 The areas excluded from solar development will protect a large percentage of the existing
5 recreational use on public lands from direct impacts; however, the exclusions do not remove the
6 possibility of direct impacts on dispersed and low-density recreational uses (e.g., back-country
7 driving, hunting, bird-watching) common on BLM-administered lands or indirect impacts on
8 recreation use in adjacent or nearby specially designated areas. In general, impacts would be
9 expected to occur where solar energy development would sever existing routes of travel or is
10 located in areas designated as open to OHV use, potentially affecting both the land within the
11 solar development area and lands that would be accessed via the severed routes. To address these
12 issues, the BLM has adopted design features R1-1 and R2-2, which require that impacts on
13 recreational access be evaluated, that methods of maintaining public access through or around
14 solar developments be considered, and that replacement of acreage lost from OHV use be
15 considered as part of the project-specific environmental analysis. Where solar development is
16 adjacent or near to specially designated areas or other BLM-administered lands that support
17 recreational use, the potential impact on the recreational use of those areas will have to be
18 assessed at the project-specific level when the types of recreation taking place and the size and
19 type of solar energy development are known.

20
21 As part of the Solar PEIS process, the BLM evaluated in more detail 24 potential SEZs
22 for the full range of resource values including recreation. The site-specific recreation analysis of
23 all these areas indicated that the anticipated recreational use of the areas was very low. There
24 was no BLM site-specific recreational use information available for any of the areas, largely
25 because the levels of recreational use are thought to be low and the BLM has not expended its
26 scarce resources in quantifying the use. Aside from routes designated for motorized use by the
27 BLM that were found in many proposed SEZs including two SEZs where competitive events
28 have been permitted, there is only one example of an undesignated but well-known and locally
29 important recreational use area that was identified in these analyses. This area was a dry lakebed
30 in the southern portion of the originally proposed Delamar Valley SEZ. No other specific
31 recreational use areas were identified by the public during the comment periods on either the
32 Draft Solar PEIS or the Supplement to the Draft.

33
34 In the case of acquisition of lands for impact mitigation, lands previously open to the full
35 array of multiple uses could be designated for management for the benefit of specific resources
36 excluding or restricting recreational and other uses. The potential for impacts from mitigation
37 lands is discussed in the impact evaluations in Section 5.5 and in the SEZ recreation sections. In
38 accordance with NEPA, the impacts of solar development projects and all associated mitigation
39 measures (if any), as well as any further impacts caused by the mitigation measures themselves
40 must be analyzed. This will include impacts on other uses such as recreation caused by
41 mitigation measures. The anticipated effectiveness of any mitigation measures in reducing or
42 avoiding adverse impacts must also be considered.

43
44 Potential impacts were identified in several SEZs where roads designated for motorized
45 use might be affected; these impacts could be mitigated through the application of programmatic
46 design feature R1-1. Should potential significant impacts on recreational use be found in the

1 analysis of a future, specific development proposal, mitigation of those impacts would be
2 addressed as part of the environmental analysis for that project.

3 4 5 **3.15.5.2 Impacts on Recreation from the Colorado SEZs**

6
7 **Summary:** These comments focused on the potential loss of hunting recreation
8 opportunities if the four proposed Colorado SEZs were developed.

9
10 **Response:** Even with the reduction in the size of three of the four proposed SEZs through
11 the Supplement to the Draft Solar PEIS, there is still the potential for loss of about 16,309 acres
12 (66 km²) of public land to solar development. While the impact on wildlife populations that
13 might be affected by this level of development is considered to be small, this could still result in
14 an undetermined loss of hunting recreation opportunities. It is anticipated that this loss of
15 recreational opportunity would be small, commensurate with the anticipated loss in wildlife
16 habitat

17 18 19 **3.15.5.3 Design Features for Recreation**

20
21 **Summary:** These comments deal with three proposed programmatic design features
22 contained in the Draft Solar PEIS: a design feature stating that public access through or around
23 solar facilities shall be retained; a design feature stating that replacement of acreage for lost
24 OHV shall be considered; and a design feature stating that solar facilities shall not be placed in
25 areas of unique or important recreation resources. In the Final Solar PEIS the first two of these
26 design features are combined in design feature R1-1.

27
28 **Response:** Comments on design feature R1-1 indicated that it could be problematic to
29 allow access “through” solar energy development sites because of security and operational issues
30 and proponents may have limited ability to provide access “around” solar facilities. Because of
31 their size, it is likely that solar energy facilities will intersect established public access routes to
32 and through public lands, and design feature R1-1 is intended to ensure that this public access is
33 maintained. It is reasonable that the cost of providing such public access is a legitimate cost of a
34 solar energy project just as in any infrastructure cost, and alternatives of how and where to locate
35 public access could be considered in the environmental analysis of the proposed project. Security
36 and operational needs of the proponents could be valid reasons for allowing the relocation of
37 existing access around facilities.

38
39 The next design feature in question addresses situations in which designated OHV routes
40 or use areas would be affected by the development of solar energy facilities. Impacts on these
41 uses and impacts associated with the replacement of these areas would be evaluated as part of the
42 environmental analysis of project-specific impacts. Relocation of use or designation of
43 replacement routes and would be consistent with existing land use plans and with current
44 guidance on designation of routes and use areas.

1 Comments on the design feature addressing areas of unique recreation resources
2 generally requested a clear definition of “unique or important recreation resources.” The intent of
3 this design feature is to recognize that there may be local or regionally significant recreational
4 resources that are not included in the list of areas that are excluded from solar development but
5 that should be considered for protection as part of the process of evaluating a proposed solar
6 energy project (see Table 2.2-2 for the complete list of excluded areas). Areas that might meet
7 this definition could be identified during meetings with BLM staff prior to submitting solar
8 energy development applications or could be identified by the public or others in the scoping
9 portion of a project environmental analysis process. The BLM designated officer could choose to
10 exclude such areas from further consideration for solar development or could choose to analyze
11 the impacts of including such an area(s) in the environmental analysis for the project. One
12 comment suggested that national historic trails should be considered in the context of this design
13 feature. Although national historic trails are included in Table 2.2-2 as exclusion areas, the
14 determination of how far from an national historic trail solar facilities should be located would
15 be made during project-specific analysis of potential impacts.
16
17

18 **3.15.6 Military and Civilian Aviation Impacts**

19 20 21 **3.15.6.1 Design Features for Military and Civilian Aviation**

22
23 **Summary:** These comments related to two design features that are now combined into
24 design feature MCA1-1 in the Final Solar PEIS. Some comments concerned supporting the
25 requirements in design feature MCA1-1 that require early coordination between applicants and
26 airport operators. Other comments also apply to this design feature and requested additions to the
27 technical reports that would be required of applicants for issues related to military equipment
28 operations. The remaining comments relate to design feature and concern the assessment of the
29 potential impact of solar energy development on species that might either be displaced onto
30 military reservations or whose existing populations on the reservations might take on increased
31 significance that could adversely affect the operation of the military facility.
32

33 **Response:** Design feature MCA1-1 in the Final Solar PEIS has been formulated to
34 clarify that any type of potential impacts on civilian or military aviation airports or on civilian or
35 military airspace are to be discussed with the airport operators or airspace users very early in the
36 application process. Each consultation between applicants and civilian and military airport and/or
37 airspace operators will focus on the unique conditions presented by a particular solar energy
38 proposal. Rather than specify a particular report that would have to be prepared regarding
39 potential impacts of military systems or of solar facilities, the coordination process itself would
40 be sufficient to determine whether particular studies or reports would be required. Additionally,
41 in preparing selected parcels within SEZs for competitive offer, the BLM would be required to
42 review all existing analysis for the SEZ and work with FAA, DoD and others, as necessary, to
43 ensure the consideration of potential impacts on military and civilian aviation were fully
44 considered.
45

1 Additional information regarding the nature of the potential impact on military
2 installations from impacts on special status species from solar energy project construction has
3 been included in Section 5.6.1 of the Final Solar PEIS. In summary, the clarification indicates
4 that the impact on military operations most likely would occur if solar energy facilities created
5 enough disruption of sensitive species habitat that existing habitat for the same species within a
6 military reservation would have to be managed in a more restrictive manner that adversely
7 affected military operations. Displacement of species from a solar energy development onto a
8 military reservation would require the presence of a very highly mobile species and one whose
9 habitat needs could be met on the military reservation, which is not likely to often be the case.
10 The biological evaluations that would analyze impacts on species found within a solar energy
11 development site would likely be sufficient to answer the question of potential impact on military
12 reservations.

13 14 15 **3.15.6.2 SEZ-Specific Technology Restrictions** 16

17 **Summary:** These comments focused on whether technology restrictions should be
18 adopted in advance of a site-specific proposal. Concerns mentioned were that height restrictions
19 affect only power tower technology and could be hard to change. Two Lincoln County, Nevada,
20 comments supported the military use of airspace in the NTTR but adopted a different position on
21 making decisions on acceptable technology use. An industry comment indicated that the FAA
22 process is established and the requirement for early consultation with the FAA is unnecessary
23 and might not be welcomed by the FAA.
24

25 **Response:** With the exception of the Colorado SEZs and the Gillespie SEZ, the BLM has
26 determined that decisions on which technologies will be acceptable within designated SEZs will
27 be made at the project-specific level. Early coordination with the military and civilian airport
28 operators and military airspace users will be required by design feature MCA1-1 to understand
29 potential conflicts with airport operations or with military airspace use. The requirement for early
30 consultation with the FAA contained in design feature MCA1-2 has also been retained. The FAA
31 will be afforded an early opportunity to review proposed solar projects in order to avoid needless
32 processing of applications that could have been determined to have unacceptable impacts on
33 airspace use earlier in the review process. Additionally, in preparing selected parcels within
34 SEZs for competitive offer, the BLM would be required to review all existing analysis for the
35 SEZ and work with FAA, DoD and others, as necessary, to ensure the consideration of potential
36 impacts on military and civilian aviation were fully considered.
37
38

39 **3.15.6.3 General Impacts on Military Operations** 40

41 **Summary:** The military offered comments consistently through the analysis process
42 identifying parts of the Draft Solar PEIS and the Supplement to the Draft Solar PEIS that did not
43 accurately reflect its understanding of potential impacts on military operations. Its comments
44 have been both general and site-specific. The military made suggestions on additional types of
45 impacts of solar development on military use of MTRs, SUAs, and testing activities that were
46 not included in the Draft Solar PEIS or the Supplement to the Draft Solar PEIS. Two areas were

1 identified that have no formal designation as military use areas but could be adversely affected
2 by solar development—the Vinagre Wash complex in California and the Nellis AFB bailout area
3 in the proposed Dry Lake SEZ). Several comments were provided on the potential impacts on the
4 use of military airspace.

5
6 **Response:** The military effectively conveyed its concerns about general and site-specific
7 impacts. Some SEZs of particular concern to the military were dropped from further
8 consideration (Delamar Valley in Nevada) and others were reduced in size partially in response
9 to these concerns (Amargosa Valley, Dry Lake, and Dry Lake Valley North in Nevada). It is
10 clear both from the analysis and the military comments that there is potential to affect the
11 functioning of a widespread system of military training and testing facilities in the western states.
12 Avoiding unintended impacts on this system will require future close coordination in assessing
13 the potential impacts of solar applications on important military uses. The BLM has committed
14 to the military to conduct thorough, early consultation on proposals that might affect military
15 uses of public lands to identify and mitigate potential impacts in both SEZs and variance areas.
16 This commitment is included in design feature MCA1-1. The BLM has determined that at this
17 Solar PEIS level, it is not possible to satisfactorily resolve potential conflicts between solar
18 development and military uses, so site-specific coordination on specific projects will be
19 conducted.

20
21 The Vinagre Wash complex in California has been excluded from the development
22 footprint of the BLM Solar Energy Program. A portion of the Dry Lake SEZ has been excluded
23 from the SEZ, but the excluded land is not designated as an exclusion zone, so it will be open to
24 application for future solar energy development.

25 26 27 **3.15.6.4 Impacts on the NTTR**

28
29 **Summary:** Although many of the comments here were similar to those addressed under
30 the category of general impacts on military operations, it is clear from the analysis and the
31 military comments that the NTTR is a unique asset in that it represents 40% of the Air Force land
32 assets and that it also has an important testing mission. The area is depicted by the military as a
33 “...pristine military testing and training laboratory built on 70 years of scientific research
34 supporting military intelligence, arms, and radar advancement through the investment of an
35 incalculable sum of federal funding. The training and testing environment provided by the NTTR
36 cannot be replicated. ... Any development in the Dry Lake Valley North SEZ ... will have an
37 immediate adverse impact to [on] current and future DoD operations on the NTTR.”

38
39 Initially seven of the proposed SEZs were either within or nearby the borders of the
40 NTTR. Two of these were dropped from further consideration, and the size of two others was
41 substantially reduced. The military has continued to request the proposed Dry Lake Valley
42 North SEZ be dropped from further consideration. The military has requested that any solar
43 facilities developed in the remaining Nevada SEZs be restricted to “low-profile, low-glare PV
44 technologies under 50 ft (15 m) AGL similar to the PV I Array at Nellis AFB.” Lincoln County,
45 Nevada, has supported the military’s request for limiting the height of solar facilities within
46 Lincoln County.

1 **Response:** The military has consistently raised concerns about the potential impact on
2 military activities associated with development of all the remaining Nevada SEZs. In most
3 instances it appears that height limitations for solar facilities may meet the military’s concerns,
4 but it has enumerated other concerns that need to be considered. The specific concerns of the
5 DoD for individual Nevada SEZs are included in the SEZ-specific evaluations in Chapter 11 of
6 this Final Solar PEIS. Because of the need to pursue development of solar energy production on
7 public lands, the BLM is not prepared at this time to rule out development at the remaining
8 proposed Nevada SEZs; rather, the BLM is committed to early, project-specific consultation on
9 proposed solar facilities located within these SEZs in order to identify and mitigate potential
10 impacts on military airspace use and testing. That commitment is contained in design feature
11 MCA1-1, the variance process, and the SEZ authorization process. For example, in preparing
12 selected parcels within Nevada SEZs for competitive offer, the BLM would be required to
13 review all existing analysis for the SEZ and work with DoD and others, as necessary, to ensure
14 the consideration of potential impacts on military operations were fully considered.

17 **3.15.7 Geologic Setting and Soil Resources**

20 **3.15.7.1 Vegetation Clearing**

22 **Summary:** Several comments expressed concern and questioned the assumption that
23 existing vegetation would be fully removed from SEZs undergoing development; one comment
24 suggested that the BLM and DOE promote conservation practices such as leaving intact patches
25 of vegetation, covering sites with gravel, stabilizing disturbed areas, and reusing topsoil
26 materials quickly. Other comments recommended minimizing soil disturbance (i.e., the project
27 footprint), especially across large expanses of soils that are moderately or highly susceptible to
28 wind erosion, and avoiding areas with desert pavement and biological soil crusts.

30 Another comment stated that the soils analysis did not cover important details of desert
31 pavement, cryptobiotic soil, sand flow, and carbon fixing with enough depth.

33 **Response:** The impacts analysis for soil resources in the Draft Solar PEIS assumed that
34 all existing vegetation would be removed from SEZs undergoing development (as a worse-case
35 scenario); however, projects would employ measures and practices to mitigate the impacts of
36 vegetation removal; these include (as commentators also recommended) minimizing areas of
37 disturbance and avoiding desert pavement and biological soil crusts (to the extent possible).
38 Several other design features to reduce soil erosion have also been proposed; these are presented
39 in Section A.2.2.8 of Appendix A. For at least some solar projects, site vegetation would be
40 cleared for construction purposes (e.g., placing solar panels) but would be encouraged to grow
41 back once the facility installation was complete. Other projects may find it unnecessary to clear
42 vegetation.

44 Desert pavement, biological soil crusts (including nutrient fixation), and eolian
45 processes/dune development are generally described in the soil resources section of Chapter 4
46 (Section 4.7.3). A statement on the effects of soil disturbance on the carbon-fixing function of

1 biological soil crusts (as well as potential carbon release from these and other crusts, such as
2 caliche) was added to the general discussion of soil-related impacts in Section 5.7.1 of Chapter 5.
3 SEZ-specific impacts would be evaluated as part of the project-level NEPA review once the site
4 soil has been fully characterized and project plans (e.g., footprints of disturbed areas) are known.
5
6

7 **3.15.7.2 Soil Erosion**

8
9 **Summary:** Comments concerning soil erosion requested that BLM (1) require a
10 comprehensive soil integrity control plan to cover all soil-related issues (including ethical
11 issues); (2) consider soil erosion due to surface runoff in the context of climate change (and the
12 increase in more extreme rainfall events); (3) allow all the various required plans to be made part
13 of a POD rather than as separate stand-alone documents; and (4) set stringent guidelines for
14 retaining existing native soils and vegetation at construction sites to minimize dust generation.
15 Other comments requested more discussion on how impacts would vary based on the type of
16 facility construction and clarification of text describing the susceptibility of soils to wind erosion
17 (i.e., whether the erodibility rating provided in the soil sections refers to soils before or after
18 vegetation is removed for development).
19

20 One comment suggested that a wind erosion study be conducted to determine the long-
21 term effects of wind erosion (from project areas cleared of vegetation) on patterns of sand
22 deposits, agriculture, and medicinal and food plants used by tribal people.
23

24 **Response:** The various mitigation plans discussed in Section 5.7.4 and listed in
25 Table 5.1-1 are representative of the types of plans project developers would need to prepare
26 during the project planning phase, but they are not prescriptive. The need for project-specific
27 plans and their content will depend on each project's requirements and locations. Authorizing
28 agencies (e.g., the BLM, DOE, or state agencies) will determine the adequacy of the plans for
29 each project.
30

31 Guidelines for retaining native soils and vegetation and minimizing dust generation are
32 provided in the form of mitigation measures (Section 5.7.4) and design features (Section A.2.2 of
33 Appendix A)
34

35 Technology-specific impacts are presented in Section 5.7.2 of Chapter 5. These impacts
36 are discussed in a general fashion because details of specific projects (such as the size of the
37 project footprint) at the SEZs are not currently known.
38

39 The erodibility ratings for soils presented in the SEZ-specific soil resources sections are
40 based on pre-disturbance conditions (see Section 4.7.3.4 for an explanation of wind erodibility
41 ratings). Soil disturbance would increase the erodibility of soils, because it would compromise
42 the factors that function to stabilize soils (e.g., vegetation cover, biological soil crust cover, rock
43 cover, physical crusts, and desert pavement).
44

45 The long-term monitoring of solar facilities during their construction and operation will
46 include an air quality component that will monitor particulate matter (i.e., fugitive dust levels).

1 The monitoring data generated can be used to estimate impact levels at receptor locations in the
2 vicinity of the development.
3
4

5 **3.15.7.3 Soil-Related Diseases**

6

7 **Summary:** Several comments expressed concern over the potential release of soil-borne
8 diseases and toxins (including the *Coccidioides* species of fungus and mineral aerosols) in dust
9 generated by wind erosion in areas disturbed by Solar project related construction.
10

11 **Response:** The potential for exposure to soil-borne diseases and toxins, such as the
12 *Coccidioides* fungus and mineral aerosols, as a result of wind-blown dust in areas of disturbance
13 has been added as a soil-related impact. This potential impact has also been carried through to
14 the air quality and health and safety impact discussions (see Sections 5.11 and 5.21 of the Final
15 Solar PEIS, respectively).
16
17

18 **3.15.7.4 Protection of Carbon Capture**

19

20 **Summary:** Several comments raised the concern that soil disturbance from solar project-
21 related construction could degrade soil structure, thereby reducing the carbon capture potential of
22 affected SEZ soils and/or releasing carbon to the atmosphere.
23

24 **Response:** The carbon-capture potential of desert soils (playa soils, caliche, and
25 biological soil crusts) has been added as an important aspect of their soil function in the general
26 discussion of soils in Chapter 4.
27
28

29 **3.15.7.5 Soil Deposition by Wind**

30

31 **Summary:** Several comments (citing references) expressed concern that dust eroded
32 from SEZ development sites and deposited on snowpack of adjacent mountain ranges could
33 accelerate snowmelt and exacerbate the seasonal effects of climate change (e.g., reducing annual
34 flow of the Colorado River). One comment recommended that any solar-related activity causing
35 fugitive dust be catalogued as a way to estimate total dust emissions at project sites.
36

37 **Response:** Wind-eroded dust from solar development sites is a concern for most of the
38 SEZs, and its deposition on snowpack is an issue that has important implications for the water
39 cycle. This impact has been added to the soil-related impacts discussed in Section 5.7.1,
40 Common Impacts, of Chapter 5.
41
42

43 **3.15.7.6 Mitigation of Soil-Related Impacts**

44

45 **Summary:** Comments concerning mitigation of soil-related impacts included:
46 (1) statements that use of the term *avoid* is too restrictive, especially in relation to land

1 disturbance in natural drainage systems, hill cuts, unstable slopes, unpaved surfaces, and wet
2 soils in project areas; (2) a request that avoiding 100-year floodplains and areas with high
3 seismic activity not be required for appropriately engineered facilities; (3) a request to clarify
4 the term *adequate* in relation to setbacks from natural washes; (4) a statement that minimizing
5 ground-disturbing activities during the rainy season may be too restrictive; (5) a request to
6 provide examples of acceptable barriers in wildlife-crossing areas; (6) a statement that requiring
7 wind studies (to characterize eolian processes) should not be a design feature because it would
8 not expedite the permitting of solar projects; (7) a statement that site inspections be documented
9 and adaptive management practices be employed; (8) a request that any spill response plans
10 incorporate methods for minimizing surface runoff of contaminants to nearby waterways or
11 drainages; (9) a statement on the preferred type of erosion matting; (10) a request for
12 clarification on how natural revegetation efforts would be monitored; (11) a request to add the
13 use of supplemental water during revegetation to improve success; (12) a request to include
14 measures to prevent burial of biological soil crusts by windblown soil deposition from disturbed
15 sites; and (13) a request to include a citation of DOI's Technical Reference 1730-2 (2001),
16 "Biological Soil Crusts: Ecology and Management" to Chapters 4 and 5.

17
18 One comment recommended a mitigation measure requiring that solar projects be aligned
19 perpendicular to prevailing winds to reduce wind erosion, especially across landscapes composed
20 of soils that are highly sensitive to wind erosion. It was also suggested that National Resources
21 Conservation Service (NRCS) soil data be used to identify the soils most susceptible to wind
22 erosion so they may be excluded from development (especially in areas upwind of Class 1
23 airsheds).

24
25 A few commentors were concerned that mitigation measures to address soil-related
26 impacts were not presented in the SEZ-specific chapters; one of these commentors provided four
27 mitigation measures to be incorporated.

28
29 **Response:** Some of the recommended changes were incorporated into the proposed
30 design features presented in Section A.2.2 of Appendix A in this Final Solar PEIS. The terms
31 *avoid* and *minimize* in reference to natural drainage systems, 100-year floodplains, ground-
32 disturbing activities, and so on in project areas are intended to be restrictive (but not prohibitive),
33 especially for project areas in which better options are available, and so those terms have been
34 retained. It is acknowledged that projects can be engineered to accommodate 100-year floods and
35 seismic activity. The term *adequate* was clarified where it is used in the text; other terms, such as
36 *erosion matting* and *monitoring of revegetation efforts* were defined or explained in greater
37 detail. Suggested additions, such as documenting site inspections, modifying spill response plans
38 to include minimizing surface runoff, and using supplemental water during revegetation were
39 incorporated, as appropriate. The BLM has already adopted an adaptive management approach
40 for the solar program (see Section 1.6.2.2 of this Final Solar PEIS), and this approach will be
41 used in its long-term monitoring protocol to ensure its resource management objectives are met.

42
43 Reference to DOI's Technical Reference 1730-2 (2001), "Biological Soil Crusts: Ecology
44 and Management," was included in Chapters 4 and 5 of this Final Solar PEIS.
45

1 Design details, such as those concerning the optimal shape and orientation of a solar
2 project relative to the prevailing wind direction (to reduce the susceptibility of soils to erosion by
3 wind), will be evaluated and decided at the project level. Note that the SEZ-specific chapters
4 already use NRCS data to identify soils that are sensitive to wind erosion. Although these data
5 were not used to identify exclusion areas within SEZs, they will be an important consideration in
6 evaluating impacts on soil resources during the project-specific NEPA review.
7

8 The purpose of the design features is to ensure that solar development occurs on public
9 lands in a way that preserves and protects affected resources. Therefore, the design feature to
10 “determine the need for a study to evaluate the potential impacts of building a solar facility in
11 close proximity to the Great Sand Dunes” (in the case of the Fourmile East SEZ in Colorado)
12 was retained. Applicants may propose variations to the proposed design features for BLM’s
13 consideration.
14

15 Mitigation measures to address soil-related impacts were presented in Chapter 5 of the
16 Draft Solar PEIS; design features based on these measures are identified in Section A.2.2 of
17 Appendix A. The SEZ-specific sections entitled “SEZ-Specific Design Features and Design
18 Feature Effectiveness” refer the reader to Section A.2.2 of Appendix A for the programmatic
19 design features.
20

21 22 **3.15.7.7 Project Design and Geologic Hazards** 23

24 **Summary:** Comments specific to project design in relation to geologic hazards included
25 requests to add information on International Building Codes (detailing seismic requirements) and
26 flood hazard class maps for SEZs.
27

28 **Response:** The seismic information presented in the Solar PEIS provided a general
29 characterization of seismicity and related hazards in the SEZ areas; it was not intended to be of
30 sufficient quality and detail to be used as the design basis for specific solar projects. The
31 International Building Code, as well as other relevant state and local codes, will be taken into
32 account during the project design phase and will likely be based on a more detailed seismic study
33 of the area of interest.
34

35 Floodplain analyses (or flood hazard maps) do not exist for many of the remote valleys in
36 which the SEZs are located. Exclusion areas based on 100-year floodplains will be identified as
37 part of the action plan proposed in Section C.7.2.2 of Appendix C of the Supplement to the Draft
38 Solar PEIS. This work will involve field surveys, consultations with the Federal Emergency
39 Management Agency (FEMA) and state/local flood control agencies, and hydrologic analyses.
40 Reference to the article by House (2005) was added to Section 4.7.2.3.2 of Chapter 4 as a good
41 example of how geologic information can be used to improve flood-hazard management on
42 alluvial fans in desert areas.
43
44
45

3.15.7.8 Geology of Specific SEZs

Summary: Comments concerning specific SEZs focused on additions and corrections to the site descriptions and included (1) details on the purpose of the V-dikes at the Riverside East SEZ; (2) a request that greater consideration be given to mitigating disturbances of desert pavement in the western region of the Riverside East SEZ; (3) a statement that soils at the Millers SEZ are prone to rutting; (4) observations of soil biological crusts within the Escalante Valley and Milford Flats South SEZs; (5) a statement that Lida Valley is a flashflood plain; (6) a statement that potential impacts on soil, forage, and lava rocks due to disturbance at the Antonito Southeast SEZ make this SEZ unsuitable for development; (7) a statement that caliche covers a lot of Imperial County in California and its disturbance would release carbon to the atmosphere and damage the carbon capture potential of soil; and (8) statements that Delamar Valley SEZ is not suitable for industrial development and vehicle traffic because of the deep water table and the fine-grained (powdery) nature of soils.

Response: All the additions and corrections recommended were fact-checked and incorporated into the SEZ descriptions or impacts analysis, as appropriate. On the basis of public comments received, the Delamar Valley SEZ was dropped from further consideration.

3.15.8 Minerals

3.15.8.1 Mineral Inventory and Impacts of Development

Summary: These comments focused on the need for mineral inventories and the potential long-term impact of solar energy development on mineral resources.

Response: Mineral potential assessments for a 20-year mineral withdrawal have been prepared for each of the 17 proposed SEZs and were reviewed by BLM mineral specialists knowledgeable about the regions in which the SEZs are located. The mineral reports are available on the project Web site (solareis.anl.gov/documents). Notification will be provided to Congress regarding any proposed long-term mineral withdrawal of public lands within SEZs as required in FLPMA Section 204(c)(1) and (2).

The mineral potential assessments found there is low potential for the occurrence of locatable minerals and low potential for mineral development at the 17 SEZs; therefore, the impact of the land withdrawal on mineral resources is considered to be small. Although there are a few active mining claims, oil and gas leases, and areas prospectively valuable for low-temperature geothermal resources within and around the 17 SEZs (and one SEZ within a known geothermal leasing area), none of the SEZs is currently producing minerals nor do they have a history of mineral production other than industrial materials (such as sand and gravel, or scoria). Existing valid mining claims and oil and gas leases within withdrawn lands would represent prior existing rights that would be protected. A few existing mining claims have not been tested to determine their validity, but there is no production on these claims. There is one active mill-site claim that is being used to process mineral material that would also be protected.

1 **3.15.9 Water Resources**

2
3
4 **3.15.9.1 Water Use**

5
6 **Summary:** The comments concerned the quantity and source of water that could
7 potentially be used by utility-scale solar facilities. Commentors mentioned the following: (1) wet
8 cooling uses a large amount of water; (2) non-freshwater sources should be considered for use by
9 facilities; (3) water availability is low in much of the project area; (4) wet cooling should not be
10 allowed in all or most of the project area; (5) the BLM should be asked to adopt stringent
11 restrictions on water use; (6) the source of the water for cooling should be identified; (7) the
12 Solar PEIS should ensure that solar energy development does not impair future water resources;
13 (8) technologies that require the least amount of water should be used; (9) water conservation
14 measures should be employed; (10) artificial recharge of aquifers could be used to offset
15 groundwater withdrawals; (11) the Solar PEIS does not provide a sufficient analysis of water
16 resources; (12) a detailed assessment of water resources should be performed before designating
17 an SEZ to determine the allowable water use; (13) CEC will not approve a wet-cooling project
18 unless it uses non-potable reclaimed water; and (14) the peak construction year should be scaled
19 back in basins that do not have the water supply to accommodate water use during the peak
20 construction presented in the Solar PEIS. Several commentors mentioned issues with specific
21 SEZs.

22
23 **Response:** Water use by solar facilities is recognized as one of the primary factors that
24 can negatively affect water resources within a basin. The Solar PEIS used existing and proposed
25 water use numbers relating to solar facilities in order to estimate water use requirements for the
26 peak construction year and operation phases. During construction, water is primarily used for
27 dust control and quantities can be substantial if a large area of disturbance is expected. The
28 assumptions regarding peak year construction activities are conservative (meaning they represent
29 a high level of land disturbance). In addition, construction activities occur only over a short time
30 frame, which makes it possible to import water from off-site. In general, these factors suggest
31 that water use for construction is not a primary concern with respect to water resources. The
32 operations phase (20 years) has much greater potential to affect water resources through water
33 use. Water is used for supporting the potable water supply, for cleaning mirrors and PV panels,
34 and for cooling (parabolic trough and power tower technologies only). Incorporated into these
35 water use numbers are many other water uses, such as fire suppression, vegetation maintenance,
36 equipment cleaning, and the like. The scaling factors used in estimated water use numbers are
37 considered conservative, so they include all potential water uses at a solar facility.

38
39 Water conservation measures are important to the BLM and stressed in the Solar PEIS.
40 One of the main objectives of the required design features and mitigation measures for water
41 resources is to promote the sustainable use of water resources through appropriate technology
42 selection and conservation practices. Reductions in the size of SEZs (along with some SEZs
43 being dropped) and the identification of non-developmental areas have reduced water use
44 requirements at many of the SEZs. Revised water use estimates are presented in the SEZ sections
45 of this Final Solar PEIS.

1 Technologies that use wet cooling are of concern because of their high water demand.
2 Impact analyses used a full build-out of wet-cooled facilities to represent a worst-case scenario
3 with respect to water use. Results of this analysis suggested that full build-out of wet-cooled
4 facilities is unfeasible at 16 of the remaining 17 SEZs. Only the De Tilla Gulch SEZ in Colorado,
5 the smallest SEZ at 1,064 acres, could potentially support full build-out of wet-cooled projects.
6 For each SEZ, any proposed wet-cooled facility would be reviewed on a project-by-project basis,
7 would be required to use water conservation measures, and would have to have detailed
8 hydrologic investigations to ensure protection of water resources in the basin.
9

10 The Solar PEIS made the assumption that local water resources (surface water and
11 groundwater) would be used for operations. Alternative water resources such as reclaimed
12 municipal wastewater and saline groundwater sources were encouraged in the Draft Solar PEIS,
13 but require site- and project-specific information beyond the scope of the Solar PEIS. The Final
14 Solar PEIS discusses other programs working to promote and assess the use of alternative water
15 resources, such as programs within DOE and the WaterSMART (Title XVI) program of the
16 U.S. Bureau of Reclamation (BOR). Other commentors suggested discussion relevant to water
17 conservations measures, such as managed groundwater aquifer recharge programs and the
18 retiring of water rights in overallocated basins. To the extent possible, existing programs and
19 examples of these types of practices were discussed in the Solar PEIS, but assessing the potential
20 implementation of such programs is beyond the scope of the Solar PEIS.
21

22 The BLM acknowledges that several commentors would like the program to ensure that
23 groundwater use in SEZs will not exceed the sustainable yield of the basin. Determining the
24 sustainable yield of a groundwater basin is a difficult task that can mean different things between
25 the scientific and management communities. The design features require hydrologic analyses to
26 be conducted by the developers in order to assist the BLM, along with local and state water
27 management agencies, in setting limits on groundwater use that protect groundwater-dependent
28 resources and other water rights in a basin. The Final Solar PEIS includes information on a water
29 resources inventory for the SEZs, as well as results of groundwater budgets and a simplified one-
30 dimensional groundwater model. This new information on water resources is meant to assist the
31 BLM, along with local, state, and federal water management agencies, in setting limits on water
32 use and reducing impacts on water resources. Given the complexity of hydrology in desert
33 environments, it is acknowledged that not all impacts can be assessed. The BLM is committed to
34 adaptive management and long-term monitoring for projects located on BLM-administered
35 lands; these strategies are additional mechanisms that can minimize impacts on water resources.
36

37 Several commentors suggested that the BLM adopt a stringent water use policy and set
38 limits on water use by solar projects. This mechanism was not chosen because it does not include
39 the existing programs or support of current local, state, and federal water rights and water
40 management programs. Coordination with such agencies is the primary mechanism that the BLM
41 adopted to protect water resources for the Solar PEIS. Water use estimates presented in the Solar
42 PEIS for peak construction year and normal operations are meant to be used as guidelines by the
43 BLM and water rights/management agencies in evaluating water right applications/transfers
44 associated with lease applications. Overall, the BLM is committed to protecting water resources
45 and believes the most appropriate mechanism to ensure protection is coordination with existing
46 local, state, and federal water management agencies.

1 **3.15.9.2 Water Rights and Management**
2

3 **Summary:** The comments addressed water rights issues or issues related to the
4 management of water resources in the project area.
5

6 **Response:** Coordination with local, state, and federal water management agencies is the
7 primary mechanism that BLM adopted to protect water resources and water rights for the Solar
8 PEIS. Several comments suggested that the Draft Solar PEIS failed to assess available water
9 resources in basins that are near full allocation or overallocated with respect to water rights. The
10 Draft Solar PEIS presented information regarding the availability of water rights and estimates
11 of full build-out water requirements and assessed impacts assuming that water rights were
12 transferrable. Whether transferring or obtaining water rights was feasible is beyond the scope of
13 the Solar PEIS, but several design features call for coordination with local, state, and federal
14 water management agencies and the need to secure water rights (through these agencies) before
15 ROW approval.
16

17 Several comments were made about the Colorado River, including entitlement to water,
18 impacts and mitigation, laws and policies regarding Colorado River apportionment, and potential
19 impacts of drawdown on the Colorado River Accounting Surface. Overall, Colorado River
20 water allocations described in the “Law of the River” would not be affected by solar energy
21 development through coordination with federal, state, and local regulators. The Riverside East
22 SEZ is the only SEZ located within the Colorado River Floodplain region. Potential groundwater
23 drawdown below the Colorado River Accounting Surface is discussed in the Riverside East SEZ
24 chapter. A description of the Colorado River Accounting Surface (used to enforce the “Law of
25 the River”), which is enforced by the BOR, is presented in Chapter 4.
26

27 An updated section on water management and applicable laws is presented in Chapter 4
28 of the Solar PEIS. This updated section includes a description of the San Pedro River system,
29 which is relevant to the solar energy development program alternative (not any of the SEZs). The
30 Draft Solar PEIS included descriptions on state-specific programs used to protect water resources
31 and water rights. In certain cases, specific water right issues are explained in more detail for
32 individual SEZs. Recent court decisions that affect water rights in the Dry Lake and Dry Lake
33 Valley North SEZs are presented in the individual SEZ sections. Specific issues pertaining to the
34 newly established subdistrict management zone within the San Luis Valley, and how this affects
35 water management, are discussed in the individual Colorado SEZ sections.
36
37

38 **3.15.9.3 Surface/Ephemeral Water**
39

40 **Summary:** The comments addressed impacts on surface water bodies and included the
41 following: (1) references to the Clean Water Act (CWA) Section 404 and state water resource
42 permitting requirements, (2) floodplain analysis, (3) wetlands and springs, (4) erosion and
43 sediment transport, (5) reference to the importance of ephemeral water bodies to the watershed,
44 (6) lack of data for ephemeral water bodies and deferring of impacts on ephemeral streams to
45 project-specific analysis (commentor suggests the agency acquire the information if feasible and
46 if not feasible, agency should specify why), (7) concern about the loss of ephemeral water bodies

1 and change in stream flows with climate change, (8) concern that design features for ephemeral
2 water bodies (e.g., avoid washes) are too restrictive and will prohibit solar development, and
3 (9) concern that water use/land use will affect surface waters that support ecological function.
4 Many of these comments mention issues/impacts that are generally applied to desert regions, as
5 well as in reference to specific SEZs.
6

7 **Response:** Additional information on surface water features (e.g., stream lengths of
8 ephemeral streams, watershed boundaries, and peak discharge values) is presented in the SEZ
9 sections as a part of the water resources inventory described in the Supplement to the Draft Solar
10 PEIS. In addition to the water resources inventory, an evaluation of ephemeral streams was
11 conducted to assess the potential loss of flood conveyance, sediment transport and storage,
12 groundwater recharge, and vegetation habitat. Results of this analysis are presented in individual
13 SEZ chapters in this Final Solar PEIS along with any special considerations or mitigation
14 measures imposed on critical ephemeral stream reaches identified by this analysis. Initial work
15 on identifying 100-year floodplain and jurisdictional water bodies has been initiated by the BLM.
16 Results from these studies do not affect the Solar PEIS analysis but will be used in the permitting
17 process for ROWs.
18

19 Design features specific to surface water features include coordination with local, state,
20 and federal water management agencies. Application of the CWA and state/local laws is an
21 assumed design feature. Commentors suggested that design features regarding ephemeral
22 streams were too restrictive or not restrictive enough. Protection mechanisms for ephemeral
23 streams are not well developed at this time. The goal of the ephemeral streams evaluation was
24 to identify reaches that provided critical functions to the basin. Determination of the potential
25 impacts on all other ephemeral features needs to occur at the project-specific level, and the
26 identification of ephemeral water features that are sensitive to land disturbance activities can
27 help state and local regulators in permitting programs relating to the CWA and other state-level
28 programs.
29
30

31 **3.15.9.4 Groundwater**

32
33 **Summary:** The comments addressed impacts on groundwater systems from water use
34 and/or land use changes, as well as the need to further study groundwater availability.
35 Commentors were particularly concerned about (1) impacts on water tables, (2) impacts on other
36 users in a basin, (3) impacts on ecological functions, (4) impacts on public trust resources,
37 (5) impacts on interbasin flows, (6) further impacts on basins already in overdraft. Commentors
38 suggest groundwater modeling and basin yield analysis to evaluate specific impacts on
39 groundwater basins.
40

41 **Response:** Additional groundwater information (e.g., depth to groundwater, monitoring
42 well locations, water quality) is presented in the SEZ sections in this Final Solar PEIS as part
43 of the water resources inventory as described in the Supplement to the Draft Solar PEIS. In
44 addition, for each SEZ, a groundwater budget and a simplified one-dimensional groundwater
45 model were used to assess impacts of high, medium, and low pumping scenarios that bound
46 estimated full build-out water estimates. Results of the additional groundwater analyses are

1 presented in this Final Solar PEIS. Each SEZ chapter contains a revised summary of impacts on
2 groundwater that takes into account new water use estimates (reduced by changes in SEZ
3 boundaries), additional information from the water resources inventory, and results from
4 groundwater analyses. Considerations of impacts on groundwater surface elevations, other water
5 rights, groundwater-dependent species, and interbasin flows were factored into the revised
6 summary of potential impacts.
7
8

9 **3.15.9.5 Water Quality**

10
11 **Summary:** Comments addressed impacts on surface water and groundwater quality from
12 solar development, including wastewater, stormwater runoff, and chemicals used. Commentors
13 suggested that the Draft Solar PEIS failed to provide baseline information on water quality.
14 Commentors suggested additional analysis of existing water quality, water treatment, and
15 impacts on water quality be included in the Final Solar PEIS.
16

17 **Response:** Additional baseline water quality information is presented in the SEZ sections
18 in this Final Solar PEIS as a part of the water resources inventory as described in the Supplement
19 to the Draft Solar PEIS. Comments regarding wastewater, stormwater, and the potential for
20 chemical pollution were considered in revising the design features (Section A.2.2 of Appendix A
21 of this Final Solar PEIS). Impacts analysis relating to water quality involves project-specific
22 information that goes beyond the scope of the Solar PEIS. That said, the revised design features
23 take into account the need for these types of analyses at the project level. In addition, the BLM is
24 committed to adaptive management and long-term monitoring (of several resources, including
25 water quality) for projects located on BLM-administered lands.
26
27

28 **3.15.9.6 Design Features for Water Resources**

29
30 **Summary:** Comments addressed the suitability of design features, with some
31 commentors wanting more stringent design features and others wanting less stringent design
32 features to be a part of the Solar PEIS. In addition, some commentors recommended new design
33 features or additional mitigation measures.
34

35 **Response:** The BLM has reviewed and revised the design features presented in the Draft
36 Solar PEIS and incorporated some of the changes suggested. The proposed programmatic design
37 features presented in Section A.2.2 of Appendix A of this Final Solar PEIS will be required for
38 all solar energy applications submitted to the BLM for consideration. Because of site-specific
39 circumstances, some features may not apply to some projects and/or may require slight
40 variations. Applicants will be required to discuss any proposed variations with BLM staff. All
41 variations in programmatic design features will require appropriate analysis and disclosure as
42 part of future project authorizations. It is anticipated that variations in the design features
43 presented will be approved in very limited circumstances.
44

1 The most significant revision to water resources design features is the development of a
2 water-monitoring plan that focuses on groundwater, surface waters, and water quality from
3 construction to post-decommissioning of a project.
4

5 6 **3.15.9.7 SEZ Boundary Changes Related to Water**

7
8 **Summary:** These were comments on the Draft Solar PEIS requesting boundary changes
9 to SEZs to protect water resources.
10

11 **Response:** Revised areas of certain SEZs affect water resources by reducing areas of land
12 disturbance and water use estimates. The reduction of SEZ areas and the identification of non-
13 developmental areas generally resulted in the avoidance of several wetland areas, along with
14 some portions of intermittent or ephemeral streams. Some SEZs were significantly reduced in
15 area, which resulted in a substantial decrease in water use requirement estimates. The new water
16 use estimates and evaluations of the potential impacts resulting from surface disturbances and
17 groundwater use are presented in the SEZ sections of this Final Solar PEIS.
18

19 The reduction in developable areas within the remaining SEZs reduced water use
20 requirements. Estimates of water requirements to support construction and normal operations
21 were reduced by approximately the same factor corresponding to the reduction in areas from the
22 Draft Solar PEIS to the Supplement to the Draft Solar PEIS. Significant reductions in water use
23 estimates primarily affect Brenda, Riverside East, De Tilla Gulch, Fourmile East, Los Mogotes,
24 Afton, Amargosa Valley, Dry Lake, and Dry Lake Valley North SEZs.
25
26

27 **3.15.10 Ecological Resources: Vegetation**

28 29 30 **3.15.10.1 Design Features for Vegetation**

31
32 **Summary:** Many commentors from various organizations representing industry, local
33 and state governments, utilities, environmental groups, and the general public requested that
34 changes be made in the programmatic design features for protection of vegetation. Some
35 requested that the design features be made less restrictive to allow for site-specific evaluation.
36 Others requested that the programmatic design features be made less vague and more restrictive
37 (e.g., by deleting such phrases as “to the extent practicable”).
38

39 **Response:** The BLM has reviewed and revised the design features presented in the Draft
40 Solar PEIS, incorporating some of the changes suggested. The proposed programmatic design
41 features presented in Section A.2.2 of Appendix A of this Final Solar PEIS will be required to be
42 applied by the project applicants to all solar energy applications submitted to the BLM for
43 consideration. Some design features may require variations from what is described (e.g., a larger
44 or smaller protective area). In some cases, multiple options for addressing a potential resource
45 conflict are provided. Applicants will be required to work with the BLM to address proposed
46 variations in the design features and to discuss selected options for avoidance, minimization,

1 and/or mitigation of potential resource conflicts. Variations in programmatic design features will
2 require appropriate analysis and disclosure as part of individual project authorizations.
3

4 Specific details on applying the programmatic design features will be developed at the
5 project level and coordinated through the appropriate agencies. Many design features are related
6 to required plans that will be reviewed and approved by the BLM. Some of the requested
7 additions are part of other design features. The design features were developed for the protection
8 of ecological resources; the design features as presented in this Final Solar PEIS will protect
9 those resources, and additional modifications would not substantively add to resource protection.
10

11 **3.15.10.2 Groundwater Habitats for Vegetation**

12 **Summary:** Several comments expressed concern over the use of groundwater and effects
13 on plants/habitats.
14

15 **Response:** The Draft Solar PEIS, the Supplement to the Draft Solar PEIS, and the Final
16 Solar PEIS address the concern regarding impacts on vegetation from the use of groundwater
17 (see discussion in Section 5.10.1 of the Draft and in the SEZ-specific evaluations in Chapters 8
18 through 13 of the Draft and Final Solar PEIS). At the project level, the effects on groundwater-
19 dependent species and habitats will be required to be evaluated and avoided, minimized, and/or
20 mitigated through coordination with the appropriate regulatory agencies.
21
22
23

24 **3.15.10.3 Vegetation Surveys**

25 **Summary:** Several comments expressed concern regarding the current knowledge of
26 resources on the SEZs, the need to use data from past surveys, and the need to perform new
27 surveys.
28

29 **Response:** To develop a thorough understanding of resources on proposed project sites
30 and especially sensitive resources, the programmatic design features require applicants to
31 conduct surveys of the SEZs and consult with appropriate agencies to obtain data regarding
32 sensitive resources potentially present.
33
34
35

36 **3.15.10.4 Minimizing Impacts on Vegetation**

37 **Summary:** Many comments requested that disturbance of soils, biological soil crusts,
38 and vegetation be minimized, including allowing some vegetation to remain on project sites and
39 preventing the establishment of noxious weeds/invasive species.
40
41

42 **Response:** The programmatic design features include the requirements that projects use
43 previously disturbed land where possible; that disturbance to vegetation, soils, and biological
44 soil crusts be minimized; that low vegetation be allowed to remain where possible; and that the
45 spread of weeds be prevented. Mitigation for specific impacts will be required to be developed
46

1 through coordination with the BLM and appropriate agencies. Long-term monitoring of the
2 effects of solar development on important resources outside the SEZs will be required (e.g., to
3 determine whether invasive plant species have been established).
4
5

6 **3.15.10.5 Invasive Species and Restoration**

7

8 **Summary:** Several comments emphasized the importance of preventing the
9 establishment of noxious weeds/invasive species and requiring the use of native species or
10 nonnative species in revegetation efforts. Comments also noted the difficulty in reestablishing
11 vegetation in arid locations.
12

13 **Response:** Applicants will be required to take appropriate measures to prevent the
14 establishment of nonnative invasive species during project development and during restoration.
15 The species considered desirable for establishment on project sites will be determined through
16 coordination with appropriate agencies. In general, the use of native species is encouraged. The
17 agencies acknowledge the difficulty of vegetation reestablishment, and, as described in the
18 programmatic design features, bonding, meeting success criteria, and oversight will be required
19 for solar projects on BLM-administered lands.
20
21

22 **3.15.10.6 Missing Information or Additional Information Needed**

23

24 **Summary:** Several comments stated that pertinent information or analyses for impacts
25 on vegetation were missing from the Solar PEIS or that more information was needed.
26

27 **Response:** Some of the requested information is included in other sections of the Solar
28 PEIS (e.g., additional information about ecoregions is presented in Appendix I of the Draft Solar
29 PEIS); other items are not necessary in the vegetation analysis. Descriptions of plant species and
30 habitats and discussions of impacts on them are included in the SEZ-specific sections; impacts of
31 alternatives across the six-state program area are described in Sections 6.1 through 6.3;
32 cumulative impacts are discussed in Section 6.5; and ecoregion maps are included in Appendix I.
33 The additional information has been included in the Final Solar EIS where appropriate. Some
34 requested modifications to the analysis would not substantively add to protection of vegetation.
35
36

37 **3.15.10.7 Selection of Impact Levels for Evaluation**

38

39 **Summary:** Some commentors indicated that impact levels should be reevaluated.
40

41 **Response:** The determination of impact levels was based on the criteria identified in each
42 table. While variations in actual project impacts are anticipated, the design features were
43 developed for resource protection, generally with oversight by the BLM or appropriate agencies
44 to ensure the greatest level of effectiveness. Even so, the Solar PEIS acknowledges that many
45 impacts will be large.
46

1 **3.15.10.8 Impacts on Surface Water Habitats**
2

3 **Summary:** Several comments expressed concern regarding impacts on surface water
4 characteristics and habitats that are dependent on surface water.
5

6 **Response:** Impacts on habitats associated with surface water inflows are addressed in
7 Section 5.10.1 of the Draft Solar PEIS as well as in the analysis of each SEZ in which these
8 habitats occur. Programmatic and SEZ-specific design features require protection of surface
9 water features and habitats, including adequate buffers, and require that potential changes in
10 surface water flows or quality be evaluated and any associated impacts on these habitats be
11 avoided, minimized, or mitigated in coordination with appropriate agencies. In many SEZs,
12 playas, wetlands, and major washes have been excluded from the developable area. In addition,
13 hydrologic conditions outside of project areas will be monitored for potential changes.
14

15
16 **3.15.11 Ecological Resources: Wildlife**
17

18
19 **3.15.11.1 Night Lighting Impacts on Wildlife**
20

21 **Summary:** Some of the comments on the impacts of night lighting were concerned with
22 general adverse impacts, stating that bright lights at night may alter the nocturnal behavior of
23 some animals. This could cause migrating birds to fly off course or to collide with solar facilities,
24 alter behavior of reptiles, and cause moths and other insects to remain at lights all night, resulting
25 in over-expenditure of energy, interference with mating, and susceptibility to bats and other
26 predators.
27

28 Other comments were concerned that solar panels could be a source of polarized light
29 that could affect wildlife during the day. Polarized reflected light from solar panels may appear
30 as water bodies to insects that breed in aquatic water bodies. These organisms may mate and lay
31 eggs above the solar panels rather than at aquatic habitats, and this result in major die-offs of
32 aquatic insects due to failure successfully lay eggs in aquatic habitats. The solar panels may also
33 confuse or disorientate birds (including waterfowl, wading birds, and shorebirds) that believe
34 the panels are bodies of water, causing them to collide with solar panels. Concerns were also
35 expressed that polarizing light may attract hummingbirds, bees, and other pollinators, resulting
36 in trapping of or injury to these organisms.
37

38 **Response:** Impacts of lighting, including polarized light, on ecological resources are
39 discussed in Section 5.10 of the Draft Solar PEIS. Among the design features is the following:
40 “ER3-2: Compliance with ecological resource design elements during operations and
41 maintenance of the project shall include turning off all unnecessary lighting at night to limit
42 attracting wildlife, particularly migratory birds.” Potential impacts of polarized light will be
43 monitored. If large impacts are identified, some additional form of mitigation will be required.
44
45

3.15.11.2 SEZ Boundary Changes Related to Wildlife

Summary: Many comments on the Draft Solar PEIS stated a need to modify or replace several of the SEZs with lower-conservation-value lands to avoid harmful impacts on biological diversity. Specific SEZ boundary changes requested included adjustments to avoid impacts on unique or important wildlife species (e.g., bighorn sheep), species groups (e.g., reptiles), and habitats (e.g., playas, major deer migration or wintering areas), or development within the SEZ boundaries (e.g., to allow wildlife to move through large linear-shaped SEZs).

Response: Seven of the original 24 SEZs presented in the Draft Solar PEIS were eliminated, in part due to wildlife considerations. In most of the remaining 17 SEZs, boundaries were changed and/or areas within the SEZ boundary were designated for non-development, again with protection of ecological resources as part of the goal. The Supplement to the Draft Solar PEIS and the Final Solar PEIS provided details on these changes. In addition to these changes, a number of programmatic and SEZ-specific design features are identified to protect ecological resources. Section A.2.2.11 of the Final Solar PEIS lists the programmatic design features for ecological resources required for solar energy development.

3.15.11.3 More Detailed Analyses for Wildlife

Summary: These comments requested greater detail on the following issues: impacts on waterfowl and wetland-dependent wildlife resources from water demands for solar development, a more biologically appropriate scale for evaluating habitat loss, identification of all species affected under each alternative, and incorporation of information from state wildlife action plans, other conservation plans, and various habitat and species guidelines. One comment also stated that the evaluation of species impacts in the Solar PEIS was too simplistic.

Response: Given the large six-state study area and uncertainty in exact project locations, it was not possible to conduct a more detailed site-specific analysis for each species. Impacts on special status species from development in the SEZs, including those listed under the ESA, were determined by using best available information to estimate the amount of potentially suitable habitat within assumed direct and indirect impact footprints relative to the estimated availability in the region. It was not possible to conduct a more detailed site-specific analysis for each species given the large areas involved and uncertainty in exact project locations. The Draft Solar PEIS acknowledged the limitations in the analysis assumptions (see Section M.12 in Appendix M for methodologies and assumptions). As stated in Appendix M, the analysis relied on available data, such as gap analysis project land cover and habitat suitability maps, rather than site-specific survey information, deferring such site-specific information requirements to projects that are at the POD stage. There are too many uncertainties to allow for a more quantitative analysis at the programmatic level. Greater specification in mitigation requirements, impact significance determinations, and measurable standards of protection are also deferred to specific project assessments that would be developed in consultation with state and federal natural resource management agencies. It is expected that this consultation process will identify species and habitats of concern in the project area, the need for additional surveys, quantitative

1 significance criteria, and specific mitigation requirements (including the need for avoidance,
2 buffers, minimization measures, compensatory mitigation, and translocation).

3 4 5 **3.15.11.4 Pre-disturbance Surveys for Wildlife**

6
7 **Summary:** Some comments addressed the need to conduct pre-disturbance surveys
8 during certain periods (e.g., seasonal surveys for migratory bird species and big game and
9 evening surveys for nocturnal species) and at locations that will optimize the potential of
10 detecting species of concern or their habitats and migratory corridors. Other comments stated
11 that the purpose and timing of pre-disturbance surveys are project-specific, and protocols for the
12 surveys would need to be based on resources present and project schedule. Also, pre-disturbance
13 walkthroughs by agencies should be at their discretion, not a design feature requirement. Another
14 comment stressed that pre-disturbance survey procedures should be closely coordinated with
15 state wildlife agencies. Commentors believed that pre- and post-disturbance surveys would allow
16 for use of adaptive management strategies for evaluating solar project installations and the
17 effectiveness of mitigation measures.

18
19 **Response:** Pre-disturbance surveys are an integral component of the programmatic
20 design features that are identified to avoid, minimize, and/or mitigate potential impacts on
21 ecological resources (see Section A.2.2.11 of Appendix A). Pre-disturbance surveys will contain
22 spatial and temporal components that address the concerns expressed in the comments. Many of
23 the design features for ecological resources relate totally or in part to pre-disturbance surveys. If
24 species of concern or their habitats are found to occur within an SEZ, then the design features
25 require additional consultation with state and federal agencies to determine appropriate
26 mitigation measures, which may include avoidance of potentially suitable habitats. The text of
27 one design feature (ERI-34) has been modified to state that it would be at the discretion of
28 federal and state natural resource agency representatives to attend pre-disturbance walkthroughs.

29 30 31 **3.15.11.5 Requests for Wildlife-Related Exclusions**

32
33 **Summary:** Several commentors wanted areas with a high level of biodiversity to be
34 excluded from development. Other commentors wanted particular habitat types (e.g., playas,
35 washes, wetlands, sagebrush habitats, grasslands, dunes, big game winter range, calving areas,
36 and water sources used by wildlife) or areas important for wildlife (e.g., House Rock Valley,
37 areas proposed for wilderness in America's Red Rock Wilderness Act, Kaibab-Paunsagunt
38 Wildlife Corridor, San Pedro River, areas with Habitat Management Plans) to be avoided or
39 protected.

40
41 **Response:** As identified in the Draft Solar PEIS and the Supplement to the Draft Solar
42 PEIS, many areas considered to be biologically important are excluded from solar energy
43 development, including but not limited to designated critical habitats, WAs, and ACECs
44 (see Table 2.2-2 in this Final Solar PEIS). While it is not possible to exclude all areas that may
45 provide potentially important habitats for wildlife species at a programmatic level, the BLM
46 (in conjunction with the USFWS and NPS) continued to consider proposed additional exclusion

1 areas throughout the preparation of the Final Solar PEIS and excluded approximately an
2 additional 3 million acres (12,147 km²) from development that were not proposed for exclusion
3 in the Draft Solar PEIS or in the Supplement to the Draft Solar PEIS. Excluded areas include
4 greater sage-grouse and Gunnison's sage-grouse habitat in California, Nevada, and Utah.
5

6 Throughout the Solar PEIS it is stated that, at the project level, pre-disturbance surveys
7 would be required to determine the presence of important wildlife habitats in the vicinity of a
8 proposed solar energy project. Programmatic and SEZ-specific design features have been
9 developed to avoid, minimize, and/or mitigate impacts on wildlife and their habitats. Additional
10 pre-disturbance evaluations will be required at the project level, and any necessary minimization
11 or mitigation measures will be determined in consultation with the appropriate state and federal
12 agencies
13
14

15 **3.15.11.6 Cumulative Impacts Related to Wildlife** 16

17 **Summary:** These comments requested that both cumulative impacts and landscape-scale
18 analyses be given more consideration (including assessing impacts throughout the six-state
19 region as a whole). For example, it was requested that the cumulative impacts from solar and
20 wind energy projects, their associated transmission infrastructure, other developments on private
21 and other federal lands, other uses of public lands, and population growth be considered in
22 addition to just solar energy development on the SEZs. Landscape-scale analyses that would
23 allow solar energy development to be more accurately assessed and that would allow areas most
24 suitable for solar development to be more accurately determined (e.g., by selecting areas with
25 less ecological value) were requested.
26

27 **Response:** The programmatic cumulative impact analysis in the Draft Solar PEIS and
28 the Final Solar PEIS considered the impacts of solar development up to the RFDS level, in
29 conjunction with other ongoing and reasonably foreseeable actions in the study area. The BLM
30 expects to make planning-level decisions through the Solar PEIS, such as land use designations
31 and design features. The program elements adopted via planning-level decisions will provide the
32 basis for future project-specific utility-scale solar energy development decisions. The Solar PEIS
33 appropriately evaluates the potential direct, indirect, and cumulative environmental, social, and
34 economic effects of establishing broad Solar Energy Program elements and strategies across the
35 six-state study area. Because the proposed program involves environmental effects over a broad
36 geographic and time horizon, the depth and detail of the impact analysis are fairly general,
37 focusing on major impacts in a qualitative manner.
38

39 For the SEZs the cumulative impact analysis is somewhat more specific, considering all
40 proposed renewable energy projects that have a good probability of being constructed (defined as
41 projects having firm near-term plans and environmental documentation). Any additional analyses
42 required to determine direct or indirect impacts beyond the 5-mi (8-km) buffer (area of indirect
43 effects), such as those that may occur from desert tortoise translocation, will be determined at the
44 project-specific level. Section A.2.6 of Appendix A of this Final PEIS includes discussion of
45 utilizing landscape level assessments for the identification of new SEZs in the future.
46

1 **3.15.11.7 Species Status Updates for Wildlife**
2

3 **Summary:** Several commentors requested that additional wildlife species be listed as
4 occurring in one or more of the SEZs, while other commentors believed that some species were
5 incorrectly listed (e.g., the species does not occur in the area in which an SEZ would be located).
6 One commentor believed that biological resource information considered in proposed or
7 permitted solar energy projects near SEZs should be used when the evaluation of impacts for
8 the SEZs is updated. Other commentors believed that the common raven should not have been
9 evaluated as one of the representative bird species affected by solar energy development. In
10 particular, it should not be listed as a focal species, unless mention is made of it being a predator
11 on desert tortoises and other species. It was also suggested that a raven management plan should
12 be prepared to counteract possible increases in raven populations from solar energy
13 development.
14

15 **Response:** Some of the species requested to be added to the wildlife sections for the
16 SEZs in the Draft Solar PEIS included special status species. Those species were already are
17 addressed in a separate sections of the Draft Solar PEIS. For example, Section 8.1.11.3 addresses
18 the mammal species for the Brenda SEZ, except for those that are special status species. Those
19 mammal species were addressed in Section 8.1.12 of the Draft Solar PEIS. In addition, it was not
20 practicable to address all wildlife species that may occur at a given SEZ. Appendix M of the
21 Draft Solar PEIS describes the procedures used to select representative species that were
22 analyzed. An errata was presented in the Final Solar PEIS for any species that should not have
23 been considered for a particular SEZ. The common raven is a focal species of concern. The text
24 in the Draft Solar PEIS was modified to state that this is due to it being a predator of the desert
25 tortoise and other species. Several of the programmatic design features listed in Section A.2.2.11
26 of Appendix A of the Final Solar PEIS include mitigation measures regarding the common
27 raven. More detailed information regarding the occurrence of wildlife species will be determined
28 at the project-specific level in coordination with the appropriate state and federal agencies.
29
30

31 **3.15.11.8 Additional Information on Wildlife**
32

33 **Summary:** Several commentors requested that the following subjects be addressed in the
34 Final Solar PEIS: habitat loss and dust impacts during construction, increases in avian mortality,
35 impacts on big game and game birds by solar development, protections afforded to golden
36 eagles, risk of fire, wildlife exposure to contaminants, impacts from vehicles, impacts from solar
37 power towers, and the potential for increase in predators and invasive species. One commentor
38 wanted maps in the Final Solar PEIS that identify potential priority areas for habitat protection
39 and restoration.
40

41 **Response:** The information requests made in the comments are all items that are included
42 in either the Draft Solar PEIS or the Final Solar PEIS.
43
44

3.15.11.9 Design Features for Wildlife

Summary: While some commentors expressed appreciation for the number of design features listed in the Draft Solar PEIS to avoid, minimize, and/or mitigate adverse impacts on wildlife; some commentors listed additional mitigation measures that should be considered. Others also wanted some of the programmatic design features to be better defined or expanded. Some commentors stated that certain design features should either (a) apply only if special status species or other sensitive wildlife are present (rather than as a general design feature that applies to all wildlife species, e.g., use of escape ramps) or (b) be determined on a case-by-case basis (e.g., use of solid barriers in the lower portion of fences to exclude amphibians and other small animals). Others commentors expressed their concerns that some design features may have only partial effectiveness (e.g., seasonal restrictions on site clearing during construction could still result in habitat loss). Some commentors wanted adaptive management to be an integral component of mitigation.

Response: The design features identified in Section A.2.2 of Appendix A of this Final Solar PEIS are programmatic design features, adopted from the mitigation measures identified in Chapter 5 of the Draft Solar PEIS. These design features will be required for any solar energy project under the BLM Solar Energy Program. The wording of some of the ecological resources design features in Section A.2.2.11 of Appendix A has been modified from that presented in the Draft Solar PEIS based on comments received. Because of site-specific circumstances, some programmatic design features may not apply at some projects and/or may require slight variations. Applicants will be required to discuss any proposed variations with BLM staff. All variations in programmatic design features will require appropriate analysis and disclosure as part of future project authorizations. It is anticipated that variations in the design features presented will be approved in very limited circumstances.

Specific details on applying the programmatic design features will be developed at the project level and coordinated through the appropriate agencies. Many design features are related to required plans that will be reviewed and approved by the BLM. Some of the requested additions are a part of other design features. The design features were developed for the protection of ecological resources; the design features as presented in the Final Solar PEIS will protect those resources, and additional modifications would not substantively add to resource protection. It is expected that required pre-disturbance surveys will identify species and habitats of concern in the project area (where applicable), the need for additional surveys, quantitative significance criteria, and specific mitigation requirements (including the need for avoidance, buffers, minimization measures, and compensatory mitigation). The most current guidance and BMPs will be applied at the time a project is proposed.

3.15.11.10 Habitat Fragmentation

Summary: A number of commentors expressed concern that solar energy development would fragment intact habitats or prevent wildlife movement to sources of water or forage and between seasonal ranges. Other commentors expressed concern that solar energy development could block wildlife corridors that, in extreme cases, could prevent genetic exchange among

1 wildlife populations. Overall, these comments stress that corridors adequate for wildlife
2 movement should be maintained.

3
4 **Response:** Potential impacts on wildlife from habitat fragmentation and the loss of
5 movement corridors are addressed in Sections 5.10.2.1.2 (construction) and 5.10.2.1.3
6 (operations) of the Draft Solar PEIS. Changes to the SEZs (including the elimination of several
7 SEZs from further consideration, changes in the boundaries of the SEZs, and establishment of
8 non-development areas within the SEZs) described in the Supplement to the Draft Solar PEIS
9 were made in part to avoid or minimize fragmentation of wildlife habitats. Many of the
10 programmatic design features for ecological resources (Section A.2.2.11 of Appendix A) will
11 work toward avoiding, minimizing, or mitigating impacts of habitat fragmentation and the loss of
12 wildlife movement corridors. In addition, for the largest SEZ (Riverside East), an SEZ-specific
13 design feature was included in the Final Solar PEIS requiring that two wildlife movement
14 corridors be identified as non-development areas within the SEZ.

15 16 17 **3.15.11.11 Habitat Loss and Species Displacement**

18
19 **Summary:** Some comments expressed concern that habitat loss within the SEZs would
20 have significant impacts on the distribution and numbers of big game species, particularly if
21 important habitats are affected (e.g., crucial winter habitats, calving areas, and water sources).
22 Comments stated that displacement of big game could make management of wildlife species
23 more difficult and that species that are displaced could also experience increased physiological
24 stress.

25
26 **Response:** Potential impacts on wildlife from habitat loss and disturbance are addressed
27 in Sections 5.10.2.1.2 (construction) and 5.10.2.1.3 (operations) of the Draft Solar PEIS.
28 Changes to the SEZs (including the elimination of several SEZs from further consideration,
29 changes in the boundaries of the SEZs, and establishment of non-development areas within the
30 SEZs) described in the Supplement to the Draft Solar PEIS were made in part to avoid or
31 minimize impacts on wildlife habitats. Many of the programmatic design features for ecological
32 resources (Section A.2.2.11 of Appendix A) will work toward avoiding, minimizing, or
33 mitigating impacts on wildlife habitats and associated wildlife displacement.

34 35 36 **3.15.11.12 Impacts of Power Towers on Birds**

37
38 **Summary:** These comments opposed power towers because of their potential impacts on
39 birds, which could fly through the concentrated (superheated) beams.

40
41 **Response:** Section 5.10.2.1.3 of the Draft Solar PEIS discussed the potential impacts on
42 birds from the operation of power towers. Ecological monitoring would be required during the
43 operation of all solar energy facilities. If it is noted that birds, or any special status bird species,
44 are being killed by contact with concentrated beams reflected to a power tower, the qualified
45 biologist for the project would need to consult with the appropriate federal or state agencies to
46 determine whether any appropriate actions (mitigation) would need to be taken. As indicated in

1 several of the programmatic design features for ecological resources (Section A.2.2.11 of
2 Appendix A), adaptive management strategies shall be established at the project level to ensure
3 that potential adverse impacts are mitigated.
4

5 6 **3.15.12 Ecological Resources: Aquatic Biota**

7 8 9 **3.15.12.1 Ephemeral Aquatic Habitats**

10
11 **Summary:** The commentors emphasized the ecological importance of ephemeral surface
12 water features in desert ecosystems. They also recommended that the BLM include analysis of
13 potential impacts from solar development on ephemeral habitat, as well as measures to avoid,
14 minimize, or mitigate such impacts, in the Final Solar PEIS. Comments also recommended the
15 collection of baseline data on the ephemeral wash environment at specific project locations
16 before any development would take place.
17

18 **Response:** The potential for impacts on aquatic biota is described in detail in
19 Section 5.10.3 of the Draft Solar PEIS and the Final Solar PEIS and referred to in SEZ-specific
20 sections. Additional information on the biota inhabiting ephemeral surface water features has
21 been added to Section 4.10.3 of the Final Solar PEIS. SEZ-specific information was added to
22 the SEZ updates sections (Chapters 8 through 13 of this Final Solar PEIS) when the data were
23 available. Further site-specific information will be collected on a project-specific basis.
24 Section A.2.2.11 of Appendix A presents required design features to minimize and mitigate
25 impacts on intermittent and ephemeral surface water features. These design features specifically
26 state that facilities should be sited in locations that minimize impacts on surface water bodies,
27 ephemeral washes, playas, and natural drainage areas (including groundwater recharge areas).
28
29

30 **3.15.12.2 Effects of Water Use on Aquatic Habitats**

31
32 **Summary:** The comments in this category mainly dealt with the Draft Solar PEIS.
33 Commentors stated that the Draft Solar PEIS did not contain enough analysis of the direct or
34 cumulative impacts of water use on fish and wildlife and their habitats within each SEZ, stating
35 simply that impacts depend on the water source, the amount of water withdrawn, and the
36 organisms present. Requests for more detailed analysis were also received, such as analysis of
37 the impacts of groundwater withdrawals on spring, riparian, and aquatic species within the Death
38 Valley, White River, Virgin River Valley, and Meadow Valley Wash Regional Flow Systems.
39 One commentor stated that avoidance of water withdrawals should not be required if it can be
40 shown that the impact is not significant.
41

42 **Response:** The potential for impacts on aquatic biota from water withdrawals is
43 addressed in detail in Section 5.10.3 of the Draft Solar PEIS and the Final Solar PEIS and
44 referred to in SEZ update sections (Chapters 8 through 13 of this Final Solar PEIS).
45 Section A.2.2.11 of Appendix A presents design features required to minimize and mitigate
46 impacts on aquatic biota from water withdrawal.

1 **3.15.12.3 Design Features for Aquatic Biota**
2

3 **Summary:** Some commentors recommended complete avoidance of wetlands and
4 ephemeral surface water features, and others recommended avoidance only to the extent
5 practicable. The EPA recommended that impacts on aquatic resources be minimized regardless
6 of CWA Section 404 jurisdiction and that the language used to describe the design features
7 related to aquatic resources be strengthened and made compulsory for all projects wherever it
8 is practicable to do so. EPA also recommended that BLM's approval criteria be modified to
9 incentivize avoidance of aquatic resources, e.g., by prioritizing review of, and giving preference
10 to projects on sites identified as having minimal presence of aquatic resources. Several
11 mitigation measures were recommended for reducing inter-stream transfer of aquatic nuisance
12 species (specifically stating a concern for Chytrid fungus), and reducing impacts on aquatic biota
13 at stream crossings.
14

15 **Response:** The potential for impacts on wetlands and water quality from solar energy
16 development are addressed in detail in Section 5.9 of the Draft and Final Solar PEIS, and
17 referred to in SEZ update sections (Chapters 8 through 13 of the Final Solar PEIS).
18 Section A.2.2.10 of Appendix A of the Final Solar PEIS presents required design features to
19 minimize and mitigate for impacts on wetlands and water quality impacts. These measures
20 specifically state that facilities should be sited in locations that minimize impacts on surface
21 water bodies, ephemeral washes, playas, and natural drainage areas (including groundwater
22 recharge areas). All surface water features including non-CWA Section 404 jurisdictional
23 waters are required to be avoided to the extent practicable. Decontamination of equipment used
24 in surface water to avoid the transfer of nuisance aquatic species would be addressed under the
25 programmatic design features. Specific mention of Chytrid fungus and invasive mussels has
26 been added to Section 5.10.3.1.1 of the Final Solar PEIS.
27
28

29 **3.15.13 Ecological Resources: Special Status Species**
30

31
32 **3.15.13.1 Policy and Regulations for Special Status Species**
33

34 **Summary:** These comments include questions on the implementation of the new solar
35 program with respect to policies and regulations that impact special status species, such as the
36 Endangered Species Act (ESA), California DRECP, California ESA, California Desert
37 Conservation Act, the BLM Species Status Species Policy (BLM 6840), wildlife policy, and
38 conservation standards. Several comments request for BLM to actively protect sensitive species
39 on BLM-administered lands.
40

41 **Response:** The BLM's proposed Solar Energy Program under both action alternatives
42 employs a mitigation hierarchy to address potential impacts—avoidance, minimization, and
43 offset of unavoidable impacts. The BLM first employs avoidance and minimization strategies to
44 eliminate or reduce potential adverse impacts. For those impacts that are not fully avoided or
45 minimized, the BLM determines, in consultation with affected stakeholders, if any measures to
46 offset or mitigate adverse impacts would be appropriate. In addition, projects on

1 BLM-administered lands will be required to follow all applicable laws and regulations such as
2 the Endangered Species Act (ESA) which will result in additional measures that minimize
3 impacts. Other plans and policies have been considered where applicable. For example, the BLM
4 will request that variance applications submitted in the DRECP planning area be reviewed by the
5 REAT agencies to maintain consistency between the Solar PEIS and the DRECP's goals and
6 objectives. The landscape-level assessment methods of the BLM's ongoing rapid ecoregional
7 assessments and of the DRECP would be considered when applications in variance areas are
8 reviewed. Conversely, the DRECP would tier to the NEPA analysis in the Solar PEIS to the
9 extent practicable to take advantage of the work already completed in the CDCA planning area.

10
11 In accordance with *BLM Manual 6840*, the BLM is committed to conserving rare and
12 special status plant and animal species that occur on BLM-administered lands, as discussed in
13 Section 4.10.4 of the Draft Solar PEIS. The implementation of this policy, as well as any
14 supplements to this policy, will be carried out at the project level in consultation with the
15 appropriate state and federal agencies. Conservation standards would be identified on a project-
16 specific basis and in consultation with the appropriate federal and state natural resource agencies.
17 Additionally, programmatic and SEZ-specific design features have been identified in the Solar
18 PEIS to avoid or minimize impacts on special status species and their habitat.

19 20 21 **3.15.13.2 Design Features for Special Status Species**

22
23 **Summary:** Many commentors from various organizations representing industry, local
24 and state governments, utilities, environmental groups, and the general public requested that
25 changes be made in the programmatic design features for protection of special status species.
26 Some requested that the design features be made less restrictive to allow for site-specific
27 evaluation. Others requested that it should be emphasized that the programmatic design features
28 would be required for all projects on BLM-administered lands.

29
30 **Response:** The BLM has reviewed and revised the design features presented in the Draft
31 Solar PEIS, incorporating some of the changes suggested. Through the ROD for the Solar PEIS,
32 the proposed programmatic design features presented in Section A.2.2 of Appendix A of the
33 Final Solar PEIS will be required to be applied by the project applicants to all solar energy
34 applications submitted to the BLM for consideration. Because of site-specific circumstances,
35 some features may not apply to some projects and/or may require slight variations. Applicants
36 will be required to discuss any proposed variations with BLM staff. All variations in
37 programmatic design features will require appropriate analysis and disclosure as part of future
38 project authorizations. It is anticipated that variations in the design features presented will be
39 approved in very limited circumstances.

40
41 Specific details on applying the programmatic design features will be developed at the
42 project level and coordinated through the appropriate agencies. Many design features are related
43 to required plans that will be reviewed and approved by BLM. Some of the requested additions
44 are a part of other design features. The design features were developed for the protection of
45 ecological resources; the design features as presented in the Final Solar PEIS will protect those
46 resources and additional modifications would not substantively add to resource protection. The

1 implementation of several of the design features for special status species would require pre-
2 disturbance surveys for species and their habitat and consultation with the USFWS and other
3 agencies in order to determine appropriate buffer distances, monitoring requirements, timing
4 considerations, or other project-specific details. The most current guidance and best management
5 practices will be applied at the time a project is proposed.
6
7

8 **3.15.13.3 Requests for Exclusions Related to Special Status Species**

9

10 **Summary:** These comments include a discussion of habitats to be avoided; commentors
11 requested that such habitats be specifically designated as exclusion areas for the Solar Energy
12 Program. Requests for exclusions of specific areas for the protection of special status species
13 were received from several environmental groups, state and local agencies, and from the
14 U.S. Fish and Wildlife Service. Notably, many of the comments requested that linkage areas
15 for desert tortoise should be excluded.
16

17 **Response:** As stated in the Draft Solar PEIS, many areas considered to be biologically
18 important have been proposed for exclusion from solar energy development, including but not
19 limited to designated critical habitats, wilderness areas, and ACECs. While it is not possible
20 to exclude all areas that may provide potentially suitable habitat for sensitive species at a
21 programmatic level, the BLM (in conjunction with the U.S. FWSS and NPS) has continued to
22 consider proposed additional exclusion areas throughout the preparation of the Final Solar PEIS,
23 and has now excluded approximately 3 million additional acres from development that were not
24 proposed for exclusion in the Draft Solar PEIS or in the Supplement to the Draft. Excluded areas
25 include greater sage-grouse and Gunnison's sage-grouse habitat in California, Nevada, and Utah.
26

27 It is stated in many locations throughout the Solar PEIS that, at the project level, pre-
28 disturbance surveys would be required to determine the presence of special status species or their
29 habitats in the vicinity of a proposed solar energy project. Programmatic and SEZ-specific design
30 features have been developed to avoid, minimize, and/or mitigate impacts on special status
31 species. Additional pre-disturbance evaluations will be required at the project level and any
32 necessary minimization or mitigation measures will be determined in consultation with the
33 appropriate state and federal agencies.
34
35

36 **3.15.13.4 Additional Analyses Needed for Special Status Species**

37

38 **Summary:** These comments include a request for additional data, different, types of data,
39 or a different analytical approach. Some comments on the Draft noted that the comparison of
40 alternatives could not be done adequately until the analysis of all species with the potential for
41 being impacted under each alternative was complete.
42

43 **Response:** The analysis for all special status species with the potential for being
44 impacted under each alternative was completed and presented on the Solar PEIS Web site along
45 with the Supplement to the Draft Solar PEIS, thus allowing public comments. The updated

1 version of Appendix J comparing impacts on all species across the alternatives has been included
2 in the Final Solar PEIS.

3
4 Impacts on special status species from development in the SEZs, including those listed
5 under the ESA, were determined best available information by estimating the amount of
6 potentially suitable habitat within assumed direct and indirect impact footprints relative to the
7 estimated availability in the region. It was not possible to conduct a more detailed site-specific
8 analysis for each species given the large areas involved and uncertainty in exact project
9 locations. The Draft Solar PEIS acknowledged the limitations in the analysis assumptions
10 (see 3.M.12 in Appendix M for methodologies and assumptions). As stated in Appendix M, the
11 analysis relied on available data, such as GAP land cover and habitat suitability maps, rather than
12 site-specific survey information, deferring such site-specific information requirements to projects
13 that are at the plan of development stage. There are too many uncertainties to allow for a more
14 quantitative analysis at the programmatic level. Greater specification in mitigation requirements,
15 impact significance determinations, and measurable standards of protection is also deferred to
16 specific project assessments that would be developed in consultation with state and federal
17 natural resource management agencies. It is expected that this consultation process will identify
18 species and habitats of concern in the project area, the need for additional survey, quantitative
19 significance criteria, and specific mitigation requirements (including the need for avoidance,
20 buffers, minimization measures, compensatory mitigation, and translocation).

21 22 23 **3.15.13.5 Pre-disturbance Surveys for Special Status Species**

24
25 **Summary:** A number of comments addressed the need for field surveys to determine
26 species distributions relative to potential development areas. Several comments stated the known
27 or likely presence of certain special status species in SEZs as a matter of concern, and questioned
28 whether the identification of such species during future pre-disturbance surveys would mean the
29 habitat area would be identified as a non-development area within the SEZ.

30
31 **Response:** As identified in the Draft Solar PEIS, SEZ-specific design features include the
32 requirement to complete pre-disturbance surveys to determine the presence of special status
33 species and their habitats, including unique habitats such as sand dunes, washes, playas and dry
34 lakes, and forests. If these species or their habitats are known to occur within an SEZ, then the
35 design features require additional consultation with state and federal agencies to determine
36 appropriate mitigation measures, which may include avoidance of potentially suitable habitats.

37
38 Programmatic measures pertaining to pre-disturbance surveys are presented in
39 Section A.2.2.11 of Appendix A of the Final Solar PEIS. It was not practical to conduct complete
40 field surveys throughout each SEZ prior to the Draft Solar PEIS, given the large size and number
41 of the SEZs and the variable nature of species occurrences in space and time. These surveys need
42 to be completed just prior to development of specific locations, thus, surveys for the Solar PEIS
43 would not have necessarily been useable for future projects within SEZs. As such, the detailed
44 information on the location of species and their habitats within SEZs needed for a complete site-
45 specific evaluation was not available for the Solar PEIS analysis. The available existing spatial
46 data (e.g., GAP models and natural heritage data) were appropriate and provide a good starting

1 point for future surveys to identify many of the special status species possibly present within
2 SEZs. More detailed evaluations will be developed at the project level in consultation with
3 appropriate state and federal agencies. The identification of a special status species within an
4 SEZ does not necessarily mean that the habitat area would be identified as a non-development
5 area; the programmatic design features for ecological resources lay out options for such an
6 occurrence including avoidance, minimization, and offsetting of the adverse impacts on such
7 species (see Mitigation Hierarchy in Section A.2.5 of Appendix A, the framework for regional
8 mitigation plans).

3.15.13.6 Cumulative Impacts on Special Status Species

13 **Summary:** These comments largely included discussions on cumulative impacts on
14 special status species. Similarly, some of the comments requested that the Solar PEIS look at
15 impacts on a landscape-level.

17 **Response:** The programmatic cumulative impact analysis in the Draft and Final Solar
18 PEIS considered the impacts of solar development up to the RFDS level, in conjunction with
19 other ongoing and reasonably foreseeable actions in the study area. The BLM proposed Solar
20 Energy Program under both action alternatives employs a mitigation hierarchy to address
21 potential impacts—avoidance, minimization, and offset of unavoidable impacts. The BLM first
22 employs avoidance and minimization strategies to eliminate or reduce potential adverse impacts.
23 For those impacts that are not fully avoided or minimized, the BLM determines, in consultation
24 with affected stakeholders, whether any measures to offset or mitigate adverse impacts would be
25 appropriate.

27 For the SEZs the cumulative impact analysis is somewhat more specific, considering all
28 proposed renewable energy projects that have a good probability of being constructed (defined as
29 projects having firm near-term plans and environmental documentation). Any additional analyses
30 required to determine direct or indirect impacts beyond the 5-mi (8 km²) buffer (area of indirect
31 effects), such as those that may occur from desert tortoise translocation, will be determined at the
32 project-specific level.

3.15.13.7 Section 7 Compliance

37 **Summary:** These comments discuss ESA Section 7 compliance. These comments
38 request formal consultation with the USFWS or request the Biological Assessment (BA) or some
39 aspects of the BA be included in the Final Solar PEIS.

41 **Response:** The BLM is currently engaged in ESA consultation on the Solar PEIS with
42 the USFWS under Sections 7(a)(1) and 7(a)(2) of the ESA. The BLM, in consultation with the
43 USFWS, is undertaking a conservation review pursuant to Section 7(a)(1) of the ESA on the
44 overall Solar Energy Program, including the amendment of 89 land use plans and associated
45 conservation measures. This consultation on the overarching program will provide guidance for

1 subsequent solar projects by ensuring that the appropriate conservation measures for listed
2 species are incorporated into project-level actions.

3
4 The BLM is also engaged in programmatic consultation with the USFWS on the
5 identification of SEZs under Section 7(a)(2) of the ESA initiated through the submission of a
6 programmatic BA. This BA describes potential effects on listed (endangered and/or threatened)
7 species and designated critical habitat from expected solar development in SEZs and any
8 appropriate mitigation, minimization, and avoidance measures. Further Section 7(a)(2)
9 consultation will occur, as necessary, at the level of individual solar energy projects and will
10 benefit from the preceding programmatic consultation and resulting programmatic Biological
11 Opinions (BOs) for SEZs.

12
13 As individual projects are proposed in SEZs under the programmatic consultation
14 approach, project-specific information will be provided that (1) describes each proposed action
15 and the specific areas to be affected; (2) identifies the species and critical habitat that may be
16 affected; (3) describes the anticipated effects from the proposed project; (4) specifies whether
17 the anticipated effects from the proposed project are consistent with those analyzed in the
18 programmatic BO; (5) describes proposed measures to minimize potential effects of the action;
19 and (6) describes additional effects, if any, not considered in the programmatic consultation. The
20 USFWS will review this information and, if applicable, will complete a BO that includes a
21 project-specific incidental take statement. This document will generally require less effort to
22 complete, compared to the standard Section 7(a)(2) consultation, because of the ability to utilize
23 the analysis in the programmatic BO.

24 25 26 **3.15.13.8 Translocation of Special Status Species**

27
28 **Summary;** These comments contain specific requests or discussion regarding
29 translocation procedures. Most of these comments pertain to the desert tortoise and the
30 inadequacy, inappropriateness, and other risks of translocation.

31
32 **Response:** Measures to mitigate impacts on sensitive species are discussed in Chapters 5
33 and Section A2.2 of Appendix A. Translocation is mentioned as only one option for mitigating
34 impacts. It is stated in the Solar PEIS that the need for mitigation will be determined at the
35 project level in consultation with the necessary state and federal agencies following the results
36 of pre-disturbance surveys for species and their habitats in the SEZ affected areas. At this
37 project-specific stage the necessary avoidance, minimization, and mitigation measures will be
38 determined (which may include avoidance, project re-location, translocation, and/or other
39 measures such as protection of other lands to offset habitat losses). If translocation is selected as
40 an option for mitigating impacts, consultation with the necessary state and federal agencies will
41 be required to determine the appropriate handling, transport, and monitoring of translocated
42 individuals. The experimental nature and potential problems associated with translocation for
43 some special status species (e.g., desert tortoise) are described in Section 5.10.4 of this Final
44 Solar PEIS.

1 **3.15.13.9 Updates to Species, Status, and Distribution**

2
3 **Summary:** Several comments requested updated status information or inclusion of
4 additional species. These comments also include requests to include specific data regarding the
5 distribution or potential occurrence of individual species (information that is provided in
6 Appendix J of the Final Solar PEIS).

7
8 **Response:** Revisions or updates to the number and status of special status species were
9 provided in the Final Solar PEIS in the updated Appendix J, following the approach outlined in
10 Appendix M. The Draft and Final Solar PEIS acknowledge the uncertainty in determining
11 species potential occurrences in the SEZ affected areas, stating that these species are either
12 known to occur or may have suitable habitat in areas that could be affected by solar energy
13 development. When available, more detailed information regarding species' distributions was
14 provided for the Final Solar PEIS, both in Appendix J and in the SEZ-specific sections. More
15 detailed information regarding the local abundance and distribution of special status species will
16 be determined at the project-specific level in coordination with the appropriate state and federal
17 agencies.

18
19
20 **3.15.13.10 Mitigation and California Fully Protected Species**

21
22 **Summary:** Several comments identified the inaccuracy in developing minimization
23 measures or mitigation measures for California fully protected species. Under California Fish
24 and Game Codes, take of these species is prohibited. The text will be revised accordingly.

25
26 **Response:** The BLM is aware that take of California fully protected species is prohibited
27 under the (California Endangered Species Act (CESA)). The SEZ-specific design features in
28 Sections 9.1.12.3 and 9.4.12.3 were revised to state that habitats for California fully protected
29 species should be avoided.

30
31
32 **3.15.14 Air Quality Impacts and Climate**

33
34
35 **3.15.14.1 Carbon Balance and GHGs**

36
37 **Summary:** Several comments questioned the analysis of carbon sequestration and release
38 in soils and biomass, particularly the release of carbon from disturbed soils such as caliche,
39 which have been shown to be effective sinks of carbon. Others claimed that the loss of carbon
40 sequestration by ecosystems and desert soils had not been addressed in the Draft Solar PEIS.

41
42 Other comments noted that the emissions of SF₆ from vehicle use and construction had
43 not been considered.

44
45 **Response:** The release and capture of carbon in soils and biomass is discussed at an
46 appropriate programmatic level in Section 5.11.4 as part of the air quality analysis for GHGs.

1 Potential impacts of soil-disturbing activities including construction operations are described in
2 Section 5.7.4 along with mitigating measures. SEZ-specific impacts would be evaluated as part
3 of the project-level NEPA review once the proposed site has been characterized and project plans
4 including the extent of potentially disturbed areas are known.
5

6 Emissions from construction equipment and vehicle use would be small in comparison to
7 the emissions potentially avoided by a solar power plant and, for that reason, were neglected in
8 this programmatic level analysis. Text has been added to Section 5.11.4 stating that these
9 emissions were neglected.
10

11 The text in Section 5.11.4 has been updated for this Final Solar PEIS to note that the
12 BLM will require the use of dielectrics with lower global warming potentials than SF₆ in most
13 projects. The corresponding programmatic design feature with this requirement is included in
14 Section A.2.2.22 of Appendix A.
15

16 **3.15.14.2 Use of Outdated Data**

17

18
19 **Summary:** Several comments noted that the National Ambient Air Quality Standards
20 (NAAQS) and nonattainment area designations have changed since the Draft Solar PEIS was
21 written. Other comments noted that the statewide emissions data may have changed since the
22 publication of the Draft. One comment recommended including monitoring data from the
23 IMPROVE site and EPA's Chemical Speciation Network.
24

25 **Response:** Table 4.11-4 has been updated to reflect changes in the NAAQS that occurred
26 between the Draft and Final Solar PEIS, and Figure 4.11-4 showing nonattainment areas has
27 been updated to reflect changes in nonattainment areas. The only nonattainment change
28 potentially affecting an SEZ was the change in Clark County, Nevada, from a nonattainment area
29 to a maintenance area for CO, and CO is almost exclusively related to mobile sources and not
30 likely to be an issue for solar energy facilities. In addition, Table 4.11-5 was updated to include
31 the recently promulgated Prevention of Significant Deterioration (PSD) increments for PM_{2.5}.
32

33 The statewide emissions in Table 4.11-3 of the Draft Solar PEIS were not updated. The
34 CO₂ emissions in the Draft Solar PEIS were used as the basis for the discussion of potentially
35 avoided emissions in the SEZ-specific sections of the Solar PEIS and were left unchanged for
36 consistency. The more recent criteria pollutant emissions data available from the Western
37 Regional Air Partnership (WRAP) are still preliminary and likely to change when finalized.
38

39 Several figures were added to Section 4.11.2.4 to present visibility information from the
40 IMPROVE network. Chemical Speciation Network (CSN) data were not added; these data were
41 not available in summarized form and would have required extensive analysis. When a specific
42 project is proposed, it will be necessary to obtain CSN data to support the visibility analysis
43 needed for the project-specific NEPA analysis.
44
45

1 **3.15.14.3 Avoided Emissions**
2

3 **Summary:** Several comments considered the use of *displaced* to be misleading when
4 speaking of “the fossil emissions displaced by solar power,” noting that there is unlikely to be a
5 1:1 swap of solar power for fossil fuel–generated power. Many factors such as capital
6 investment, rising electricity demand, and the willingness of rate payers to pay higher electric
7 costs would determine how power generation would be distributed. Other comments noted that
8 construction, transmission, and disruption of carbon-sequestering soils could, if taken into
9 account, reduce the net GHG benefit accruing to solar electric generation in the Solar PEIS.

10
11 **Response:** The BLM agrees that the use of the term *displaced* could be misleading.
12 Updates to the cumulative effects and SEZ-specific sections of this Final Solar PEIS used the
13 term *avoided* instead of *displaced* and language denoting that the estimates presented represent
14 maximum avoided emissions that may or may not occur. Section 5.11.4 of the Draft Solar PEIS,
15 which describes the procedure used to make the estimate, notes that “The actual magnitude of
16 emissions avoided would depend on many factors determining the generation and distribution of
17 electricity.” Section 5.11.4 was similarly updated (in the Errata section) to use *avoided* instead of
18 *displaced* and to clarify that the quantitative estimates are maxima.

19
20
21 **3.15.14.4 General Conformity with State Implementation Plans**
22

23 **Summary:** Several comments noted the need to address general conformity for
24 individual SEZs and to specify in detail how an applicability analysis would be conducted.

25
26 **Response:** Text was added to Section 4.11.2.5, General Conformity, to reference the
27 latest general conformity regulations promulgated between the Draft and Final Solar PEIS and to
28 note that the BLM will satisfy the requirements of these regulations. At this programmatic level,
29 it would be premature to specify in detail how an applicability analysis would be conducted,
30 because there are several approaches available under the regulation. Without a specific project
31 having been proposed for a particular SEZ, an analysis cannot be conducted in a meaningful
32 manner, because the basic emissions information needed to support the analysis are unavailable.

33
34
35 **3.15.14.5 Design Features for Air Quality**
36

37 **Summary:** Several comments suggested changing the wording of several specific
38 features to clarify that they might not be needed in all situations. One comment suggested that all
39 solar energy projects demonstrate a net carbon reduction benefit. Other comments suggested
40 both site-specific and general mitigation measures or approaches, stressed the need to minimize
41 soil disturbance, dust and impacts on vegetation and the need to minimize impacts where such
42 impacts are unavoidable, requested that mitigation measures be as detailed as possible,
43 recommended using an adaptive management plan, recommended developing mitigation
44 measures outside the facility footprint, questioned how plans will be implemented given over
45 the large developed areas, and questioned how much water would be used for dust control.

1 **Response:** Appropriate suggested wording changes for specific design features were
2 incorporated in Section A.2.2 of Appendix A. The issue of carbon reduction benefit is addressed
3 in Section 5.11.4 in the Draft Solar PEIS, and no update is needed.
4

5 Section A.2.2.12 of Appendix A contains extensive programmatic design features that
6 would apply to all solar energy development projects designed to mitigate or avoid impacts on
7 air quality and climate. Variations in these design features are allowed to account for project-
8 specific or SEZ-specific conditions. In addition, a project-specific dust abatement plan is
9 required. Many of the measures in this plan as well as the programmatic design features for
10 avoiding or mitigating impacts on soil resources in Section A.2.2.8 of Appendix A will also
11 reduce dust emissions. Additional mitigations, some of which could be project-specific, may
12 be identified as part of the ROW application process. All plans must be approved by the BLM
13 at a level of detail deemed appropriate by the agency prior to granting an ROW. The BLM is
14 developing a long-term monitoring plan and will require development and implementation of
15 an adaptive management plan as well as requiring individual projects to incorporate adaptive
16 management strategies to avoid, mitigate, or minimize adverse impacts from solar energy
17 development. No update is needed.
18

19 Water use for dust control during construction is quantified Sections 9.3 in the SEZ-
20 specific chapters of the Draft Solar PEIS. Water use for dust control during operations is not
21 likely to be available.
22

23 24 **3.15.14.6 Consistency of Results** 25

26 **Summary:** One comment questioned why 9,000 acres (36.4 km²) of solar development
27 in Dry Lake Valley North resulted in lower modeled particulate concentrations than 6,000 acres
28 (24.3 km²) of solar development in Delamar Valley.
29

30 **Response:** No update was required to address this comment. There are other factors that
31 influence the modeled concentrations. The two most likely factors to cause the perhaps
32 unexpected results referred to are differences in the shapes of the two areas and the configuration
33 of the sources and modeled receptors with respect to the wind. The high concentrations noted in
34 the Draft Solar PEIS occur close to the source where these differences would have the greatest
35 impact on concentrations. Far from the source area, these differences would have less impact,
36 and far enough away, modeled concentrations would be less for Delamar Valley than for Dry
37 Lake Valley North.
38

39 40 **3.15.14.7 Project-Specific Air Quality Comments** 41

42 **Summary:** Comments expressed concern with potential fugitive dust impacts in Phoenix
43 and the need to avoid increases in ozone and PM₁₀ levels given that nonattainment areas exist in
44 Maricopa County.
45

1 Other comments expressed concern that solar development in Amargosa Valley may
2 block winds that feed Big Sand Dunes and recommended that a study should be included in the
3 Final Solar PEIS to evaluate the effect upon sand transport and to develop mitigation measures if
4 large areas are fenced. One comment expressed concern over the cumulative impact of the Eagle
5 Mountain dump and solar energy development.
6

7 **Response:** No update is required. At the programmatic level, the Draft Solar PEIS
8 discusses the potential air impacts of solar development in the proposed Gillespie SEZ. The
9 approach taken is to screen based on maximum impacts based on general data.
10

11 Section 5.7 of the Final Solar PEIS deals with sand transport and notes that studies would
12 need to determine whether construction and operation of a solar facility within a proposed SEZ
13 would affect the eolian processes that maintain Big Sand Dune. These studies would need to be
14 conducted on a project-specific basis when detailed information, including whether fencing
15 would be used, is available.
16

17 If a specific solar development project is proposed, part of the project-specific NEPA
18 review will be a cumulative air impact analysis of the proposed project in conjunction with other
19 sources including, as appropriate, the Eagle Dump. Similar considerations would also be
20 required during the air permitting process required by air regulatory agencies.
21

22 When a specific project is proposed and detailed data are available, project-level NEPA
23 reviews will examine these impacts in detail in conjunction with analyses required by regulatory
24 agencies.
25
26

27 **3.15.14.8 Desert Pavement and Biological Soil Crusts**

28
29 **Summary:** Comments stated that the Draft Solar PEIS did not consider the effects of
30 disturbing desert pavement and biological soil crusts, both of which, if disturbed, can become
31 long-term sources of windblown dust, in analyzing air quality issues.
32

33 **Response:** Text in Sections 5.11.1.2 and 5.11.1.3 was updated to acknowledge the
34 importance of these fragile soils as sources of dust, noting that they should be avoided whenever
35 possible and that, once disturbed, they can become an ongoing source of dust. In addition, a
36 design feature requiring that these soils be avoided to the extent practicable has been added to
37 Section A.2.2.8.2 of Appendix A.
38
39

40 **3.15.14.9 Requests for Air Quality Monitoring**

41
42 **Summary:** The comments requested that particulate monitoring be included as a
43 programmatic design feature to aid in, among other things, evaluating dust control measures and
44 defining the extent of the dust control problem and that AIRNET monitors be installed in listed
45 communities.
46

1 **Response:** No update is required. Particulate monitoring would be required, at the
2 BLMs’ discretion, under the long term monitoring and adaptive management plan that the BLM
3 is developing and that will be required for each project. Under the BLM’s adaptive management
4 approach, results from the monitoring efforts would be used to evaluate the effectiveness of dust
5 control measures to determine whether additional measures would be necessary.
6

7 EPA and its partners already maintain the National Air Monitoring System/State and
8 Local Air Monitoring System (NAMS/SLAMS) network of air quality monitors in
9 3,150 locations. These monitors include population-oriented stations. There is no need to
10 provide additional monitoring as part of particular projects except if required as part of a BLM-
11 approved long-term monitoring plan. EPA and the states have the primary responsibility for
12 monitoring air quality in towns and cities.
13

14 **3.15.14.10 Request for Exclusions Related to Air Quality**

15 **Summary:** The comment requested that additional areas be excluded from solar
16 development in areas with highly erodible soils as determined in consultation with the
17 U.S. Department of Agriculture (USDA).
18

19 **Response:** No update is required. Between the Draft and Final Solar PEIS, BLM has
20 considered many additional factors including the erodibility of soils and consulted with various
21 agencies to determine additional areas that should be excluded from solar development. In
22 addition, USDA data were taken into account, as discussed in Section 4.7. USDA maps were
23 used to identify erodible soils within each SEZ. These maps and tables of the data are provided
24 in each SEZ section. Siting decisions for a particular project will take these data into account
25 when more detailed soil mapping and testing can be done in response to proposal of a specific
26 project in a specific SEZ.
27
28
29

30 **3.15.14.11 Issues Not Considered in Air Quality Analyses**

31 **Summary:** Comments claimed that six issues were not considered in the Draft Solar
32 PEIS: (1) the trucking of potable water to the project site during construction; (2) the air
33 pollution potential of biomass burning; (3) vehicle emissions and emissions from backup power
34 when the sun is not shining; (4) the contribution of windblown dust to visibility impairment;
35 (5) Albedo changes due to solar panels, and (6) release of radon gas when the soil is disturbed
36 around atomic test sites.
37
38

39 Several comments noted that the Solar PEIS should address impacts of low probability
40 events such as fire, explosions, natural disasters, and terrorism on solar facilities.
41
42

43 **Response:** (1) No update is required. The Water Resources sections of the SEZ-specific
44 chapters in the Draft Solar PEIS contain discussions and a summary table of water use giving
45 water consumption for potable uses and dust control.
46

1 (2) Burning of biomass is generally a short-term operation, and the quantities and
2 composition of the biomass to be burned would be specific to individual projects. These burns
3 would require open burning permits that typically would limit the quantities burned, the burning
4 would be limited to certain times of the day, or the meteorological conditions would be specified,
5 so that the burns occur only when dispersion conditions are good. Specific permit requirements
6 vary among jurisdictions. Consideration of biomass burning is better deferred to the project-level
7 analysis when estimates of the amount of biomass removed and the methods of disposal are
8 known. Biomass burning was acknowledged as a potential source of emissions in
9 Section 5.11.1.2.

10
11 (3) No update is required. Vehicle and equipment emissions are noted for both
12 construction (Section 5.11.1.2) and operations (Section 5.11.1.3). For both phases, the emissions
13 would be small and were neglected at this programmatic level of analysis. Emissions from any
14 backup power required would also be small if any. It is more likely that any backup power
15 needed would be taken from the electric grid during periods of low insolation. Emissions from
16 both sources would depend on the size and operational details of the project, which will be
17 available only when a specific project is proposed. Emissions from vehicles and construction
18 equipment and any backup or other combustion equipment proposed as part of a specific project
19 would be analyzed as part of the project-specific NEPA analysis and during the permit
20 application process.

21
22 (4) Effects on visibility will be project specific. Analysis of visibility impacts has been
23 deferred until detailed project-level data are available, at which time a visibility analysis will be
24 conducted at the BLM's discretion. Section 5.11 has been updated through the inclusion of a
25 discussion of visibility at the beginning of the section.

26
27 (5) No update is required. The Draft Solar PEIS discusses albedo effects in
28 Section 5.11.2.4.

29
30 (6) No update is required. Concentrations of radon vary substantially in different parts of
31 the country. The half-life of radon is only 3.8 days. Any additional radon released as a result of
32 ground disturbance would quickly disperse and disappear.

33
34 Low-probability events are discussed in Section 5.21.3. A short paragraph summarizing
35 these impacts has been added at the beginning of Section 5.11.1 of this Final Solar PEIS.

36 37 38 **3.15.14.12 Operational Fugitive Dust**

39
40 **Summary:** Comments expressed concern that dust control measures beyond those given
41 in the Draft Solar PEIS would be needed during the operations phase, particularly in areas to be
42 maintained free from vegetation; additional discussion was requested of soil stabilization
43 techniques that will be used during operations and information for SEZ-specific dust abatement
44 plans; and it was recommended windblown dust emissions be estimated based on more detailed
45 site-specific factors.

1 Several comments noted that dust from desert soils contains various toxic compounds,
2 such as arsenic and chromium. The potential effects of these compounds have not been assessed.
3 In addition, the problem of windblown dust causing early snowmelt has been ignored.
4

5 Comments noted that the BLM already has methodology for inventorying fugitive dust,
6 has used it for numerous projects, and could apply it to solar development as is required by the
7 NEPA process. In addition, the Draft Solar PEIS over-emphasizes project-level approaches and
8 does not consider regional issues in sufficient detail.
9

10 **Response:** Text has been added to Section 5.11.1.3 on operations to note that disturbed
11 soils can continue to be a long-term source of windblown dust. However, at this programmatic
12 level, using refined methods of estimating emissions is unwarranted, because the detained
13 information needed to make meaningful estimates is unavailable. When specific projects are
14 being evaluated for project-specific NEPA analyses and information on the types and acreages
15 of disturbed soils is available, more emission estimates will be made.
16

17 Section 4.11.4 has been added to discuss toxic dust and snowmelt.
18

19 The BLM recognizes that need for detailed dust inventories based on many unit activities
20 associated with solar development and operations. However, at the programmatic level, the
21 detailed activity levels needed for making these estimates are unavailable. The programmatic
22 EIS is only the first NEPA document required. When a specific project is proposed, detailed data
23 will be required and a detailed project-specific NEPA analysis will be undertaken. When such
24 specific details are available, the proposed project will be analyzed not only on a project-level
25 basis but also from a regional perspective.
26

27 **3.15.14.13 Requests for Additional Air Quality Analysis**

28 **Summary:** Comments (1) claimed that there was insufficient analysis of the deposition
29 of dust on plants, (2) claimed that there needed to be a range of modeled impacts based on the
30 vast are potentially opened to solar energy development under the preferred alternative, not just
31 limited to SEZs, and (3) objected to the lack of analysis of emissions from construction
32 equipment. Several comments suggested (4) that visibility should have been modeled and that
33 additional factors such as deposition should have been included in the AERMOD runs made in
34 the Draft Solar PEIS.
35
36

37 **Response:** (1), (2), and (3) No update is required. Potential impacts of dust deposition on
38 vegetation are provided in Section 5.10.1. The analysis in the Draft Solar PEIS deals with the
39 preferred alternative as presented. It is thus limited to the SEZs as proposed in the Draft Solar
40 PEIS as modified by the reductions in the sizes of some SEZs and the elimination of others
41 between the Draft and Final Solar PEIS. Emissions from construction equipment and vehicle use
42 would be relatively small and, for that reason, were not considered in this programmatic level
43 analysis. At the project-specific level of analysis, such emissions would need to be considered as
44 part of project-specific NEPA reviews and air permit applications. Text has been added to
45 Section 5.11.4 stating that these emissions have not been considered.
46

1 (4) The detailed level of visibility analysis suggested in the comments would require
2 information not available at this programmatic level. The BLM agrees that such modeling
3 analysis is needed to address visibility issues. When specific projects are proposed and the data
4 needed to support meaningful visibility modeling become available, the BLM may, at its
5 discretion, require visibility modeling using models such as CALPUFF. In addition, such
6 analyses, if required, will be conducted as part of any project-specific air permit applications.
7 Sections 5.11.1.2, 5.11.1.3, and 5.11.1.4 have been updated to indicate that visibility modeling
8 may be required.
9

10 Without any specific project having been proposed, the AERMOD analyses for fugitive
11 dust conducted for this Final Solar PEIS modeled the maximum impact that might be expected
12 under worst-case scenarios. Additional modeling will be required for specific projects as part of
13 the project-specific NEPA reviews and the air permit application process.
14
15

16 **3.15.15 Visual Resources**

17 18 19 **3.15.15.1 General Visual Resources Comments**

20
21 **Summary:** Comments expressed general concerns about potential visual resources
22 impacts. Commentors suggested that solar development would have the potential to create
23 negative impacts by devaluing popular destinations for hiking, camping, and OHV use; by
24 “downgrading” the attraction of scenic areas within the backcountry; and by harming the
25 “wide open feeling” associated with the Southwest.
26

27 **Response:** Regardless of the technologies employed for solar energy collection and
28 electricity production, utility-scale solar energy facilities involve substantial amounts of land
29 disturbance. The presence and operation of large-scale facilities and equipment would introduce
30 major visual changes into non-industrialized landscapes and could create strong visual contrasts
31 in line, form, color, and texture, especially where viewed from nearby locations or from elevated
32 viewpoints.
33

34 Compared with many other industrial developments (e.g., fossil fuel plants, mines, or
35 manufacturing facilities), solar energy facilities generally exhibit strong visual unity and
36 simplicity, attributes generally associated with positive visual quality, even though they may
37 introduce strong visual contrasts into natural-appearing landscapes. In some cases, some viewers
38 might find some utility-scale solar energy facilities to be attractive or interesting to view because
39 of the facilities’ strong visual unity and simplicity or other factors, such as striking and novel
40 light effects from reflections from ambient dust or the polished solar receiver surfaces; however,
41 systematic research studies on this topic are not available. Other elements of a solar facility, such
42 as steam turbine generators, roads, substations, and transmission lines, generally do not have the
43 strong visual symmetry and regular geometry of solar collector arrays, and their presence could
44 detract from the project’s simplicity, regular geometry, and visual unity, potentially increasing
45 negative perceptions of the facility. Some degree of visual contrast and impact from solar energy
46 development on BLM-managed lands is unavoidable; potential impacts on visual resources are

1 one factor among many that must be considered by the BLM in the complex process of
2 identifying lands suitable for solar energy development. However, the identification of both the
3 SEZs and variance lands in the Solar PEIS incorporated concerns for visual resources that
4 resulted in avoidance or reduction of major impacts on many sensitive visual resource areas.
5 Furthermore, when individual projects are proposed, additional consideration of potential visual
6 impacts will be incorporated into the required site- and project-specific impact assessment that
7 will occur, including further opportunities for public comment on potential visual impacts. Also,
8 visual design features are included in the Solar PEIS that developers will be required to consider
9 that may result in avoidance and/or reduction of potential visual impacts associated with solar
10 energy facility construction, operation, and decommissioning.

11 12 13 **3.15.15.2 Design Features for Visual Resources** 14

15 **Summary:** Many comments provided suggestions on the visual resource design features
16 proposed in the Solar PEIS. Among these comments were general statements suggesting that the
17 solar developments should be made to be visually appealing, as well as more specific requests to
18 amend the wording or content of the design features.

19
20 Commentors from industry suggested that the wording of certain design features should
21 be revised to not be prescriptive in nature, because the design features did not make sense for all
22 solar technologies or all individual projects. Among these comments were suggestions to revise
23 the text to indicate that design features would be used “where feasible” or that the design feature
24 would be implemented on a project-by-project basis. Examples provided included locating solar
25 development near prominent landscape features; following the edges of natural clearings; using
26 air transport for transmission line construction; screening facilities with vegetation or
27 earthworks; color-treating gravel surfaces; and participating in early consultation with the BLM.

28
29 A few comments suggested that the requirement of having a licensed professional
30 landscape architect to evaluate visual resources was too restrictive and not in alignment with
31 current BLM policies. Other comments suggested adding design features, such as the use of
32 monopoles for transmission.

33
34 Some commentors also requested clarification with regard to the use of commercial
35 signage, revegetation practices, and off-site mitigation.

36
37 **Response:** Through the ROD for the Solar PEIS, certain proposed programmatic design
38 features presented in Section A.2.2 of Appendix A of the Final Solar PEIS will be required to be
39 applied by the project applicants to all solar energy applications submitted to the BLM for
40 consideration. Some design features may require variations from what is described (e.g., a larger
41 or smaller protective area). In some cases, multiple options for addressing a potential resource
42 conflict are provided. Applicants will be required to work with the BLM to address proposed
43 variations in the design features and to discuss selected options for avoidance, minimization,
44 and/or mitigation of potential resource conflicts. Variations in programmatic design features will
45 require appropriate analysis and disclosure as part of individual project authorizations. Such
46 exceptions could be made where the application of visual design features for a particular project

1 could conflict with other important considerations, such as health and safety measures,
2 ecological impacts, or operational requirements, such as access to equipment or facility
3 components.
4

5 Note that many of the visual design features are likely to provide benefits to other
6 resources. For example, revegetation of suitable areas with appropriately chosen species restores
7 visual values but also helps control dust, benefitting air quality, and provides better habitat for
8 animals.
9

10 Because the Solar PEIS is programmatic in nature, many potential site- and project-
11 specific issues can be addressed only in the context of the site- and project-specific
12 environmental assessment that will be required for all solar energy applications submitted to
13 the BLM, both in SEZs and in variance areas. The site- and project-specific environmental
14 assessment examines the technologies and approaches described in the programmatic visual
15 design features, along with detailed project and site information to make a determination of
16 specific potential impacts that may occur if a project is built. The relevant programmatic design
17 features include requirements for qualified professionals to be part of the project team, and for
18 consideration of potential visual resource impacts and management objectives as early as
19 possible in the project planning process. These requirements are appropriate because optimal
20 project and project element siting is critical for avoidance and minimization of visual impacts,
21 and proper siting requires detailed knowledge of siting and landscape design principles, applied
22 prior to and during the siting process.
23

24 Similarly, because of the programmatic nature of the Solar PEIS, it is outside the scope to
25 provide detailed procedures for all required mitigation measures, such as off-site mitigation;
26 these types of information are provided in BLM IMs and other BLM policy documents. The
27 BLM agrees that more work is needed to establish methodologies for regional mitigation
28 planning and has included a framework for this in the Final Solar PEIS (Section A.2.5 of
29 Appendix A).
30
31

32 **3.15.15.3 Night Sky Impacts** 33

34 **Summary:** More than 20 comments concerned potential impacts on the night sky
35 resulting from the development of solar energy facilities. A number of comments addressed the
36 potential for change in the appearance of night skies, which would have the potential to disturb
37 night sky viewing by astronomers (both amateur and professional) and by other observers,
38 including visitors to NPS units, protected lands (e.g., wilderness areas), and other areas close to
39 the SEZs.
40

41 Other comments suggested that the cumulative impacts of all the facilities should be
42 addressed in order to understand the potential impacts from solar development as a whole on
43 night skies, rather than just for individual projects, and that the impacts of workers and ancillary
44 activities, such as industrial development near the solar sites, should be analyzed as well.
45

1 Several comments focused on potential mitigation strategies for addressing concerns of
2 interested parties. One, in particular, suggested the use of enhanced measures specifically
3 designed to address night sky concerns. Other comments suggested that light from signage,
4 skyglow, light trespass, clutter, and glare from solar infrastructure should be addressed with
5 specific mitigation measures, such as, but not limited to, painting and coating the backs of signs;
6 the use of light timers, sensors, and full cut-offs; the use of fixtures given a seal of approval from
7 the International Dark-Sky Association; the development of specific lighting plans; and the use
8 of Audio Visual Warning System (AVWS) technology. Another comment suggested that the
9 programmatic document should not specify a particular type of lighting technology, in case of
10 future advancements in technology.

11
12 With regard to AVWS, a few comments specifically addressed this concern; two were in
13 favor of its use, while one disagreed with the AVWS design feature because the FAA has not yet
14 approved its use. Another comment suggested that clarification was needed to address the best
15 technology for marking large structures associated with solar development that would cause the
16 least impact on night skies.

17
18 **Response:** In response to the comments received, the discussion of potential night sky
19 impacts in the Solar PEIS was expanded. The night sky impact mitigation design features have
20 suggestions for the luminaires and lighting controls used, the light type, the amount of lighting,
21 and the use of lighting for facility operation. If fully implemented, the design features would
22 help keep night sky impacts from solar facilities to levels consistent with safe operation of the
23 facilities. Some level of lighting is required for safe operation of industrial facilities, and some
24 level of cumulative impacts on night skies is inevitable if multiple solar projects are built and
25 operated.

26
27 One comment called for more stringent analysis of night sky impacts in the Solar PEIS;
28 however, the more general analysis in the Solar PEIS is appropriate for a programmatic impact
29 assessment. More detailed assessment of night sky impacts would be conducted for site- and
30 project-specific environmental assessments that would be required for all solar energy
31 applications submitted to the BLM for consideration, both in SEZs and in variance areas.

32
33 One comment stated that the night sky impact analysis should account for a supporting
34 workforce and residential, commercial, and industrial development that the commentor thought
35 would be needed near solar facility sites. However, few workers are needed to operate solar
36 power plants, and because the construction jobs are temporary, relatively few workers would
37 move to an area on more than a temporary basis. Facility components would generally not be
38 expected to be manufactured or serviced in the immediate vicinity of the SEZs, and
39 consequently, it is not expected that significant residential, commercial, and industrial
40 development would result from solar development in the SEZs, so there would be no substantial
41 night sky impacts from these sources.

1 Several comments referred to the design feature requiring applicants to use AVWS
2 technology with FAA approval. In response to comments received, the design feature requiring
3 applicants to use AVWS technology with FAA approval was deleted.
4

5 6 **3.15.15.4 Future Assessments for Visual Resources** 7

8 **Summary:** Comments addressed the need for additional visual impact analyses or had
9 recommendations for how future assessments should be conducted. One comment suggested that
10 further evaluations concerning impacts on visual resources should be considered in developing
11 the boundaries of SEZs, and that new data should be incorporated into ongoing analyses. Two
12 comments referred to the use of a detailed visual impact assessment to address potential impacts
13 from solar development. The comments suggested the use of viewshed analysis to determine
14 avoidance areas, the use of simulations, identification of appropriate mitigation, and/or an
15 analysis of potential exclusion areas using a “VRM Class III analysis.” In particular, the
16 comments called out the need for this type of analysis for all projects located within 25 mi
17 (40 km) of all NPS units. Two comments also indicated the need to further evaluate potential
18 impacts on trails, including National Historic Trails and National Scenic Trails, with one
19 comment requesting that visual impact analysis from potentially affected trails be a mandatory
20 requirement.
21

22 **Response:** Appendix D of the Supplement to the Draft Solar PEIS contains the Proposed
23 Identification Protocol for New SEZs. Under the proposed identification protocol, consideration
24 of potential visual impacts will occur in the course of conducting environmental assessments for
25 any new SEZs identified by the BLM, or any expansions to existing SEZs.
26

27 Existing BLM policy requires that potential visual impacts be considered in the project
28 review process for proposed development on BLM lands, in accordance with BLM’s VRM
29 program. BLM’s VRM policy requires that visual resource inventory results be considered in
30 developing visual resource management objectives for all BLM-managed lands. In addition,
31 through the ROD for the Solar PEIS, the proposed programmatic design features presented in
32 Section A.2.2 of Appendix A of the Final Solar PEIS will be applied by the project applicants to
33 all solar energy applications submitted to the BLM for consideration. Some design features may
34 require variations from what is described (e.g., a larger or smaller protective area). In some
35 cases, multiple options for addressing a potential resource conflict are provided. Applicants will
36 be required to work with the BLM to address proposed variations in the design features and to
37 discuss selected options for avoidance, minimization, and/or mitigation of potential resource
38 conflicts. Variations in programmatic design features will require appropriate analysis and
39 disclosure as part of individual project authorizations.
40
41

1 The proposed programmatic design features are designed to avoid, minimize, and/or
2 mitigate visual impacts associated with solar energy development, including requirements for
3 detailed glint and glare assessments and efforts to reduce glint and glare impacts, as well as
4 suggestions for avoiding and reducing potential night sky impacts through the use of lighting
5 controls. The visual design features include several that address National Scenic and Historic
6 Trails explicitly. Among other requirements, these design features require consultation on
7 viewshed protection objectives and practices with the respective land management agencies
8 that have been assigned administrative responsibility for landscapes having special designations,
9 including, but not limited to, National Scenic and Historic Trails; the analysis of potential
10 visual impacts within the viewshed of National Historic Trails; and the use of viewshed
11 analysis procedures employing a radius of analysis of 25 mi (40 km) from the proposed project
12 for visual impact assessment.

13
14 In preparing selected parcels for competitive offer, the BLM would review existing
15 analysis for an SEZ and consider any new or changed circumstances that may affect the
16 development of the SEZ. The BLM would also work with appropriate federal, state, and local
17 agencies, and tribes, as necessary, to ensure that the consideration of potential environmental,
18 cultural, or other resource conflicts is brought forward into the review, including information
19 provided through the Solar PEIS. This would include areas identified as having a high potential
20 for conflict with sensitive natural, visual, or cultural resources. This work would ultimately
21 inform how a parcel would be offered competitively (e.g., parcel size and configuration,
22 technology limitations, mitigation requirements, and parcel-specific competitive process).

23 24 25 **3.15.15.5 Visual Resource Inventory and Management**

26
27 **Summary:** Comments addressed concerns related to the use of the BLM's VRM and
28 VRI for impact analysis. The comments included suggestions for clarifying directions in IMs and
29 for using off-site mitigation measures. Other comments requested clarification regarding the
30 status and availability of VRIs for Nevada FOs, and the use of the VRM/VRI in the identification
31 of exclusion lands.

32
33 One comment suggested that the BLM did not fully account for viewpoints within NPS
34 units that would overlook solar development and suggested that the analysis considered only
35 BLM lands rather than areas outside of BLM jurisdiction that were of importance. The comment
36 also criticized the use of the EPA ecoregions as a means of characterizing the quality of these
37 scenic resources. In addition, one comment suggested that all lands within the SEZs should be
38 designated as VRM Class IV, in order to allow for major modifications associated with solar
39 development.

40
41 **Response:** VRI classes and VRM classes are distinct entities, with very different
42 functions within BLM's processes for visual resource evaluation and visual resource impact
43 assessment. BLM's VRI process provides BLM managers with a means for determining visual
44 values for a tract of land. As a quantitative and qualitative assessment of an area's visual
45 resources it is not used as a basis for evaluating the acceptability of a proposed project with

1 respect to potential visual impacts. The results of the VRI become an important component of
2 BLM's RMP for the area. The RMP establishes how the public lands will be used and allocated
3 for different purposes, and the VRI classes provide the basis for considering visual values in the
4 RMP land use allocation process. When a land use allocation is made through the RMP process,
5 the area's visual resources are then assigned to VRM classes with established management
6 objectives, including the degree of contrast resulting from a project or management activity
7 permissible for that VRM classification. BLM activities are required to conform to the VRM
8 objectives that apply to the project area as established in the RMP process. Conformance is
9 evaluated through the BLM Visual Contrast Rating Process.

10
11 In the Draft Solar PEIS, certain areas within the SEZs in close proximity to certain highly
12 sensitive visual resource areas, such as NPs, WAs, WSAs, and National Historic Trails, were
13 proposed for special visual impact mitigation, described in the Draft Solar PEIS as VRM
14 Class II- or VRM Class III-consistent mitigation. The intent was that solar development in these
15 areas would be required to meet the management objectives equivalent to VRM Class II or VRM
16 Class III objectives. The proposed mitigation was not an RMP-based designation of these areas
17 as VRM II or VRM III areas; rather it was a special mitigation requirement applicable to solar
18 development in these areas. VRI classes were not involved in specifying the mitigation.

19
20 However, in consideration of comments received on the Draft Solar PEIS and
21 subsequently on the Supplement to the Draft Solar PEIS, these same areas are proposed to be
22 identified as potentially high or potentially moderate visual sensitivity areas, where special visual
23 mitigation will be considered on a case-by-case basis as individual projects are proposed in these
24 areas.

25
26 The expected visual contrast levels reported for solar development within the SEZs was
27 based in large part on consideration of impacts on non-BLM managed lands within the SEZ
28 viewsheds, including but not limited to a comprehensive list of specially designated areas, such
29 as NP, National Monuments, WAs, National Scenic and Historic trails, and so on.

30
31 The proposed programmatic design features in the Solar PEIS include numerous design
32 features to avoid or reduce impacts on visual resources, including requirements for project-
33 specific environmental assessments for proposed solar facilities on BLM-lands that will include
34 consideration of visual impacts on non-BLM lands (including but not limited to NPS units and
35 other specially designated areas) within 25 mi (40 km) of the proposed project site. Among other
36 requirements, these design features require consultation on viewshed protection objectives and
37 practices with the respective land management agencies that have been assigned administrative
38 responsibility for landscapes having special designations. The design features also state that
39 conformance with VRM objectives is required and shall be determined through the use of the
40 BLM contrast rating procedures.

41
42 As noted by the commentors, several BLM IMs provide guidance relevant to visual
43 impact considerations for solar energy development, including IM No. 1998-164,
44 IM No. 2008-204, IM No. 2009-167, and IM No. 2011-061. IM No. 2011-061 identifies VRM
45 Class I and II areas as areas with high potential for conflicts, where projects will require a greater
46 level of consultation, analysis, and mitigation to resolve issues or may not be feasible to

1 authorize. VRM Class III areas are identified as areas with medium potential for conflict, where
2 resource conflicts can potentially be resolved, and VRM Class IV areas as areas with low
3 potential for conflict. IM No. 2011-061 states that applications in areas with low potential for
4 conflict, where timely or expedited authorization, is possible.
5
6

7 **3.15.15.6 Cumulative Impacts on Visual Resources**

8

9 **Summary:** Two comments suggested that the analysis did not address the degree to
10 which mitigation measures would reduce the cumulative visual impact of multiple facilities.
11 Another comment suggested revising the cumulative impacts discussion to more adequately
12 address the dramatic landscape changes that would be associated with solar development.
13

14 **Response:** The design features for reducing or avoiding visual impacts specified in the
15 Solar PEIS will reduce cumulative visual impacts from solar development throughout the Solar
16 PEIS study area, because if the design features are applied systematically, the contribution of
17 impacts from each facility to the overall level of cumulative impacts will be reduced to some
18 degree. However, the nature and extent of the cumulative visual impact reduction from applying
19 the design features cannot be determined at this time, because the cumulative visual impacts will
20 depend on the geospatial distribution of proposed projects, which projects are ultimately
21 approved, the solar technologies deployed, and the nature and amount of the other types of
22 development that occur simultaneously with solar development in the region, such as wind
23 energy and electric transmission development. Individual projects will also be required to assess
24 cumulative impacts in the context of known and reasonably foreseeable other projects in the
25 area.
26

27 If solar development occurs in a pattern where facilities are located near to each other
28 (e.g., in zones), in some instances, the same roads and transmission lines could be utilized by
29 multiple facilities, and thus the overall cumulative visual impacts would likely be lower. At a
30 minimum, cumulative impacts will be confined to fewer areas, though they could be larger in
31 these areas. If development occurs at lower densities but over larger areas, overall cumulative
32 visual impacts would likely be greater because more road and transmission development would
33 likely be required for the more widely separated solar facilities, and the additional roads and
34 transmission facilities will add to the overall cumulative visual impacts.
35

36 There are numerous renewable energy applications currently filed with BLM for BLM-
37 managed lands in the Solar PEIS region, and many additional applications on non-BLM lands in
38 the region. Although it is not likely that all the future solar and wind development projects
39 proposed in the Solar PEIS region would be constructed, it is reasonable to assume that some of
40 them will. Depending on the amount and type of solar development and the geospatial
41 development pattern, there is the potential for widespread cumulative impacts on visual
42 resources within the Solar PEIS region. The cumulative visual impacts could include a decline in
43 the overall number and extent of scenically intact, undisturbed desert landscapes, and a
44 substantially more urbanized character in areas where multiple facilities are built. If development
45 is concentrated in areas prominently visible from the desert region's major highways, cumulative

1 visual impacts may be observed by large numbers of viewers, because these highways are the
2 location from which the vast majority of viewers experience the desert.
3
4

5 **3.15.15.7 Visual Resource Impacts for the Proposed Amargosa Valley SEZ**

6

7 **Summary:** Two comments were received concerning potential visual impacts from solar
8 energy development within the Amargosa Valley SEZ. The comments discussed the potential for
9 the SEZ to block winds that transport sand to the Big Dune from the Amargosa River source, as
10 well as other sources. The comments suggested the use of tall wind fences to shield solar
11 development from windblown sand, as well as the modeling and visualization of the fences to
12 assess impacts on recreationists within Death Valley National Park.
13

14 **Response:** If wind fences were proposed around solar energy facilities in the Amargosa
15 Valley SEZ, potential visual impacts resulting from the fences would be considered in the site-
16 and project-specific environmental assessments that would be conducted for the projects.
17
18

19 **3.15.15.8 Visual Resource Impacts for the Proposed Colorado SEZs**

20

21 **Summary:** Comments indicated support for the BLM’s decision to eliminate all BLM
22 lands with high to moderate visual resource values (BLM VRM Classes I and II) as part of the
23 site selection process, the conditions placed on power tower development in the Colorado SEZs,
24 and the requirement for visual resource evaluations. The comments also suggested the
25 consideration of small utility-scale projects with “light footprints,” in order to better manage the
26 potential visual impacts, as opposed to large utility-scale projects with very large continuous
27 blocks of development.
28

29 **Response:** The rationale for recommending a restriction on the development of power
30 tower facilities in the Colorado SEZs is stated in the SEZ visual resource sections in the Final
31 Solar PEIS. In summary, the height of solar power tower receiver structures, combined with the
32 intense light reflected by the receivers atop the towers, would be expected to create strong visual
33 contrasts that could not be effectively screened from view for most areas surrounding the SEZ. In
34 addition, for power towers higher than 200 ft (61 m), hazard navigation lighting that could be
35 visible for very long distances would likely be required. Prohibiting the development of power
36 tower facilities would remove this source of impacts, thus substantially reducing potential visual
37 impacts on the numerous scenic and historic resources of the San Luis Valley, many of which are
38 of national or regional significance and which contribute significantly to tourism-based
39 recreation and important economic activity in the valley. Furthermore, the San Luis Valley
40 contains numerous small communities where tens of thousands of residents live and work in
41 close proximity to the SEZs. The broad, flat, and generally treeless expanse of the valley floor
42 would facilitate long duration views of the very bright power tower reflections during the day,
43 and flashing red aerial hazard navigation lighting at night, assuming the power towers were
44 higher than 200 ft (61 m), which is very likely.
45
46

1 **3.15.15.9 Visual Resource Impacts for the Proposed Gold Point SEZ**
2

3 **Summary:** Several comments were received that addressed visual concerns relating to
4 solar energy development within the Gold Point SEZ. Comments emphasized the potential for
5 impacts on the town of Gold Point and the general scenic environment of the area. One comment
6 further noted the potential for impacts from the lights on power towers, while another indicated
7 the potential for glare. Some comments concerned the potential for visual impacts on viewing
8 locations within Death Valley NP. One comment suggested that the contrast level would be
9 greater than “minimal to weak,” as suggested in the Solar PEIS. The comment suggested
10 eliminating power towers and requiring development in the SEZ to be consistent with VRM
11 Class II objectives. Another comment requested SEZ-specific mitigation measures to protect
12 viewsheds and night sky viewing in and around the Gold Point SEZ.
13

14 **Response:** The town of Gold Point is located less than 2 mi (4 km) from the Gold Point
15 SEZ, and the entire SEZ is within 5 mi (8 km) of the town site. Furthermore, the town site
16 elevation is several hundred feet higher than that of the SEZ, and the town effectively overlooks
17 the entire SEZ and surrounding lands in the Lida Valley. The combination of short distance and
18 elevated viewpoint suggests that the town of Gold Point could be subject to substantial levels of
19 visual contrast from solar development within the SEZ. If there is substantial solar development
20 within the SEZ, some level of visual impacts on the town of Gold Point is unavoidable.
21

22 However, potential impacts on visual resources are one factor among many that must be
23 considered by the BLM in the complex process of identifying lands suitable for solar energy
24 development. When individual projects are proposed, additional consideration of potential visual
25 impacts will be incorporated into the required site- and project-specific impact assessment that
26 will occur, including further opportunities for public comment on potential visual impacts.
27 Furthermore, there are numerous visual design features included in the Solar PEIS that
28 developers could implement that would result in avoidance and/or reduction of potential visual
29 impacts associated with solar energy facility construction, operation, and decommissioning.
30 These design features include measures to avoid or reduce night sky impacts through the use of
31 only the minimum amount of appropriately shielded lighting necessary for safe operation of the
32 facilities.
33

34
35 **3.15.15.10 Visual Resource Impacts for the Proposed Riverside East SEZ**
36

37 **Summary:** Four comments were received that specifically addressed solar development
38 within the Riverside East SEZ. Two comments noted that solar development in the SEZ would
39 be visible from viewing locations within the nearby WAs, from local residences, and/or from
40 nearby roadways. Because of the potential visibility of the solar development, one comment
41 suggested more restrictive mitigation measures. The remaining two comments raised specific
42 concerns for potential visual impacts on Joshua Tree NP from solar development within the
43 Riverside East SEZ. One comment suggested that the Solar PEIS text and figures be modified to
44 more fully represent the potential viewshed impacts on the Joshua Tree NP. The other comment
45 noted his organization’s agreement with the NPS call for exclusion of solar energy development

1 on certain lands near Joshua Tree NP. The commentor also indicated agreement with a proposal
2 to scale back the Desert Sunlight Project.
3

4 **Response:** The comments noted the potential for visual impacts on the various sensitive
5 visual resource areas around the Riverside East SEZ, including, but not limited to, Joshua Tree
6 NP, and the WA within the NP. These impacts were noted and discussed at length in the Draft
7 Solar PEIS. In response to the findings of the Draft Solar PEIS and in consideration of comments
8 received on the Draft Solar PEIS and on the Supplement to the Draft Solar PEIS, the SEZ was
9 revised to eliminate some lands in close proximity to Joshua Tree NP and the Palen-McCoy WA.
10 The revision to the SEZ substantially reduces potential visual impacts on these areas, although
11 they still could be subject to large visual impacts from solar development within the SEZ,
12 depending on the nature and extent of the development.
13

14 The proposed programmatic design features include many design features intended to
15 avoid or reduce visual impacts associated with solar energy development that could be used to
16 avoid or reduce visual impacts associated with future solar development within the SEZ. These
17 visual design features include requirements for detailed glint and glare assessments and efforts to
18 reduce glint and glare impacts, as well as suggested measures for avoiding and reducing potential
19 night sky impacts through the use of lighting controls. The visual design features include several
20 that address specially designated areas explicitly. Among other requirements, these design
21 features require consultation on viewshed protection objectives and practices with the respective
22 land management agencies that have been assigned administrative responsibility for landscapes
23 having special designations.
24

25 One comment requested that a figure in the Solar PEIS be modified to indicate that
26 Joshua Tree NP and the WA within the NP are VRI Class I areas; however, BLM VRI class
27 designations are applicable only to BLM-managed lands and therefore do not apply to NPS-
28 managed lands. Note, however, that the proximity of the NP and WA were considered in the VRI
29 analysis that included the lands within the SEZ and, furthermore, that the impacts on these
30 resources were described and considered extensively in the Solar PEIS visual impact analysis.
31
32

33 **3.15.16 Acoustic Environment**

34 **3.15.16.1 Noise Impacts on Wildlife**

35
36 **Summary:** (1) Several comments noted that noise impacts were limited to impacts on
37 nearby human residences and did not analyze impacts on wildlife or propose design features to
38 minimize these impacts. (2) Several comments noted that, based on recent research, the level
39 used to determine whether noise impacts on wildlife could be adverse was too high.
40
41

42
43 **Response:** (1) No text change is required. As noted in the text, the SEZ sections
44 primarily address potential noise impacts on humans. Potential impacts on wildlife at nearby
45 sensitive areas are also discussed, and the text refers to the more complete discussions of

1 potential noise impacts on wildlife in Section 5.10.2. The individual SEZ discussions were
2 updated for this Final Solar PEIS to reflect new data where appropriate.

3
4 (2) The noise impact analyses for wildlife in specially designated areas were updated in
5 the SEZ-specific sections based on recent research publications as suggested in the comment.

6 7 8 **3.15.16.2 Design Features for Noise** 9

10 **Summary:** Comments (1) noted that mitigation requirements, design features, and noise
11 monitoring need to be tied to impacts rather than just the existence of *nearby* sensitive receptors;
12 (2) objected to the use of the undefined terms *nearby* and *becomes an issue* in mitigating
13 measures; (3) noted that transformer requirements need to be identified at the permitting stage,
14 not after operations have begun; (4) suggested rewording several mitigation measures; (5) noted
15 that one mitigating measure is actually an assessment approach; (6) suggested that noise control
16 engineering be used for additional components of dish engines, not just the engine;
17 (7) questioned the need for baseline noise monitoring in some situations and recommended that
18 such monitoring be done; and (8) recommended that noise mapping be used to predict noise
19 levels.
20

21 **Response:** The wording of the programmatic design features is necessarily broad, and no
22 update is required. The Draft Solar PEIS points out that certain design features will be required if
23 sensitive receptors are nearby, identified sensitive noise receptors out to about 5 mi (8.0 km), and
24 screened predicted noise impacts at these locations. The design features incorporate this
25 approach by expressing a contingent rather than an absolute requirement, namely, that sensitive
26 receptors be *nearby*. When a specific project has been proposed and detailed data are available,
27 refined predictions of noise levels can be made. A more precise determination of *nearby* could
28 then be made based on the project-specific data and, as noted in Section A.2.2 of Appendix A, at
29 BLM's discretion, adjustments made in the design requirements. Similarly, the use of *becomes*
30 *an issue* in the design feature relating to transformer replacement recognizes that, given the long
31 operating lifetime of a solar energy development, the local environment may change and require
32 actions or equipment not anticipated at the time an ROW was granted. Again, the contingent
33 approach expressed in the design feature for transformer replacement allows for evaluation of
34 the situation with consideration, at BLM's discretion, of alternative approaches. This approach
35 is consistent with the adaptive management approach being taken and with the ongoing
36 measurement of noise levels under the long-term monitoring plan to be developed by the BLM.
37

38 No update was made regarding the need to gather baseline noise data and monitoring in
39 the absence of nearby sensitive receptors. This information is needed for several reasons in
40 addition to identification of sensitive noise receptors, including assessment of solar energy
41 development under the long-term monitoring plan.
42

43 Given the level of detail available, the use of noise mapping tools is inappropriate at this
44 programmatic level of analysis. When a specific project has been proposed, the BLM will
45 consult with other agencies, including NPS. At this time, the need for using noise mapping tools
46 could, at BLM's discretion, be required. No update was made.

1 The wording changes and inclusion of *noise control engineering methods* as a potential
2 design feature for dish engines were incorporated in the Final Solar PEIS.
3
4

5 **3.15.16.3 Additional Modeling and Analysis Requests for Noise**

6

7 **Summary:** Comments (1) presented additional requirements for when noise impact
8 modeling near NPS units be done and (2) disagreed with statements about the availability of
9 detailed data needed for modeling, and (3) noted that soundscape impacts were not addressed.
10

11 **Response:** (1) No update was required. Between the Draft Solar PEIS and this Final
12 Solar PEIS, the BLM has considered many additional factors, including noise, in consultation
13 with NPS in making changes in the proposed SEZs. In addition, at this programmatic level, much
14 of the detailed information needed to undertake refined modeling is unavailable. To determine
15 the proximity at which background studies and refined modeling must be undertaken would be
16 premature at this level. When a specific project is proposed, the BLM will consult with the NPS
17 to determine what steps are necessary to protect human and wildlife values in NPS units.
18 Additional mitigation measures in addition to those presented in the Final Solar PEIS may be
19 imposed in response to these refined studies.
20

21 (2) Text in Appendix M has been revised to note that only some of these detailed data are
22 available until a specific project has been proposed and that it was not obtained for the simplified
23 noise modeling conducted for this Final Solar PEIS.
24

25 (3) The Final Solar PEIS acknowledges the potential for noise impacts on humans and on
26 wildlife in specially designated areas, including NPS units. At this programmatic level, refined
27 noise modeling has not been conducted. When a specific project is identified and project-specific
28 information is available, more detailed studies will be conducted and additional potential impacts
29 assessed. The BLM will consult with NPS at that time to ensure that the values associated with
30 NPS units are protected to the extent practicable.
31
32

33 **3.15.16.4 Requests for Exclusions Related to Noise**

34

35 **Summary:** Comments requested exclusions of additional areas from solar development.
36

37 **Response:** Between the Draft Solar PEIS and the Final Solar PEISs, the BLM has
38 considered many additional factors, including noise, in consultation with NPS in making changes
39 in the proposed SEZs. In addition, at this programmatic level, much of the detailed information
40 needed to undertake refined modeling is unavailable. To determine the proximity at which
41 background studies and refined modeling must be undertaken would be premature at this level.
42 When a specific project is proposed, the BLM will consult with the NPS to determine what steps
43 are necessary to protect human and wildlife values in NPS units. Other mitigation measures in
44 addition to those presented in the Final Solar PEIS and exclusion areas may be imposed in
45 response to these refined studies. A reference to noise and soundscape protection policies has
46 been added to the bullet list on noise in Section 3.3.

1 **3.15.16.5 Noise Impacts for the Proposed Riverside East SEZ**
2

3 **Summary:** Comments suggested (1) additional evaluation of noise impacts in Joshua
4 Tree NP and (2) inclusion of Joshua Tree NP as a sensitive receptor.
5

6 **Response:** Joshua Tree NP is already included as a specially designated area in
7 Section 3.9.4.15.2 of the Draft Solar PEIS, and no update is needed. The boundaries of the
8 proposed Riverside East SEZ in the Draft Solar PEIS were updated for this Final Solar PEIS.
9 Joshua Tree NP is now 1.8 mi (3 km) from the proposed SEZ rather than adjacent to it. However,
10 the conclusion in the Draft Solar PEIS that noise levels could affect wildlife in some portions of
11 Joshua Tree NP remains valid. The text in Sections 9.4.15.2.1 (construction) and 9.4.15.2.2
12 (operations) was updated to note that “These noise levels could be audible and affect
13 soundscapes in Joshua Tree NP.”
14
15

16 **3.15.16.6 Noise Impacts for the Proposed Amargosa Valley SEZ**
17

18 **Summary:** Comments were concerned with impacts of noise from the Amargosa Valley
19 SEZ on Death Valley NP and (1) disagreed with the conclusion that wildlife would not be
20 affected, (2) requested that Death Valley NP be listed as a noise sensitive receptor, (3) made
21 suggestions for changing the impacts of construction and operation, (4) made recommendations
22 for new background levels, (5) identified possible inconsistencies, and (6) disagreed with the
23 conclusion that visitors at nearby specially designated areas would not be adversely affected.
24

25 **Response:** On the basis of comments received and recent references, this Final Solar
26 PEIS was revised using an approximate significance threshold of 55 dBA corresponding to the
27 onset of adverse physiological impacts to update the analysis of potential noise impacts on
28 terrestrial wildlife in areas of special concern. With the updated, reduced area of the proposed
29 Amargosa Valley SEZ, predicted construction and operations noise levels at the boundary of the
30 NP are all below 55 dBA. The text was revised to incorporate these updates.
31

32 No update to the background levels presented in the Draft Solar PEIS was made. These
33 levels are reasonable for this programmatic level assessment. When a specific project has been
34 proposed, a background noise survey will be made as required under BLM's design features
35 (Section A.2.2.14 of Appendix A), and the BLM will consult with potentially affected agencies
36 including NPS. At that time, an estimate of background noise levels specific to the project site
37 can be made.
38

39 Death Valley NP is already included as a specially designated area in Section 3.9.4.15.2
40 of the Draft Solar PEIS, so no update is needed. However, the text in Sections 11.1.15.2.1
41 (construction) and 11.1.15.2.2 (operations) was updated to note that, “These noise levels could
42 be audible and affect soundscapes in Death Valley NP.”
43
44

1 **3.15.17 Paleontological Resources**

2
3
4 **3.15.17.1 General Comments on Paleontological Resources**

5
6 **Summary:** General comments on paleontology included disagreement that the impacts
7 on paleontological resources would be minimized through the variance process since they are
8 considered in the normal process and disagreement that subsurface paleontological remains
9 would not be readily accessed by collectors, there would be more collecting because of exposure
10 due to pedestaling from wind erosion. A question was asked of the additional studies
11 recommended in the Supplement on the Draft Solar PEIS as to whether the results of these
12 studies accomplished under the Solar PEIS would be sufficiently detailed so that a developer
13 would not have to conduct additional studies, or should the developer, and not BLM, do all the
14 studies in the Supplement themselves more cost-effectively.

15
16 **Response:** The variance process does address paleontological resource requirements,
17 pre-application meetings will be held with the applicant to discuss avoidance of significant
18 resources if known to be present in the area considered, and design features will be required
19 for all projects on BLM lands whether within SEZs or on variance lands, which will minimize
20 impacts not just consider them. Pedestaling, creation of pedestals from wind erosion, is a
21 phenomenon that can affect cultural artifacts leaving them exposed at the surface; however,
22 effects on buried paleontological resources, which are located in geological formations and not
23 typically in loose sand or sediment, would be minimal.

24
25 Not all the recommended activities in the SEZ action plans specified in the Supplement
26 are being undertaken at this time, although many of them have been completed or are underway.
27 It is likely that both BLM and the developers will need to work on the additional studies jointly
28 in order to expedite future development in an environmentally friendly and cost-effective
29 manner.

30
31
32 **3.15.17.2 Access Road Impacts on Paleontological Resources**

33
34 **Summary:** A comment on access roads was made for the Dry Lake Valley North SEZ in
35 Nevada indicating that fewer impacts on paleontological resources would result from upgrading
36 existing roads than constructing new roads.

37
38 **Response:** The Dry Lake Valley North paleontology section in the Final Solar PEIS was
39 revised to mention the reduction in impacts if existing roads were upgraded.

1 **3.15.18 Cultural Resources**

2
3
4 **3.15.18.1 General Comments on Cultural Resources**

5
6 **Summary:** There were a number of general comments on cultural resources endorsing
7 other sets of comments, acknowledging impacts at various locations (but not defining a particular
8 action), and expressing general dissatisfaction or general support with the Solar PEIS process
9 regarding historic and cultural resources.

10
11 **Response:** No text changes in the Solar PEIS resulted from these general comments.
12

13
14 **3.15.18.2 Requests for Exclusions Related to Cultural Resources**

15
16 **Summary:** Several commentors suggested areas with sensitive cultural resources that
17 they thought should be excluded from future solar energy development. These included some
18 specific locations, mostly variance lands but also some SEZs, and generalized areas, such as dry
19 lakes, dunes, washes, and playas.

20
21 **Response:** Some of the areas mentioned by the commentors as having sensitive cultural
22 resources have been reduced in size or are no longer included in the variance lands and have
23 been added to the exclusion areas. Some SEZs were dropped and are now considered variance
24 areas; others are excluded. However, many of the suggested areas have not been identified by
25 the BLM as exclusion areas, and if interest is expressed in those areas of concern, under the
26 proposed Solar Energy Development Program, pre-application meetings between the BLM and
27 the prospective applicant would be held to discuss those conflicts prior to submittal of a formal
28 application. If the applicant chooses to go forward, knowing the cultural issues to be faced,
29 site-specific Section 106 review will be conducted for the project. The BLM will require the
30 completion of inventory, evaluation, determinations of effect, and treatment in accordance with
31 the Solar PA, including consultations with the State Historic Preservation Officer (SHPO) and
32 affected tribes. The public will have an opportunity to comment through the project-specific
33 NEPA process.
34

35
36 **3.15.18.3 BLM Alternatives Related to Cultural Resources**

37
38 **Summary:** Many commentors expressed a preference (for or against) the various
39 alternatives presented in the Solar PEIS as related to treatment of cultural resources or made
40 comments regarding the accuracy of the comparison of those alternatives, disagreeing that the
41 impacts would be similar under each of the alternatives when 30 times more land is available for
42 development under the development alternative and the SEZs should be less-sensitive areas. It
43 was noted in the comments that under all of the alternatives there was the potential for
44 irreversible impacts on natural and cultural resources.
45

1 **Response:** Preferences (in support and in opposition) are acknowledged but do not result
2 in changes to the Final Solar PEIS and are not responded to further. Regarding the comparison of
3 alternatives and the Solar PEIS statement that impacts on cultural resources would be similar, the
4 RFDS has only a set number of acres that would reasonably be developed in a given time frame,
5 and although one alternative has more lands available, the same amount of land is anticipated to
6 be developed under the RFDS. Although it is true that the SEZs should be chosen in areas
7 determined not to be culturally sensitive, the amount of surveys conducted in each of these areas
8 prior to the selection of the SEZs is not conducive to that conclusion. Therefore, all lands were
9 assumed to have relatively equal potential to contain sensitive cultural resources for the
10 comparative analysis. In reality, the identification of significant cultural resources will be
11 location- and project-specific with some areas having a higher potential than others; those areas
12 with the known highest potential have been excluded.

13 14 15 **3.15.18.4 Impacts on National Historic Trails**

16
17 **Summary:** Many comments were received regarding National Historic Trails, indicating
18 a desire for the establishment of mitigation measures and adequate easements in the Solar PEIS,
19 more thorough inventory and evaluation of impacts, more thorough analysis of cumulative
20 impacts on the landscape, the conduct of viewshed analyses, and exclusion of solar energy
21 development within 5 mi (8 km) (7 mi [10 km] for power towers) of high-potential segments
22 and associated NRHP-eligible sites. One commentor requested that surveys of all segments of
23 National Historic Trails, National Scenic Trails, and candidate National Historic Trails within
24 5 mi (8 km) of approved solar development areas and SEZs be conducted prior to finalization of
25 the Solar PEIS.

26
27 **Response:** National Historic Trails (as significant cultural resources) will be evaluated
28 for specific projects as stipulated in the Solar PA and as required by NEPA and NHPA. A
29 detailed study is under way for the Old Spanish Trail and El Camino Real de Tierra Adentro, but
30 results will not be available prior to this Final Solar PEIS. It is possible that these trail inventory
31 projects may reveal unanticipated or undocumented remnants, artifacts, treads or traces of high-
32 potential sites or segments, trail features, and/or associated settings for National Historic Trails
33 adjacent to or within SEZs. National Historic Trails, suitable trails, and trails under study will be
34 assessed on a project-by-project basis using an accepted National Trail inventory process and in
35 consultation with the trail administering agency. The inventory process will identify the potential
36 area of adverse effect on the resources qualities, values, and associated settings and the primary
37 use or uses of the tracts within the viewshed; prevent substantial interference; and determine any
38 area unsuitable for development. Residual impacts on trails (on-site or off-site) will be avoided,
39 minimized, and/or mitigated to the extent practicable according to program policy standards.
40 The Solar Energy Program design features (Section A.2.2.23) of the Final Solar PEIS do not
41 establish a minimum or maximum limit on the size of the areas of possible adverse effect from
42 the solar energy development; this will be determined through the results of the required
43 inventory, in consultation with the trail administering agency. Further guidance will be included
44 in forthcoming BLM National Trails System manual series and other NLCS-related policy
45 manuals.

1 **3.15.18.5 Additional Information on Cultural Resources**
2

3 **Summary:** Several comments contained background information that may be relevant
4 for the Solar PEIS and/or corrections to information presented in the Draft Solar PEIS.
5

6 **Response:** New information and corrections presented in comments that could be
7 verified have been incorporated into the Final Solar PEIS, such as information on Serrano
8 traditional lands in California, literature sources on trails in the California Desert, information
9 regarding sites that could be affected by development in the Riverside East SEZ, Small-Tract
10 Homestead properties in southwest deserts, and Los Conejos Mexican Land Grant in the San
11 Luis Valley. The railroad discussion in the Dry Lake Valley North historic context discusses
12 historic railroad lines, not necessarily active ones, so the comment regarding there no longer
13 being a Pioche to Bullionville Railroad or a branch line between Caliente and Prince was not
14 revised for the Final Solar PEIS because these lines, although no longer in use, still have
15 historical relevance and could be associated with historic sites of importance. Also, the Delamar
16 SEZ has been dropped, so corrections to the railroads mentioned in the cultural resources section
17 relative to that SEZ are not being made in the Final Solar PEIS.
18
19

20 **3.15.18.6 Policy Issues Related to Cultural Resources**
21

22 **Summary:** One commentator asked how the agencies will address proposed projects that
23 are adjacent to important cultural resources, like traditional cultural properties and sacred sites.
24 Other commentators recommended that the BLM be flexible with its SEZs and refine their
25 boundaries as more is learned about the potential for cultural resources to be affected. It was
26 noted that smaller utility-scale projects with lighter footprints would blend more easily into
27 landscapes in which cultural resources and National Heritage Areas are present and should be
28 avoided. A question was asked about the additional studies recommended in the Supplement to
29 the Draft Solar PEIS as to whether the results of these studies accomplished under the Solar PEIS
30 would be sufficiently detailed so that a developer would not have to conduct additional studies,
31 or should the developer, and not the BLM, perform all the studies in the Supplement themselves
32 more cost-effectively.
33

34 **Response:** Whether sites are within development areas or adjacent to them, if there is a
35 potential for effect, that effect must be considered in order for the BLM to be in compliance with
36 Section 106 of the NHPA and it must be addressed during the NEPA process. There is no
37 difference in the process for sensitive resources adjacent to proposed projects versus those within
38 the project footprint. As cultural surveys are conducted and more is known about the resources
39 present within the SEZ, adjustments may be made that will affect the developable portions of the
40 SEZs. Language in the Solar PEIS alerts prospective applicants to these potential changes as
41 some of the current unknowns are addressed. Not all of the recommended actions specified in the
42 Supplement to the Draft Solar PEIS are being undertaken at this time, although many of them
43 have been completed or are under way. It is likely that both the BLM and the developers will
44 need to work on the additional studies jointly in order to expedite future development in an
45 environmentally friendly and cost-effective manner.
46

3.15.18.7 Evaluation of Impacts on Cultural Resources

Summary: Commentors suggested that Chapter 5 should more explicitly acknowledge the potential impacts of noise and light on cultural resources, such as National Historic Trails and traditional cultural properties. Secondary impacts of dust, increased traffic, and vibration from construction activities can irreparably damage rock art sites, and these impacts should be considered. Concerns over possible impacts on cultural sites, plant-gathering areas, hunting areas, song and story sites, and trail systems were mentioned, including consideration of visual impacts. Consistency among the impacts on habitat between the ecological sections and the cultural/Native American concerns sections was questioned. One commentor stated a concern about the consideration of potential impacts on likely significant sites and landscapes in proximity to prehistoric and dry lakes and dune areas. It was also suggested that dunes undergo subsurface testing during cultural surveys. One commentor thought that since locations of traditional cultural properties with respect to the SEZs were not addressed in the Solar PEIS, the importance of the properties and impacts on them had been disregarded. One commentor requested that the impacts on the cultural landscape of the Colorado River and its travel and visual connections with the Colorado Desert to the west be considered in the Solar PEIS, not just the impacts on specific archaeological sites within the SEZs. It was also requested that areas of high potential impacts be stated for the California SEZs and that the Solar PEIS more fully describe the areas where further investigation is needed. Several commentors raised concerns about the cumulative analysis, such as the lack of acknowledgement for the far-reaching effects of development on linear features, like National Historic Trails and scenic byways.

Response: The Solar PEIS acknowledges the likelihood of significant sites in association with key features like dry lakes and dunes. These were explicitly called out as targeted areas of interest for future sample surveys in the Supplement to the Draft Solar PEIS, as was the subsurface testing of dunes. Current surveys of 5% of the lands with the SEZs in California, Nevada, and Arizona have incorporated these areas into their survey strategies. As a result of solar energy development, potential impacts of noise and light are possible on significant cultural resources, as are dust, traffic, and vibration impacts on rock art; therefore, these impacts have been more clearly stated in Chapter 5.

Impacts on specific plant and animal species as stated in the Native American concerns section may differ from those in the ecological resources sections because the focus is different. The ecological impact is based on the percentage of a species within the SEZ and the magnitude of that impact on the entire population; the impact on Native American concerns is based on the sheer presence of a particular species within the area of potential effect and whether that would be eliminated by construction. The larger population is not considered because tribes may not have access to it; all that is considered is what the tribes could have access to on public lands.

The Solar PEIS acknowledged that the locations of traditional cultural properties were being discussed as part of ongoing government-to-government consultations and that these properties would be addressed on a project-by-project basis. The Solar PEIS attempts to cover the larger aspects of traditional landscape and interconnectivity of trails in the SEZ sections of California and acknowledge that impacts do not stop at the boundaries of the SEZs and must be considered during future project-specific NEPA analyses. Also, more targeted descriptions of

1 further analysis needed for the California SEZs was provided in the Supplement to the Draft
2 Solar PEIS, and the Final Solar PEIS was updated with results of the Class I overview conducted
3 after the Draft was issued to address areas of high potential impact (many of which have now
4 been dropped from the SEZs, including the dropping of two of the SEZs in their entirety—Iron
5 Mountain and Pisgah).
6
7

8 **3.15.18.8 Design Features for Cultural Resources** 9

10 **Summary:** A wording change from “should” to “will” was requested so that the
11 recommended mitigation measures in Chapter 5 would be requirements. It was recommended
12 that geo-archaeological investigations be required for each project. One commentor questioned
13 the requirement for a records search of unpublished literature without the BLM providing some
14 objective criteria. One commentor questioned avoidance of Desert Training Center/California–
15 Arizona Maneuver Area- (DTC/C-AMA-) associated historic resources since they are
16 widespread and wanted the language changed to “to the extent practicable.” Concern was
17 expressed that the Solar PEIS favored data recovery as a mitigation option and did not fully look
18 at mitigation of other types of cultural losses beyond potential loss of scientific value, such as
19 losses of value for education, heritage tourism, and traditional use, which they thought could be
20 accomplished through consulting and working with tribes. Specific to the Afton SEZ in
21 New Mexico, a commentor requested mitigation of potential visual impacts on several historic
22 trails, National Historic Landmarks, National Natural Landmarks, and Scenic Byways, as well as
23 avoidance of dune areas. Specific to Dry lake Valley North SEZ, it was recommended that an
24 SEZ-specific design feature could be added that suggests use of an existing road for access to the
25 SEZ to reduce impacts on cultural resources. One commentor indicated that site-specific
26 analyses on individual projects are not sufficient for addressing cumulative impacts and
27 questioned when and how formalized agreements might be developed and implemented to
28 address management and mitigation options. Monitoring for impacts due to increases in human
29 traffic at nearby ACECs was considered unacceptable, because avoidance of impacts should be
30 the primary goal; measures should be implemented that avoid those impacts, not monitor them.
31

32 **Response:** Consideration of all the design features presented in Section A.2.2 of
33 Appendix A of the Final Solar PEIS is a required element of the BLM Solar Energy Program.
34 Because of site-specific circumstances, not all design features as written will apply to all projects
35 (e.g., a resource is not present on a given site). Some design features may require variations from
36 what is described (e.g., a larger or smaller protective area). In some cases, multiple options for
37 addressing a potential resource conflict are provided. Applicants will be required to work with
38 the BLM to address proposed variations in the design features and to discuss selected options
39 for avoidance, minimization, and/or mitigation of potential resource conflicts. Variations in
40 programmatic design features will require appropriate analysis and disclosure as part of
41 individual project authorizations.
42

43 In agreement with the comment on geo-archaeological investigations, the
44 recommendation for these studies was presented in the Supplement to the Draft Solar PEIS.
45 Unpublished or “gray” literature is a common resource for practicing archaeologists, and

1 researching these documents would not be recognized as an unreasonable request by any
2 archaeological consulting firm that a developer might hire.

3
4 Avoidance of DTC/C-AMA-related resources applies only to focused activity areas that
5 retain integrity, such as Camp Iron Mountain. The wording in the Final Solar PEIS has not been
6 changed, because these areas, in addition to significant resources associated with Palen and Ford
7 Dry Lakes and Native American trails evident in the desert pavement, should be avoided.
8 Avoidance is the only preferred mitigation option; all other options are discussed and decided
9 upon in consultation with the SHPO and affected tribes. The language in Chapter 5 is merely
10 illustrative of the types of mitigation that have been typically implemented, and as the
11 commentor stressed, consultation is the key to establishing effective mitigation; some rephrasing
12 of the text was made in the Final Solar PEIS in response to this comment. Cumulative impacts
13 are analyzed for all resources during project-specific NEPA and are not dismissed, despite the
14 wording “site-specific” and “individual” project; cumulative analysis is a requirement of NEPA.
15

16 In terms of formalized agreements, the Solar PA is the overarching agreement between
17 the BLM, the six SHPOs (Arizona, California, Colorado, New Mexico, Nevada, and Utah), and
18 the Advisory Council on Historic Preservation. The BLM will consult the SHPO, Indian tribes,
19 and any consulting parties, if historic properties are present and would be adversely affected.
20 Individual agreements or MOAs may be established with the SHPO within the framework of the
21 PA to more specifically address project-specific adverse effects on historic properties and to
22 conclude the Section 106 process.
23

24 A SEZ-specific design feature for the Dry Lake Valley North SEZ was added to the Final
25 Solar PEIS to acknowledge the reduction in cultural resource impacts if an existing access road
26 south of the SEZ were used instead of construction of a new access road.
27

28 Monitoring for impacts is the first step in assessing whether impacts are occurring, and
29 if so, monitoring will help determine how those impacts are occurring, so that the appropriate
30 mitigation measures can be implemented. The BLM must know those two things in order to
31 effectively determine the types of measures to implement and whether any mitigation measures
32 are even needed.
33

34 **3.15.18.9 Tribal Consultation**

35
36
37 **Summary:** Several commentors mentioned the lack of consultation and the subsequent
38 legal challenges being faced by the BLM for the previous solar projects it permitted. Frustration
39 with the consultation process was expressed, especially at the comment and consultation periods
40 imposed by the BLM, which did not offer some tribes a reasonable amount of time to have their
41 experts review the technical material presented, and at the inability of the existing process to
42 avoid sensitive cultural resources. Several commentors requested that ethnographic studies be
43 conducted for the remaining SEZs, not just for those SEZs in Nevada and Utah. In general, it
44 was suggested that more in-depth interviews and oral histories be conducted to gather tribes’
45 concerns and to learn how the landscapes were used. A comment was received that future
46 consultation on the Solar PEIS cannot be limited to tribes that commented on the Draft Solar

1 PEIS. One commentor expressed concern that the pre-application process did not include cultural
2 resources consultation. It was recommended that consultation cover all aspects of mitigation,
3 including curation of any recovered materials and how and where recovered materials are to be
4 maintained. It was noted in comments on the Supplement to the Draft Solar PEIS that the BLM
5 should “ensure” rather than “expect” government-to-government consultation to continue
6 beyond the signing of the ROD and that the BLM should fully fulfill its objective to contact
7 tribes not originally included in the ethnographic studies to ensure the inclusion of tribal
8 traditional uses and cultural resources in other SEZs. One tribe requested notification of any
9 activities occurring near its lands.

10
11 **Response:** In response to concerns over the BLM tribal consultation practices,
12 IM No. 2012-032, “Native American Consultation and Section 106 Compliance for the Solar
13 Energy Program Described in Solar Programmatic Environmental Impact Statement,” was issued
14 in December 2011 to improve tribal consultation procedures for the solar program. The BLM
15 will consult with federally recognized Indian tribes early in the planning process to identify
16 issues and areas of concern regarding any proposed solar energy project. Such consultation is
17 required by NHPA and other authorities and is necessary to determine whether construction and
18 operation of a project are likely to disturb traditional cultural properties or sacred sites, impede
19 access to culturally important locations, disrupt traditional cultural practices, affect movements
20 of animals important to tribes, or visually affect culturally important landscapes. Such
21 consultation shall cover planning, construction, operation, and reclamation activities. The BLM
22 will work with tribes during consultations to establish reasonable schedules for their input on
23 important projects, recognizing their limited resources and the time necessary to thoroughly
24 review a project. Agreements or understandings reached with tribes shall be carried out in
25 accordance with the terms of MOAs or state-specific agreements as defined within the Solar PA.
26 The BLM will also consult with Indian tribes under the terms of NAGPRA. Any Historic
27 Properties Treatment or Mitigation Plans, including future disposition of recovered materials,
28 will take such consultations into account. Consultation will continue beyond the ROD for this
29 Solar PEIS.

30
31 BLM IM No. 2011-061, “Solar and Wind Energy Applications—Pre-application and
32 Screening,” issued February 2011, describes the pre-application and screening procedures
33 required for solar and wind energy applications. Agency policy requires at least two pre-
34 application meetings with the applicant. Their purpose includes the identification of needed
35 cultural resource studies. Tribes will be asked to participate. Screening criteria encourages
36 responsible BLM line officers to prioritize the processing of applications for areas with the
37 lowest potential for conflicts, including cultural resource concerns.

38
39 Appendix K summarizes the tribal consultation efforts undertaken by the BLM
40 throughout the development of the Solar PEIS. Consultation efforts have not been restricted to
41 tribes that commented on the Draft Solar PEIS.

42
43 Ethnographic studies were completed for several SEZs in Nevada and Utah, and the
44 results were incorporated into the Final Solar PEIS. Additional cultural and ethnographic work is
45 also being conducted for the SEZs in Colorado, as indicated in the Colorado SEZ sections of this

1 Final Solar PEIS. As money becomes available, it is possible that additional ethnographic studies
2 could be funded within the remaining SEZs in the future.
3
4

5 **3.15.18.10 Section 106 and Cultural Resource Surveys** 6

7 **Summary:** Many commentors were concerned over the lack of cultural resource surveys
8 within most of the SEZs. They stressed the need for conducting Class III surveys and the
9 importance of completing required consultation with SHPOs and affected tribes and the
10 Section 106 process prior to development. It was feared that the Solar PEIS would be used to
11 circumvent the compliance process, and it was requested that the Solar PEIS explicitly state
12 that the ROD does not preclude the continuing process of consultation for compliance with
13 Section 106. It was thought that significant cultural resources within the SEZs have not been
14 adequately identified and that existing computerized state data were not used in the analysis.
15 Some commentors wanted completion of cultural surveys, ethnographic studies, and landscape
16 level analyses prior to SEZ designation and publication of the Final Solar PEIS, and at least
17 Class II sample surveys prior to future SEZ identification. Others did not want expensive
18 Class III surveys required prior to submission of applications on variance lands, rather they
19 suggested Class I or Class II surveys. It was strongly advised that historians and cultural experts
20 in the San Luis Valley Hispanic communities, who have additional knowledge of resources
21 unavailable to government agencies, be consulted. The generation of predictive models was
22 suggested along with the conduct of Class II sample surveys to increase the quality and amount
23 of data available for the SEZs. There was some concern expressed about the amount of land
24 being surveyed and whether 5% was still inadequate; it was thought at least 10% was needed and
25 20% should be required for future proposed SEZs. The percentage of lands previously surveyed
26 for each of the California SEZs was requested. There was also concern over the use of pristine
27 desert environments and a preference for the use of previously disturbed lands.
28

29 **Response:** As a result of these concerns over low levels of previous cultural survey
30 within the SEZs, the BLM issued contracts for the completion of cultural surveys of 5% of lands
31 within several of the SEZs in California, Nevada, and Arizona, as specified in the SEZ sections
32 of the Final Solar PEIS. The areas currently under survey are in addition to any lands previously
33 surveyed in order to bring the SEZs closer to a 10% survey coverage level (e.g., after these new
34 surveys are completed, approximately 9% of the Millers SEZ (Nevada) will have been surveyed
35 to professional standards; for the Brenda SEZ (Arizona), with no prior documented cultural
36 survey, the coverage will at least be 5%). Although data from these recently contracted surveys
37 will not be available for use in the Final Solar PEIS, the results will better inform future
38 applications for development within these SEZs. The sample surveys will help the BLM
39 determine the cultural sensitivity of various ecozones. Results from the surveys will enable BLM
40 managers to anticipate where conflicts between solar development and cultural resources can be
41 expected, so that they can direct development to areas where disturbances to significant cultural
42 resources will be minimized. As money becomes available, it is possible that additional work,
43 including the possible generation of predictive models, could be funded within the SEZs in the
44 future. Ethnographic studies were completed for several SEZs in Nevada and Utah, and the
45 results were incorporated into the Final Solar PEIS. Additional cultural and ethnographic work is
46 also being conducted for the SEZs in Colorado, as indicated in the SEZ sections of the Final

1 Solar PEIS. As discussed in Appendix M on the methodology used for the analysis in the Solar
2 PEIS, state GIS data from the SHPOs were used for all the states except California. In California,
3 a Class I overview was conducted between the Draft and Final Solar PEIS, and the results were
4 incorporated into the Final Solar PEIS. On the basis of the results of the Class I review, less than
5 2% of the Imperial East SEZ had been previously surveyed and approximately 10% of the
6 original footprint of the Riverside East SEZ had been surveyed. With the reduction and
7 reconfiguration of the Riverside East SEZ, that 10% number is no longer relevant; however, with
8 the recently contracted survey of more than 5,900 acres (24 km²), it is likely that the surveyed
9 portion of the Riverside East SEZ as configured for the Final Solar PEIS will be between 5 and
10 10% of the area.

11
12 The BLM is committed to meeting its obligations under Section 106 of the NHPA and
13 has developed a Solar PA with the six SHPOs from the states covered in this Solar PEIS and the
14 Advisory Council on Historic Preservation (ACHP). Affected tribes and the National Trust for
15 Historic Preservation have been invited to be consulting/concurring parties on the PA. The PA
16 specifies how the BLM will continue its consultation with SHPOs, tribes, and ACHP in order to
17 meet its Section 106 responsibilities for future solar energy projects. This approach for meeting
18 an agency's Section 106 compliance obligations is authorized by 36 CFR 800.4(b)(2) and
19 36 CFR 800.14(b)(3). The ROD does not preclude ongoing consultation under Section 106;
20 however, that language has not been explicitly added to the Solar PEIS, because it is evident in
21 the Solar PA that Section 106 is ongoing beyond publication of this Solar PEIS and its ROD.

22
23 Pre-application meetings are required under the Solar Energy Development Program and
24 will be helpful for applicants wishing to apply for development of a project on lands not yet
25 surveyed for cultural resources. The BLM and other stakeholders, including tribes, will be able
26 to provide some sense of the potential for significant resources within the area during the
27 pre-application process. A records check is required prior to any Class II or Class III surveys in
28 order to familiarize the researcher with the area and help define the survey strategy; therefore, it
29 would be a good start for determining the potential of the area to contain significant resources.
30 Consultation with tribes and local historians and other basic research strategies are also less
31 expensive than fieldwork. A Class II sampling survey would help further inform the applicant of
32 what to expect during the application process if there are still sufficient gaps in what might be
33 present in the prospective project area. These are clearly ways less expensive than a 100%
34 Class III survey that are available to the prospective applicant prior to submitting an application.
35 After all of the homework, if the land continues to have economic potential for development, the
36 Class III survey would be required for the remaining lands as part of the application process, and
37 no money would have been wasted on the prior activities. The survey of Class II sample quadrats
38 is often carried out to Class III standards. Thus, if Class III inventories are required of remaining
39 areas, there would be no need to re-survey the sample quadrats previously examined.

40
41 The BLM is in agreement that disturbed lands are preferred for development over pristine
42 lands, where possible. The BLM in Arizona is focusing on disturbed lands in its RDEP, which is
43 currently in NEPA review between the Draft and Final Solar EIS stage.

1 **3.15.19 Native American Concerns**

2
3
4 **3.15.19.1 Requests for Exclusions Related to Native American Concerns**

5
6 **Summary:** Several commentors suggested that areas of concern to Native Americans
7 be excluded from future solar energy development as expressed in the ethnographic studies
8 conducted in support of the Solar PEIS. These included several SEZs and specific locations,
9 mostly within variance lands, and generalized areas, such as dry lakes, dunes, washes, and
10 playas.

11
12 **Response:** Some of the areas mentioned by the commentors as having sensitive cultural
13 resources were reduced in size or are no longer included in the variance lands and were added to
14 the exclusion areas. Some SEZs were dropped and are now considered variance areas; others
15 are excluded. However, many of the suggested areas have not been identified by the BLM as
16 exclusion areas, and if interest is expressed in those areas of concern, under the proposed Solar
17 Energy Development Program, pre-application meetings between the BLM and the prospective
18 applicant would be held to discuss those conflicts prior to submittal of a formal application. If
19 the applicant chooses to go forward, knowing the cultural issues to be faced, site-specific
20 Section 106 review will be conducted for the project. The BLM will require the completion of
21 inventory, evaluation, determinations of effect, and treatment in accordance with the Solar PA,
22 including consultations with the SHPO and affected tribes. The public will have an opportunity
23 to comment through the project-specific NEPA process.

24
25
26 **3.15.19.2 Impact Assessment for Native American Concerns**

27
28 **Summary:** Concerns over possible impacts on cultural sites, plant-gathering areas,
29 hunting areas, song and story sites, and trail systems were mentioned. Several commentors raised
30 concerns about the cumulative analysis, including conclusions based on numbers of acres
31 affected, the need for a BLM plan for identifying concerns of tribes about cumulative impacts
32 and providing a timeline, and the idea that the importance of sites in some cases can be based on
33 how different sites relate to one another (interconnectivity) and that looking at SEZs in isolation
34 is problematic. One commentor suggested that dust hazards and climate change be considered for
35 the cumulative effects analysis; the commentor indicated that the area of potential effect should
36 include an area up to 100 mi (161 km) for cumulative effects and include a feasibility study for
37 industrial development and a wind study for fugitive soil effects. One commentor was concerned
38 about consideration of impacts on sacred sites for socioeconomic and cultural reasons because of
39 their significant religious importance, not just for their history. One commentor expressed
40 concern over consideration of impacts on the cultural values of several-generation, non-Native
41 American residents. Developers want to know how to handle impacts on unmapped tribal
42 resources and on experiences to users of tribal resources near or visible from potential solar
43 development areas.

44
45 **Response:** The Solar PEIS acknowledges that the locations of important cultural sites
46 and use areas, including traditional cultural properties, are being discussed as part of ongoing

1 government-to-government consultations and that these properties would be addressed on a
2 project-by-project basis. The Solar PEIS attempts to cover the larger aspects of traditional
3 landscape and interconnectivity of trails in the SEZ sections, as appropriate, and acknowledge
4 that impacts do not stop at the boundaries of the SEZs and must be considered during future
5 project-specific NEPA analyses. Also, more targeted descriptions of further analysis needed for
6 the SEZs was provided in the Supplement to the Draft Solar PEIS, and the Final Solar PEIS was
7 updated with results of studies conducted after the Draft was issued to address some areas of
8 high potential impact (many of which were eliminated as SEZs, including several SEZs in their
9 entirety, for example, Delamar Valley, East Mormon Mountain, Iron Mountain, and Pisgah).

10
11 The programmatic cumulative impact analysis in the Draft and Final Solar PEIS
12 considered the impacts of solar development up to the RFDS level, in conjunction with other
13 ongoing and reasonably foreseeable actions in the study area. For the SEZs the cumulative
14 impact analysis considers all proposed renewable energy projects that have a good probability
15 of being constructed (defined as projects having firm near-term plans and environmental
16 documentation). Any additional analyses of cumulative impacts would be addressed at a project-
17 specific level, as required by NEPA. Climate change was addressed in several sections of the
18 Draft Solar PEIS (Section 4.11.3 on GHG emissions and climate change; Section 5.11.2.4 on
19 albedo effects; Section 5.11.4 on the impacts of GHG emissions; Section 6.5.1.2.2 on trends in
20 climate change and corresponding effects on ecosystems; and Section 6.5.2.10.2 on the
21 cumulative impacts on global climate change from solar development. While a wind study is
22 beyond the scope of the Solar PEIS, the concerns mentioned in the comment regarding fugitive
23 dust/soil hazards are considered in the Solar PEIS (Section 5.7 on soil resources; Section 5.10 on
24 fugitive dust impacts on wetlands, vegetation, and wildlife; Section 5.11 on air quality; and
25 Section 6.5.2 on cumulative effects).

26
27 Mandatory pre-application meetings among applicants, the BLM, and stakeholders,
28 including affected tribes, will help the developers address potential impacts on unmapped tribal
29 resources and user experiences prior to project approval.

30 31 32 **3.15.19.3 Design Features for Native American Concerns/Resource Avoidance**

33
34 **Summary:** One commentor asked how the agencies will address proposed projects that
35 are adjacent to important cultural resources, like traditional cultural properties and sacred sites.
36 The tribes agreed that sacred sites and objects be avoided, but they objected to the use of the
37 phrase “when possible.” Avoidance of areas containing cultural and historic resources and sacred
38 sites should be a primary objective and should always be possible. One tribe no longer wants to
39 work with the BLM to mitigate sites because they think that the BLM has over-reached in taking
40 the land and using it for development. It was requested that the government take appropriate
41 steps to protect the Indian Pass area in perpetuity and recommended that BLM staff work with
42 the tribes to incorporate the cultural sensitivity map under development for the DRECP for
43 avoiding the most sensitive places.

44
45 **Response:** BLM’s preference is to avoid adversely affecting any traditional cultural
46 property or sacred sites. However, not every traditional cultural property or sacred site can be

1 considered an historic property eligible for consideration under Section 106 of NHPA. Even
2 when such properties are considered eligible for nomination to the NRHP and those considered
3 historic properties under NHPA, avoidance of adverse effects on all historic properties is not
4 required by the Section 106 process. Whether sites are within development areas or adjacent to
5 them, if there is a potential for effect, that effect must be considered and addressed during the
6 NEPA process in order for the BLM to be in compliance with Section 106 of NHPA. There is no
7 difference in the process for sensitive resources adjacent to proposed projects and the process for
8 those that are within the project footprint. Avoidance is the preferred mitigation strategy, but for
9 circumstances that may arise that do not allow for avoidance, the phrase “when possible” is used.

10
11 The Indian Pass area has been identified by the Quechan as a sacred area of great
12 importance to the tribe. Parts of Indian Pass have been excluded from the variance area proposed
13 in the Final Solar PEIS. Development of or in the vicinity of non-excluded areas would require
14 application of the requirements of the variance process for any future solar energy applications.
15 The BLM will bring all affected tribes into any pre-application meetings that involve areas near
16 Indian Pass, so the tribes’ concerns can be carefully considered prior to a developer’s submission
17 of an application. Exclusion of lands in the vicinity of Indian Pass may be considered at that time
18 as more specific information about tribal concerns and proposed project details are discussed.

21 **3.15.19.4 BLM Alternatives Related to Native American Concerns**

22
23 **Summary:** Many commentors expressed a preference (for [e.g., limit development to the
24 SEZs] or against) the various alternatives presented in the Solar PEIS as related to treatment of
25 cultural and natural resources of concern to Native Americans or made comments regarding
26 flaws in the alternatives analysis. It was thought there were too many opportunities for future
27 modification to the exclusion boundaries based on pending consultations, so the public received
28 no clear understanding of the geographic scope and no meaningful comparison among
29 alternatives. It was suggested that the comparison of alternatives be quantified so that, for
30 example, the amount of land of Native American significance that would be affected for each of
31 the alternatives was provided, or the acres of wetlands affected. Also, there was disagreement
32 that the impacts would be similar under each of the alternatives when so much more land
33 (30 times more) is available for development under the development alternative. It was noted
34 that none of the alternatives indicate disturbed lands, such as brownfields, as part of their siting
35 selection criterion, which was a key criterion of the CDRECP. Sensitive lands should not be
36 included within SEZs. Distributed and rooftop solar were suggested.

37
38 **Response:** Preferences (in support and in opposition) are acknowledged but do not result
39 in changes to the Final Solar PEIS and are not responded to further. Regarding the comparison of
40 alternatives and the Solar PEIS statement that impacts on resources of significance to Native
41 Americans would be similar, the RFDS has only a set number of acres that would reasonably be
42 developed in a given time frame, and although one alternative has more lands available, the same
43 amount of land is anticipated to be developed under the RFDS regardless of the alternative
44 chosen. Under the variance process, the same design features would be implemented on the same
45 amount of land indicated in the RFDS, in addition to pre-application meetings (with tribes

1 invited to be present) for eliminating sensitive areas from consideration, thus resulting in similar
2 levels of impact as that within SEZs.

3
4 In the Supplement to the Draft Solar PEIS, the BLM modified its preferred alternative to
5 emphasize its commitment to the concept of SEZs. Efforts are being made to ensure that SEZ
6 locations minimize conflicts with other resources, and incentives to locate projects within SEZs
7 were outlined. The BLM has proposed that solar ROW grants be issued on a competitive basis,
8 and extra weight will be given to those projects proposed on previously disturbed lands. In
9 protocols to establish new SEZs, the Supplement emphasizes the importance of using previously
10 disturbed lands. While the BLM will allow for development of solar projects outside of the
11 SEZs, applicants would be required to meet strict requirements to prove that their projects are
12 located within areas of low resource value and minimal conflict; minimize environmental harm;
13 cannot be located within SEZs; and minimize impacts on water resources. The proposed SEZ
14 Identification Protocol in the Final Solar PEIS highlights the consideration of degraded,
15 disturbed, and/or previously disturbed lands as part of all future processes to identify new or
16 expanded SEZs. The proposed variance process also provides for favorable consideration of
17 ROW applications on disturbed lands.

18 19 20 **3.15.19.5 Section 106 and Native American Concerns**

21
22 **Summary:** Commentors were concerned over the lack of cultural resource surveys
23 within most of the SEZs. They stressed the need for conducting Class III surveys and the
24 importance of completing required consultation with SHPOs and affected tribes and the
25 Section 106 process prior to development. One commentor requested that the BLM show its
26 compliance with Section 106. Some commentors wanted completion of cultural surveys,
27 ethnographic studies, and landscape level analyses prior to SEZ designation and publication of
28 the Final Solar PEIS, and at least Class II sample surveys prior to future SEZ identification.
29 Some concern was expressed over the amount of land being surveyed and whether 5% was still
30 inadequate; it was thought at least 10% was needed and 20% should be required for future
31 proposed SEZs. There was also concern over the use of pristine desert environments and a
32 preference for the use of previously disturbed lands.

33
34 **Response:** As a result of these concerns over low levels of previous cultural survey
35 within the SEZs, the BLM issued contracts for the completion of cultural surveys of 5% of lands
36 within several of the SEZs in California, Nevada, and Arizona, as specified in the SEZ sections
37 of the Final Solar PEIS. The current areas under survey are in addition to any lands previously
38 surveyed in order to bring the SEZs closer to a 10% survey coverage level (e.g., after these new
39 surveys are completed, approximately 9% of the Millers SEZ will have been surveyed to
40 professional standards; for the Brenda SEZ, with no prior documented cultural survey, the
41 coverage will at least be 5%). Although data from these recently contracted surveys will not be
42 available for use in the Final Solar PEIS, the results will better inform future applications for
43 development within these SEZs. The sample surveys will help the BLM determine the cultural
44 sensitivity of various ecozones. Results from the surveys will enable BLM managers to
45 anticipate where conflicts between solar development and cultural resources can be expected, so
46 that they can direct development to areas where disturbances to significant cultural resources will

1 be minimized. As money becomes available, it is possible that additional work, including the
2 possible generation of predictive models and ethnographic studies, could be funded within the
3 SEZs in the future. Ethnographic studies were completed for several SEZs in Nevada and Utah,
4 and the results were incorporated into the Final Solar PEIS. Additional cultural and ethnographic
5 work is also being conducted for the SEZs in Colorado, as indicated in the SEZ sections of the
6 Final Solar PEIS.

7
8 The BLM is committed to meeting its obligations under Section 106 of NHPA and
9 has developed a Solar PA with the six SHPOs from the states covered in this Solar PEIS and
10 ACHP. Affected tribes and the National Trust for Historic Preservation have been invited to
11 be consulting/concurring parties on the PA. The PA specifies how the BLM will continue its
12 consultation with SHPOs, tribes, and ACHP in order to meet its Section 106 responsibilities for
13 future solar energy projects. This approach for meeting an agency's Section 106 compliance
14 obligations is authorized by 36 CFR 800.4(b)(2) and 36 CFR 80014(b)(3). Once finalized, the
15 Solar PA will be available on the project Web site (<http://solareis.anl.gov>).

16
17 Pre-application meetings are required under the Solar Energy Development Program and
18 will be helpful for applicants wishing to apply for development of a project on lands not yet
19 surveyed for cultural resources. The BLM and other stakeholders, including affected tribes, will
20 be able to provide some sense of the potential for significant resources within the area during the
21 pre-application process.

22
23 The BLM is in agreement that disturbed lands are preferred for development over pristine
24 lands, where possible. The BLM in Arizona is focusing on disturbed lands in its RDEP, which is
25 currently in NEPA review between the Draft and Final EIS stage.

26 27 28 **3.15.19.6 Consultation with Native American Tribes**

29
30 **Summary:** Several commentors mentioned the need for consultation, the lack of
31 meaningful consultation, the failure to properly or adequately consult, the incompleteness of the
32 consultation, and the subsequent legal challenges being faced by the BLM for the previous solar
33 projects it permitted. In addition to letters, it was requested that BLM participate through phone
34 calls, conference calls, face-to-face meetings, and walking the land. Relationships built around
35 regular meetings and informal involvement with local tribes will lead to more effective
36 consultation and tribal input on specific projects. For California, it was stated that consultation
37 with tribes and interested Native American consulting parties on the list of Native American
38 Contacts maintained by the Native American Heritage Commission be conducted in compliance
39 with the requirements of NEPA and Section 106 of NHPA. The Quechan restated its interest in
40 meaningful consultation between the federal government and the Quechan Indian Nation prior to
41 an ROD.

42
43 Frustration with the consultation process was expressed, especially at the length of the
44 comment and consultation periods imposed by the BLM, which did not offer some tribes a
45 reasonable amount of time to have their experts review the large amount of technical material
46 presented; the delayed receipt of the documents for review; and the inability of the existing

1 process in avoiding sensitive cultural resources. There was also no time to recommend or
2 advocate for alternatives early in the process. Consultation was requested in the event that human
3 remains or artifacts were encountered that fall under NAGPRA guidelines. A plan for ongoing
4 consultation was requested as well as pursuit of cooperating agency agreements with affected
5 tribes. Objections were raised to any process that would defer consultation until the future after
6 approval of a project.

7
8 In general, it was suggested that more in-depth interviews and oral histories be conducted
9 to gather tribes' concerns and learn how the landscapes were used. A comment was received that
10 future consultation on the Solar PEIS cannot be limited to tribes that commented on the Draft
11 Solar PEIS. One commentor expressed concern that the pre-application process did not include
12 cultural resources consultation. It was recommended that consultation cover all aspects of
13 mitigation, including curation of any recovered materials and how and where recovered materials
14 are to be maintained. One commentor does not believe that tribal comments from previous
15 projects in the area are relevant to the Solar PEIS and thinks that those comments should not be
16 mentioned in the PEIS text. Several tribes requested notification of any activities occurring near
17 their lands. The Hopi Tribe supported the other tribes that discussed connectedness of sites and
18 the surrounding lands and landscape and stated that minimizing adverse effects on important
19 heritage resources could be accomplished only through consultation.

20
21 **Response:** In response to concerns over BLM tribal consultation practices,
22 IM No. 2012-032, "Native American Consultation and Section 106 Compliance for the Solar
23 Energy Program Described in Solar Programmatic Environmental Impact Statement," was issued
24 in December 2011 to improve tribal consultation procedures for the solar program. The BLM
25 will consult with federally recognized Indian tribes early in the planning process to identify
26 issues and areas of concern regarding any proposed solar energy project. Such consultation is
27 required by NHPA and other authorities and is necessary to determine whether construction and
28 operation of a project is likely to disturb traditional cultural properties or sacred sites, impede
29 access to culturally important locations, disrupt traditional cultural practices, affect movements
30 of animals important to tribes, or visually affect culturally important landscapes. Such
31 consultation shall cover planning, construction, operation, and reclamation activities. The BLM
32 will work with tribes during consultations to establish reasonable schedules for their input on
33 important projects, recognizing their limited resources and the time necessary to thoroughly
34 review a project. Agreements or understandings reached with tribes shall be carried out in
35 accordance with the terms of MOAs or State-Specific Agreements as defined within the Solar
36 PA. The BLM will also consult with Indian tribes under the terms of NAGPRA. Any Historic
37 Properties Treatment or Mitigation Plans, including future disposition of recovered materials,
38 will take such consultations into account. Consultation will continue beyond the ROD for this
39 Solar PEIS.

40
41 BLM IM No. 2011-061, "Solar and Wind Energy Applications—Pre-application and
42 Screening," issued February 2011, describes the pre-application and screening procedures
43 required for solar and wind energy applications. Agency policy requires at least two pre-
44 application meetings with the applicant. Their purpose includes the identification of needed
45 cultural resource studies. Tribes will be asked to participate. Screening criteria encourage

1 responsible BLM line officers to prioritize the processing of applications for areas with the
2 lowest potential for conflicts, including cultural resource concerns.

3
4 Appendix K summarizes the tribal consultation efforts undertaken by the BLM
5 throughout the development of the Solar PEIS. Consultation efforts were not restricted to tribes
6 that commented on the Draft Solar PEIS.

7 8 9 **3.15.19.7 Ethnographic Studies**

10
11 **Summary:** The issue was raised that potential negative impacts on traditional cultural
12 landscapes were not assessed because ethnographic studies were not completed. Several
13 commentors requested that ethnographic studies be conducted early in the process and that they
14 be required for all future projects. It was also suggested that more in-depth interviews and oral
15 histories should be conducted to gather tribes' concerns and learn how the landscapes were used.

16
17 **Response:** Ethnographic studies were completed for several SEZs in Nevada and Utah,
18 and the results were incorporated into the Final Solar PEIS. The completed ethnographic report
19 is available in its entirety on the project Web site (<http://solarpeis.anl.gov>). Additional cultural
20 and ethnographic work is being conducted for the SEZs in Colorado, as indicated in the Colorado
21 SEZ sections of this Final Solar PEIS. As money becomes available, it is possible that additional
22 ethnographic studies could be funded within the remaining SEZs in the future.

23
24 For future applications, government-to-government and project-specific consultations
25 with tribal staff usually provide adequate opportunities for tribes to identify traditional cultural
26 properties or sacred sites. However, there may be times when responsible line officers need new
27 ethnographic research to adequately consider the effects of solar development on issues and
28 resources of concerns to tribes. BLM Field Office cultural staff, including specialists assigned
29 to Renewable Energy Coordination Offices where present, in consultation with their Deputy
30 Preservation Officer, will recommend to responsible BLM line officers whether new
31 ethnographic data are required for a given solar application. Should new ethnographic research,
32 studies or interviews be judged as necessary, the BLM cultural staff, in consultation with tribal
33 officials, will recommend to BLM line officers the appropriate scope of the study, as well as
34 provisions for safeguarding data confidentiality if requested by the tribe.

35 36 37 **3.15.19.8 Requested Corrections to Analysis for Native American Concerns**

38
39 **Summary:** Several comments contained background information that may be relevant
40 for the Solar PEIS and/or corrections to information presented in the Draft Solar PEIS.

41
42 **Response:** New information and corrections presented in comments that could be
43 verified were incorporated into the Final Solar PEIS.

44
45 One comment requested correction of the distances between tribes and SEZs. To clarify,
46 what is presented in the Draft Solar PEIS text is a description of the SEZs relative to the nearest

1 tribal land claims (judicially established as traditional tribal territory), as defined by the Indian
2 Claims Commission, and an affected environment background establishing the affected tribes in
3 the region for consultation purposes and has no direct bearing on the impact analysis of
4 important landscapes and resources that could be affected by development in the SEZ. No
5 assumptions were made in the impact analysis limiting a tribe's concerns to a bounded area;
6 cultural landscapes are considered to the extent they have been made known to the BLM that
7 they are significant through comments, consultation, and previous ethnographic studies.
8 Distances to prominent features are also presented throughout the Solar PEIS to assist the reader
9 in independently verifying the potential for visual impacts on these important places.

12 3.15.19.9 Other Native American Concerns

14 **Summary:** Generalized concerns were expressed over impacts on water availability,
15 water quality, and water rights; impacts on lands and realty; air quality impacts; dust effects on
16 wildlife, impacts on wildlife migration pathways and on wildlife of cultural significance, like
17 bighorn sheep and desert tortoise; and impacts on low-income minority tribal reservations and
18 environmental justice. Specific concerns were raised about ricegrass fields, sagebrush,
19 wolfberries, and other plants if the tribes would be unable to access developed areas to gather the
20 plants required for medicine, ceremonies, and food. There were comments on how the BLM
21 should avoid controversial zones and corridors by bringing projects to tribes to develop on their
22 reservations for employment and economic development. It was thought that several tribes in the
23 region should have been considered and interviewed to gather their concerns and that the
24 environmental justice analysis should include economic, cultural, spiritual, and other changes
25 that can have an adverse effect on tribal populations. Additional comments included a request for
26 the new visual resources inventory data for the BLM field offices in Nevada.

28 **Response:** More detailed responses to all of these comments can be found under the
29 specific topic area (e.g., water resources, air quality, wildlife, and so on). The availability of
30 water resources must be discussed within individual solar projects' Plans of Development for
31 review by BLM staff. The BLM intends to critically evaluate the availability of water to meet
32 proposed solar uses described in each application. As part of the pre-application process, all
33 applicants must demonstrate that their proposed project will minimize impacts on water
34 resources and not impair other reserved water rights. Plans of Development will be shared with
35 the public and affected tribes as part of consultation efforts. During pre-application meetings,
36 tribal officials will be asked to consult about a variety of issues of concern to the tribes, including
37 potential effects of development on tribal water resources. Specific concerns over traditional
38 plants, like ricegrass fields and mesquite groves, were incorporated into the text based on results
39 of an ethnographic study conducted in support of the Solar PEIS covering some SEZs in Nevada
40 and Utah. The completed ethnographic report is available in its entirety on the project Web site
41 (<http://solareis.anl.gov>). Where applicable, SEZ-specific design features were added to the text to
42 address the mitigation of impacts on traditional species.

44 Consultation with tribes regarding all these topics will continue to occur prior to approval
45 of solar energy development projects under BLM No. 2012-032 "Native American Consultation

1 and Section 106 Compliance for the Solar Energy Program Described in Solar Programmatic
2 Environmental Statement,” and in accordance with the Solar PA.
3
4

5 **3.15.19.10 Policy Related to Native American Concerns** 6

7 **Summary:** Tribes expressed concern that the Class L (Limited Use) lands were included
8 in the development lands in the CDCA and utility-scale development is not compatible with the
9 reason behind the designation of those lands by Congress. Several commentors noted that there
10 is no legal mandate for utility-scale energy development on public lands, and the administration
11 should not allocate public land resources without congressional approval; the CDCA has its own
12 legal mandate. There was concern that opening up too much land for utility-scale solar energy
13 development will result in the same problems and inefficiencies as the BLM has under existing
14 policies and procedures, exemplified by the amount of public lands identified as appropriate for
15 development that includes traditional territory of the tribes and contains resources that are clearly
16 not appropriate for development. It was suggested that the BLM wait on approving any
17 additional active applications until the Solar Energy Program is in place. Concern was raised
18 about the ability to review and track applications without LR2000 available online since the
19 BLM State Office was too far to travel to for the tribe. It was questioned why Bureau of Indian
20 Affairs was not a cooperating agency. One commentor expressed concern that a county, as a
21 cooperating agency, could speak on behalf of the tribes, which are not cooperating agencies, just
22 because the reservation was in that county. There was some general acknowledgment that solar
23 is preferred over fossil fuels and nuclear power, but that distributed generation should be the
24 focus of U.S. energy policy, not utility-scale, and that just because it is *clean* does not mean it
25 is *green*. A suggestion was made to coordinate BLM’s planning with EPA’s Repowering
26 America’s land: Siting Renewable Energy on Potentially Contaminated Land and Mine Sites.
27 A comment was made about paying landowners for using their lands and the tribes may come
28 forward with some of their land.
29

30 **Response:** Responses to these comments from tribes can be found in the following
31 categories: Policy: California Desert Protection Act and Plan; and Native American Concerns,
32 Tribal Lands.
33
34

35 **3.15.19.11 Tribal Lands** 36

37 **Summary:** Comments stated a concern that the Draft Solar PEIS did not treat tribes as
38 sovereign nations relative to renewable energy portfolio requirements as a driver for allocating
39 solar project demand. The commentors also stated the opinion that the Draft Solar PEIS did not
40 consider the interests of tribes in getting priority right-of-first-refusal/and or option(s) to acquire
41 or the right to use adjacent/proximate BLM surplus properties to tribal holdings and/or historic
42 range for energy projects or other uses . The EPA encouraged the BLM and the DOE to identify
43 disturbed, degraded, and contaminated sites on tribal lands that could be suitable for large-scale
44 solar energy development.
45

1 **Response:** The BLM has clearly stated the role of tribes in the authorization process
2 outlined in Chapter 2 of this Final Solar PEIS. The presence of solar energy development or
3 zones on tribal lands will be considered in the process of identifying the need for new SEZs
4 (see SEZ Identification Protocol, Section A.2.6 of Appendix A). Consideration of disturbed,
5 degraded, and contaminated lands and the ability to coordinate development with nonfederal
6 land owners has been included in both the variance process and the SEZ Identification Protocol.
7 Tribal consultation will continue as solar energy development on BLM-administered lands
8 continues.

11 **3.15.20 Socioeconomics**

14 **3.15.20.1 Local Economic Benefits**

16 **Summary:** These comments addressed local economic development benefits, such as
17 support for long-term, well-paid jobs for local craft workers in local communities, the need to
18 analyze smaller scale projects, and general support.

20 **Response:** While the purpose of the socioeconomic assessment in the Solar PEIS is to
21 estimate the impacts of the complete build-out of available acreage at each SEZ location on the
22 region-of-influence (ROI) surrounding it, in order to provide a conservative estimate of these
23 impacts, it was assumed that more than one project could be constructed simultaneously. It may
24 well be the case, however, that construction of individual solar projects only overlap or they may
25 be constructed consecutively, meaning that, although employment at individual projects could be
26 relatively short term, given the construction timelines, employment may be possible on multiple
27 projects over a longer time horizon when multiple projects are built at any given SEZ. Although
28 smaller scale projects may result from the development of portions of proposed SEZ acreage,
29 especially at larger SEZ locations, the purpose of the Solar PEIS was to consider impacts of
30 build-out at each SEZ, rather than impacts of locally distributed solar development off BLM
31 land.

32
33 Solar development projects are likely to create significant direct construction
34 employment benefits for residents in communities in the ROI at each SEZ. Based on data from a
35 number of existing sites with a range of solar technologies, construction jobs are likely to
36 produce annual incomes that are, for many of the ROIs, significantly higher than current average
37 annual incomes. As the higher-than-average wages and salaries of direct employees are spent in
38 each ROI, indirect jobs will be created throughout the economies in which each SEZ is located.
39 Additional employment and incomes will also be generated through the procurement of goods,
40 materials, equipment, and services within each ROI during the construction phase of each
41 project.

42
43 Revenues from ROW authorizations on the public lands, including solar energy ROW
44 authorizations, are deposited in the General Fund of the Treasury. There is no authority under
45 FLPMA or other laws that provides for any other distribution of revenues to state or local

1 governments. Special legislation would be required to provide for any other distribution of
2 revenues.

3
4 The BLM has identified programmatic design features intended to minimize and/or
5 mitigate potential negative socioeconomic impacts in local communities. Such design features
6 could include training programs to ensure that the employment of a local labor force in the
7 construction and operation of solar projects is as large as possible, particularly at the more
8 rural SEZ locations, where there may be few potential employees in the required construction
9 occupations, given the economic profile of ROIs at rural locations, where agriculture, mining
10 and services may be the largest current employing sectors. To the extent that local labor resources
11 and vendors can be utilized on solar projects during both construction and operation, solar
12 developments could contribute to reducing unemployment that may have resulted from national
13 recession, or declining demand for the products of ROI sectors traditionally providing significant
14 local employment opportunities.

15
16 Although the BLM may be able to encourage the implementation of accepted labor
17 standards and practices and the use of vendors within the ROI as much as possible, given that all
18 solar development projects covered in the Solar PEIS would be built by private developers, it
19 may not be possible for the BLM to provide more than general guidance in this respect. Labor
20 agreements between individual developers and trade councils and unions at existing solar sites
21 could be used to predict arrangements that might occur at the project-specific level, and the
22 extent to which ROI vendors are used. These decisions would be part of the review process
23 conducted in additional NEPA analyses. While requiring project developers to undertake
24 preferential hiring of residents and to use vendors within the county or state where a solar energy
25 project is proposed are attractive as a means of addressing the project's socioeconomic impacts,
26 these requirements would likely be held to violate the interstate commerce clause.

27
28 Analysis undertaken for the Solar PEIS indicates direct and indirect employment growth
29 associated with development of solar facilities is unlikely to lead to development on a scale
30 likely to precipitate a “boom-bust” economic development trajectory at the majority of SEZ
31 ROIs. Proposed solar development projects in many of the more rural locations are relatively
32 small compared to proposed solar capacity at SEZs closer to larger urban areas, meaning that the
33 scale of the impact on the economies of each ROI is also relatively small. Direct and indirect
34 employment growth for the trough technology, the most labor-intensive technology analyzed,
35 would be less than 10% of the forecasted baseline level of employment in the peak year of
36 construction in all but one of the ROIs, and would be less than 5% in the majority of ROIs. In
37 addition, the short-term nature of construction, solar development projects in most ROIs are
38 unlikely to lead to significant expansion in local economic infrastructure, with firms likely to
39 prefer to use existing labor resources working overtime, rather than expand production capacity
40 and hire and train additional employees. Moreover, in the more rural SEZ locations, much of the
41 required equipment and services would be procured outside the ROI at each SEZ.

42
43 In addition to the analyses of economic impacts included in the Solar PEIS, additional
44 analyses of impacts would be included as part of the site-specific NEPA review process
45 conducted for individual solar projects. Part of the process of performing additional
46 environmental and socioeconomic analyses could be an assessment of the impacts of

1 smaller-scale projects and a phased approach to development. However, as the scale of
2 development at each SEZ is likely to be driven primarily by market factors, in particular the
3 financial viability of projects of specific capacities, the involvement of the BLM in this aspect of
4 solar development, and the extent to which subsequent NEPA analysis might consider a range of
5 proposed capacity level and development timelines, is likely to be limited.
6
7

8 **3.15.20.2 Socioeconomic Impacts on Local Government** 9

10 **Summary:** These comments addressed potential impacts on local governments from
11 solar development, such as benefits, mitigation agreements, planning, revenue sharing, payment
12 in lieu of taxes (PILT), infrastructure upgrades, and a phased approach to avoid “boom-bust”
13 cycles.
14

15 **Response:** The Solar PEIS estimates the impacts of proposed solar development projects
16 on local governments within the ROI surrounding each SEZ through the estimation of impacts on
17 local government and educational employment. The number of additional employees in both
18 categories is calculated by using estimates of the number of in-migrants arriving in each ROI at
19 the in the peak year of construction and in the first year of operations, based on existing levels of
20 service provision (number of employees per 1,000 population) for jurisdictions within each ROI.
21 The impact of solar development projects on property tax revenues from mitigation lands was
22 not addressed in the analysis undertaken for the PEIS, because the characteristics and location of
23 these lands are not known. Beyond the analyses of fiscal impacts included in the PEIS, additional
24 analyses of impacts would be included as part of the site-specific NEPA review process
25 conducted for individual proposed solar projects, including the magnitude and timing of impacts
26 on specific jurisdictions, the extent to which mitigation lands would be required, and the impacts
27 of their loss on property tax revenues.
28

29 The development of large energy-related projects can, as has happened in the past, lead
30 to the rapid expansion, followed by equally rapid contraction in economic activity, leading to
31 “boom-bust” socioeconomic impacts. Given the rural nature of many of the proposed SEZ
32 locations, which limits the number of locally available workers and the number in range of
33 occupations required, it is likely that a large proportion of solar construction workers would
34 temporarily locate in the ROI at each SEZ. The timing and magnitude of in-migration may mean
35 that local jurisdictions would be unable to adequately plan and fund infrastructure, public
36 services, and educational services to immediately cope with increases in service demand. There
37 may also be housing market impacts if insufficient public infrastructure is in place to support
38 sufficient private housing development. Local expansion in infrastructure and service provision
39 might then be quickly followed by potential overprovision of infrastructure and services, leaving
40 the remaining population burdened with a high tax bill to maintain the new level of provision.
41 The influx of large numbers of in-migrants could also lead to ongoing social impacts associated
42 with the transition from small community societies with traditional rural values, to larger
43 communities with urban values, often requiring a higher level of social and educational service
44 provision, and a larger supporting tax base. The extent to which social disruption impacts occur
45 would be partly a result of the number of in-migrants, and partly as a result of the extent of
46 differences between the social and cultural values of in-migrants and those of the local

1 population. Because the nature and magnitude of these impacts are difficult to estimate, no
2 mitigation measures are offered. Additional analyses of potential social impacts would be
3 included as part of the site-specific NEPA review process conducted for individual proposed
4 solar projects.

5
6 Analysis undertaken for the Solar PEIS indicates that population and direct and indirect
7 employment growth associated with development of solar facilities is unlikely to lead to
8 development on the scale required to precipitate a “boom” and then a “bust.” Population and
9 employment growth were less than 5% of the forecasted baseline level of employment in each
10 ROI in the peak year of construction in all the SEZs and less than 2% in the majority of the
11 ROIs. With relatively low rates of in-migration, it is also unlikely that social impacts, including
12 alcoholism, depression, suicide, social conflict, divorce, and delinquency would occur and would
13 not, therefore, require mitigation.

14
15 Revenues from ROW authorizations on the public lands, including solar energy ROW
16 authorizations, are deposited in the General Fund of the Treasury. There is no authority under
17 FLPMA or other laws that provides for any other distribution of revenues to state or local
18 governments. Special legislation would be required to provide for any other distribution of
19 revenues.

20
21 Although it is unlikely that the BLM would be able to require individual solar developers
22 to enter into mitigation agreements with local jurisdictions affected by solar development, there
23 are likely to be significant tax revenue benefits through rental and capacity payments that would
24 be made to the BLM by solar developers. Much of the revenues collected by the BLM from these
25 sources would be distributed to local jurisdictions affected by solar development, which use them
26 to provide additional services and infrastructure for local community increases in population. In
27 addition to the analyses of fiscal impacts included in the Solar PEIS, other analyses of impacts
28 would be included as part of the site-specific NEPA review process that would be conducted for
29 individual proposed solar projects, and might provide information on the magnitude and timing
30 of impacts on local government service provision and employment and on housing, specific
31 infrastructure and services, such as regional water providers. Such a review may also include a
32 variety of additional socioeconomic mitigation measures and revenue sources available to the
33 BLM and local jurisdictions, such as PILT, leasing versus ROW designation, revenue sharing,
34 making it possible for individual jurisdictions to develop more detailed expenditure plans to cope
35 with population increases. Because the nature of specific mitigation measures developed at the
36 project specific level was beyond the scope of the Solar PEIS, none were included in the set of
37 design features developed for this part of the NEPA review. Additional NEPA analyses would
38 also address the issue of the impacts of infrastructure upgrades and interconnections on
39 transmission system reliability and on the amount of private land that would be required for
40 individual solar projects.

41
42 While the purpose of the socioeconomic assessment in the Solar PEIS is to estimate the
43 impacts of the complete build-out of available acreage at each SEZ location on the ROI
44 surrounding it, in order to provide a conservative estimate of these impacts it was assumed that
45 more than one project could be constructed simultaneously. It may well be the case, however,
46 that construction of individual solar projects only overlap or that projects may even be

1 constructed consecutively, meaning that although the impacts on local government of individual
2 projects could be relatively short term, given the construction timelines, multiple projects may be
3 constructed over a longer time horizon at any given SEZ, making it possible to plan for a slower,
4 more sustained increase in population, rather than larger increases followed by sharper decreases.
5

6 To the extent that there is a relationship between the scale and pace of proposed
7 development and anticipated adverse socioeconomic impacts, controlling the pace of
8 development “to minimize rapid, disruptive social change” is recognized as an appropriate
9 mitigation measure in BLM’s *National Environmental Policy Act Handbook*:

10
11 “Socioeconomic impacts are usually indirect and largely fall on
12 communities and local government institutions, by definition located outside
13 BLM-managed lands. While some mitigation strategies are within the BLM’s
14 control, (such as regulating the pace of mineral exploration and development to
15 minimize rapid, disruptive social change), most mitigation strategies require
16 action by other government entities . . .” (*NEPA Handbook*, H-1790-1,
17 Section 6.8.4, page 62, 2008).
18

19 Although the transportation mode(s) used to deliver materials, equipment, and supplies to
20 each SEZ was not analyzed, the impacts of solar construction and operation on sales taxes arising
21 from the procurement of and services assume that sales taxes on materials and equipment
22 purchased in each ROI would be paid to the state in which each SEZ is located. While sales taxes
23 are often distributed to local jurisdictions on the basis of local share of state population, given
24 that the analysis undertaken for the Solar PEIS was intended to provide an overview of the
25 impacts that might be expected, an analysis of the distribution of solar-generated sales tax
26 revenues to individual jurisdictions in the ROI around each SEZ was not undertaken. Because
27 some portion of materials and equipment would be purchased outside each ROI, the value of
28 sales taxes generated in each ROI would be less than if all capital items were purchased locally.
29

30 Individual solar projects would be subject to additional analyses, including the timing and
31 sources of funding for local jurisdictions to support the additional growth in expenditure and
32 employment likely with solar developments, and the impact of changes in personal and property
33 taxes.
34

35 36 **3.15.20.3 Socioeconomic Impacts of Road Construction**

37
38 **Summary:** Some comments addressed concerns over road construction impacts and the
39 analytical assumptions used in the Solar PEIS to evaluate them.
40

41 **Response:** The analysis undertaken for the Solar PEIS assumes that all access roads
42 constructed at each SEZ would be new construction, not upgraded existing roads, and that access
43 roads would be paved. The analysis assumes that these roads would be maintained by the
44 appropriate state or county jurisdictions and provides data on the impacts on local public service
45 employment that would occur, some of which result from an expansion in the responsibilities of
46 local and state bodies with respect to road maintenance assumed in the analysis. Assumptions on

1 expenditures per mile that would be expected with the construction of new, paved access roads
2 were based on Arkansas Highways ([http://www.arkansashighways.com/roadway_design_](http://www.arkansashighways.com/roadway_design_division/Cost_per_Mile_JULY_2009.pdf)
3 [division/Cost_per_Mile_JULY_2009.pdf](http://www.arkansashighways.com/roadway_design_division/Cost_per_Mile_JULY_2009.pdf)).
4

5 Impacts presented in the Solar PEIS are based on estimates of the road lengths that would
6 be required to connect an SEZ to the existing road network and include both direct and indirect
7 impacts of construction and maintenance. Because the impacts of access road maintenance
8 presented in the Solar PEIS would not vary significantly depending on the identity of the
9 responsible jurisdiction, the possibility that individual solar developers could provide payments
10 to local jurisdictions to support access road maintenance, or that solar developers maintain access
11 roads themselves, does not significantly affect the impacts presented and is not included in the
12 analysis undertaken for the Solar PEIS.
13

14 In addition to the analyses of transportation impacts included in the Solar PEIS, other
15 analyses of impacts would be included as part of the site-specific NEPA review process
16 conducted for individual solar projects when specific project size and location and resulting
17 transportation needs are known.
18
19

20 **3.15.20.4 Socioeconomic Impacts on Recreation**

21

22 **Summary:** Commentors addressed recreational impacts, including the analytical
23 assumptions used for the Solar PEIS analyses, the time horizon assumed for impacts, planning,
24 compensation, and mitigation.
25

26 **Response:** The economic baseline established for recreational activities in each ROI
27 identifies a number of sectors in which recreational expenditures would occur, including sporting
28 goods retailers, automotive rental, hotels, recreational vehicle parks, campsites, and restaurants.
29

30 Although the location of each SEZ was chosen in order to avoid recreational lands being
31 used for solar development, it is accepted that recreational activities in the vicinity of each SEZ
32 could be affected by solar development, in particular if the visibility of solar developments from
33 important recreational facilities or resources affects hiking, wildlife watching, camping, and
34 other activities.
35

36 A significant problem in the assessment of impacts of large solar facilities on recreation
37 lies in the measurement of recreational visitation, especially visitation related to specific
38 recreational activities, and the extent to which individual activities are affected by aspects of
39 solar development, by changes in the visual environment with respect to solar facilities and
40 related infrastructure, such as transmission lines and increases in traffic, and by changes in the
41 overall level of local economic development, property values, and quality of life. Moreover,
42 visitation rates associated with various recreational activities, such as OHV use, bird-watching,
43 hiking, and so forth is often not measured, especially if there is no specific market transaction,
44 such payment of camping fees, even though there may be significant associated expenditure on
45 accommodations, gasoline, and vehicle and equipment rentals.
46

1 Comparison of the results of the IMPLAN model in the Solar PEIS, which assesses the
2 impacts of SEZ development on all recreational resources within each ROI, where there are
3 no accurate visitation data for all recreational activities, with the results of the NPS Money
4 Generation Model for Joshua Tree National Park, where visitation and expenditure data are
5 available, would yield only a partial assessment of overall impacts of solar development on
6 recreation and was not therefore undertaken for the Solar PEIS.

7
8 The Solar PEIS acknowledges that the influx of large numbers of in-migrants can lead
9 to ongoing social impacts associated with the transition from small community societies with
10 traditional rural values, to larger communities with urban values, which may fundamentally
11 affect quality of life in small rural communities. Section 5.18 of the Draft Solar PEIS provides
12 an analysis of the literature discussing the nature of these impacts.

13
14 In addition to the analyses of recreation-related impacts included in the Solar PEIS, other
15 analyses of impacts would be included as part of the site-specific NEPA review process
16 conducted for individual solar projects when specific project size and location and resulting
17 recreational impacts can be more specifically identified.

20 **3.15.20.5 Assumptions, Models, and Data Used for Socioeconomic Analyses**

21
22 **Summary:** Commentors addressed assumptions, models, and data used for the analyses,
23 including the IMPLAN model, ROI specifications, inclusion of the latest economic data, and
24 local and state tax rates.

25
26 **Response:** To capture a large proportion of impacts that would occur at each SEZ, an
27 ROI was established, including counties with urban areas in which solar construction and
28 operations workers were most likely to live and spend their wages and salaries, and in which
29 in-migrating workers were most likely to temporarily, in the case of construction workers, or
30 permanently, in the case of operations workers, reside. Because a number of SEZs were located
31 fairly close to larger metropolitan areas, Las Vegas for example, and even though longer daily
32 commuting trips were assumed, it was likely that these areas would offer more housing, public
33 service, education, and retail choices to higher paid construction workers than would areas closer
34 to each SEZ, the counties in which relevant larger metropolitan areas are located were included
35 in the analysis.

36
37 When a county that includes larger metropolitan area is included in an ROI for an SEZ,
38 the consequently larger labor pool would mean that fewer workers would likely in-migrate into
39 the ROI during construction and operation. Some more specialized workers would still be
40 required to move into the ROI from elsewhere, however, regardless of local unemployment rates.
41 The overall size of the ROI economy would also mean larger available overall ROI production
42 capacity; the greater likelihood that the various sectors needed to produce equipment, materials,
43 and services required for solar development would be present in the ROI; less spending
44 associated with solar development would be made outside the ROI, producing larger impacts
45 than if only the county in which the SEZ is located were included in the ROI.

1 Appendix M of the Draft Solar PEIS discusses the drawbacks of the IMPLAN model,
2 in particular, that it cannot measure inflation and supply shortages if local sectors and labor
3 resources cannot provide sufficient output and labor hours to support a particular project.
4 However, the analysis undertaken for the Solar PEIS assumes the importation of major capital
5 items at all SEZs based on the location of existing solar equipment vendors, and the in-migration
6 of workers in many of the occupations that would be required, based on existing data for solar
7 construction projects. Another drawback of the IMPLAN model is the absence of any allowance
8 for technical change and its impact on future changes in the economic structure of the ROI
9 around each SEZ. The Solar PEIS assumes that because the majority of the ROI economies are
10 growing fairly slowly, some have almost static growth rates, and many rely on a small number
11 of traditional industries, such as agriculture, mining, and services, in which it is reasonable to
12 assume that any technical change likely to occur will not fundamentally affect output and
13 employment, and with little movement of industries and firms in and out of the ROI, the
14 economic structure of each ROI during construction and operation of solar projects would be
15 similar that in the IMPLAN model for each ROI.

16
17 The economic baseline for each ROI used data current in August 2010. Many of the data
18 sources used are updated annually and sometimes monthly. However, it is not the case that the
19 impacts of construction and operation of solar facilities at each SEZ will change significantly
20 with more recent baseline data, only the magnitude of the impacts compared to the forecasted
21 baseline for the relevant peak construction year and first year of operations, forecasts that would
22 use more recent data than those presently included in the Solar PEIS.

23
24 The number of in-migrating workers is only partly based on prevailing unemployment
25 rates; the extent of availability of labor in the various occupational groups needed for the
26 construction and operation of solar facilities is also taken into account in estimating the extent
27 of in-migration into each ROI.

3.15.20.6 Property Values

31
32 **Summary:** Commentors expressed concern about potential loss of property value on
33 adjacent private land and changes in quality of life.

34
35 **Response:** While solar development of public land could affect property values on
36 adjacent land and in communities in the vicinity of solar development projects and associated
37 infrastructure, such as transmission lines, quantifying the extent and timing of property value
38 impacts is problematic due to the relatively small number property sales in rural areas. Housing
39 and land sales in small rural communities and surrounding areas are relatively infrequent,
40 making it difficult to establish the value of adjacent land or property in communities in the
41 vicinity of public lands used for development, before and after land has been included in an SEZ,
42 before and after construction has begun, and before and after operation of solar facilities has
43 started. Accordingly, Section 5.17 of the Draft Solar PEIS presents evidence impacts on property
44 values of a range of energy and other facilities for which sufficient property sales data have been
45 available to provide a qualitative assessment of the potential impacts of solar development.
46 Assessment of the potential for changes in the quality of life in communities in the vicinity of

1 potential solar development projects are also subject to data constraints. Such survey data,
2 obtained through telephone or mail questionnaires or through community focus groups, would
3 have to be collected before solar development projects occurred, during construction, during
4 project operation, and after decommissioning had taken place.

5
6 Additional data on changes in property values and in quality of life would be included as
7 practicable as part of the site-specific NEPA review process for individual solar projects. In
8 addition, the long-term monitoring and adaptive management plan for the Solar Energy Program
9 will likely include consideration of such factors in the vicinity of SEZs.

10 11 12 **3.15.20.7 Socioeconomic Impacts on Historic and Cultural Resources and Ranching**

13
14 **Summary:** Commentors expressed concern about loss of public access to historic and
15 cultural resources and about impacts on ranching communities.

16
17 **Response:** The construction and operation of solar facilities and related infrastructure,
18 such as transmission lines, may produce changes in the visual environment in communities in the
19 vicinity of solar development projects; changes in the quality of life, resulting from increases in
20 traffic and in-migration of population from other areas of the country; changes in traditional
21 community values; declining property values; and overall changes in the level of local economic
22 development. Significant population growth in small rural communities could lead to alcoholism,
23 depression, suicide, social conflict, divorce, and delinquency.

24
25 Assessment of the potential for impacts on the quality of life in communities in the
26 vicinity of potential solar development projects is subject to data constraints. Such survey data,
27 obtained through telephone or mail questionnaires or through community focus groups could be
28 collected as appropriate before development of individual solar projects began, during
29 construction, during project operation, and after decommissioning had taken place.

30
31 In addition to the analyses of environmental, social, and economic impacts included in
32 the Solar PEIS, other analyses of impacts would be included as part of the site-specific NEPA
33 review process that would be conducted for individual solar projects.

34 35 36 **3.15.20.8 Socioeconomic Impacts on Grazing**

37
38 **Summary:** Comments expressed concern about the loss of grazing land without
39 compensation due to solar energy development.

40
41 **Response:** The Solar PEIS includes an analysis of the impact of the loss of AUMs, in
42 terms of the impact both on direct cattle and ranching employment and on AUM fees. However,
43 with insufficient data available on the contingency plans of individual ranchers in the event of
44 loss of AUMs, specifically the extent to which AUM loss would lead to herd reduction or
45 relocation, it was not possible to assess the impact of solar development on individual ranching
46 operations, or to measure the consequent social impacts that might occur in the communities that

1 depend on them; only the overall impact on cattle and ranching employment and income in each
2 ROI was assessed. In addition, although data on the value of range improvements and loss of
3 water rights were not available, it is reasonable to assume that the number of AUMs present on a
4 parcel of land reflects the value of improvements, and water access, on that land. Estimates of
5 the economic impact of the loss of grazing rights and related AUMs therefore reflect the loss of
6 these aspects of specific land parcels.

7
8 The BLM will coordinate with any potentially affected grazing permittee/lessee to
9 discuss how a proposed solar project may affect grazing operations and to address possible
10 alternatives as well as mitigation and compensation strategies. Analysis of impacts on grazing
11 would be included, as applicable, as part of the site-specific NEPA review process for individual
12 solar projects. In addition, the long-term monitoring and adaptive management plan for the Solar
13 Energy Program will likely include consideration of such social and economic factors in the
14 vicinity of SEZs.

15 16 17 **3.15.20.9 Design Features for Socioeconomic Impacts**

18
19 **Summary:** Comments suggested that the difference between socioeconomic and
20 environmental justice design features should be clarified and stated that programmatic design
21 features addressing impacts on housing, employment, local government expenditures, and social
22 disruption should be included.

23
24 **Response:** The proposed design features included in the Solar PEIS to address
25 socioeconomics and environmental justice concerns are similar for a number of reasons. It is
26 unlikely that there would be significant impacts resulting from the construction and operation of
27 solar facilities at any of the SEZs for the resources evaluated. Moreover, at the majority of the
28 SEZs evaluated in the Solar PEIS, there are no environmental justice populations as defined by
29 Council on Environmental Quality Guidelines, that is, where the number of minority and/or low-
30 income individuals exceed specified thresholds, meaning that any adverse impacts that were to
31 occur would affect the population as a whole, rather than environmental justice populations
32 specifically. Accordingly, the proposed design features are intended to address aspects of solar
33 development that do not specifically affect environmental justice populations, such as economic,
34 social, and fiscal monitoring programs, workforce education and training, information programs,
35 and health screenings.

36
37 Assessments of the potential for social impacts, in particular increases in alcoholism,
38 depression, suicide, social conflict, divorce, and delinquency in small rural communities, and
39 impacts on the quality of life in the vicinity of potential solar developments are subject to data
40 constraints. Such survey data, obtained through telephone or mail questionnaires, or through
41 community focus groups, would have to be collected before solar developments occurred, during
42 construction, during project operation, and after decommissioning had taken place. If subsequent
43 NEPA analysis at the project-specific level reveals that population increases in excess of 5 to
44 10% in the peak year of construction would occur with in-migration from outside an ROI,
45 additional analyses of the likelihood of social impacts and impacts on quality of life could be

1 undertaken and appropriate minimization and/or mitigation strategies identified. Design features
2 that include these impacts at a programmatic level have been included in the Solar PEIS.
3
4

5 **3.15.20.10 Economic Viability of Solar Projects**

6

7 **Summary:** Comments stated that a third party appraisal of costs should be required to
8 assess the economic viability of solar projects.
9

10 **Response:** Requirements for due diligence by the BLM in assessing project viability
11 prior to issuing a ROW are required for solar and wind applications under BLM IM
12 No. 2011-060, “Solar and Wind Energy Applications—Due Diligence,” and incorporated
13 into the proposed Solar Energy Program in the Final Solar PEIS.
14
15

16 **3.15.21 Environmental Justice**

17
18

19 **3.15.21.1 Impacts on Agriculture**

20

21 **Summary:** Commentors expressed concern about potential adverse impacts on
22 agriculture from solar energy development.
23

24 **Response:** Although a 50-mi (80-km) radius was used to examine the potential for
25 impacts on low-income and minority communities, the BLM agrees that additional impacts may
26 occur in specific industries that traditionally employ significant numbers of low-income and
27 minority individuals, agriculture for example. Analysis undertaken for the Solar PEIS includes
28 an analysis of the impact of the loss of cattle and ranching employment in each SEZ ROI,
29 which often included an area beyond the 50-mi (80-km) area used for the environmental justice
30 analysis. Without specific data on herd reduction or relocation, however, it was not possible to
31 assess the impact of solar development on individual ranching operations or to measure the
32 consequent social impacts in the communities, in particular low-income and minority
33 individuals, which depend on them; only the overall impact on cattle and ranching employment
34 and income in each ROI could be assessed.
35

36 The BLM will coordinate with any potentially affected grazing permittee/lessee to
37 discuss how a proposed solar project may affect grazing operations and to address possible
38 alternatives as well as mitigation and compensation strategies. Analysis of impacts on agriculture
39 would be included, as applicable, as part of the site-specific NEPA review process for individual
40 solar projects. In addition, the long-term monitoring and adaptive management plan for the Solar
41 Energy Program will likely include consideration of such social and economic factors in the
42 vicinity of SEZs.
43
44

3.15.21.2 Methods, Data, and Scope of Environmental Justice Analysis

Summary: Commentors requested that the Solar PEIS include SEZ and community-level analyses, analyses for tribal communities, as well as minority and low-income population threshold data.

Response: An important part of the analysis of the potential impacts of solar developments on low-income and minority communities is to establish the proximity of these communities to solar development projects. Once proximity has been established, the extent of impacts that are high and adverse on individuals in low-income and minority communities can be established by considering how environmental pathways or social, cultural, and economic interactions at the state level, or within a 50-mi (80-km) area around each SEZ, could be affected by specific types of environmental or socioeconomic impacts of solar projects. The Solar PEIS establishes a basis for the examination of these impacts and provides design features that may be implemented to mitigate some or all of these impacts. Subsequent project-specific NEPA assessments of individual solar projects would consider in more detail the precise nature and magnitude of these impacts, and establish a set of mitigation procedures.

Analysis of potential environment justice issues in the Solar PEIS assesses the distribution of low-income and minority population groups, laying out both the broad, state-level context for decision making and SEZ-specific analyses to investigate smaller scale impacts of solar energy development for a 50-mi (80-km) area around each SEZ, designed to capture the majority of impacts that would have environmental pathways affecting low-income or minority groups. Performing an environmental justice analysis at both of these scales (i.e., in Chapters 4 and 5 and the state-specific chapters) is an attempt to acknowledge that impacts may be felt at both the state and SEZ levels.

Under E.O. 12898, “Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations” (59 FR 7629), federal agencies have the responsibility to “identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.” The spirit of this policy—not a mechanical threshold—should guide any analysis of disproportional impact. Given that stipulation, using a quantitative threshold to determine impact is a useful and accepted tool for preparing environmental justice analyses. In its guidance accompanying E.O. 12898, CEQ proposes that:

“Minority populations should be identified where either: (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.”

No specific definition of “meaningfully greater” is offered; instead it is meant to vary depending on the scale of the analysis and the level of expected impacts. Where adverse impacts appear to be negligible, it may be reasonable to set the threshold higher to avoid running through an environmental justice analysis that contributes nothing substantive to the understanding of

1 impacts. Conversely, where there is a reasonable chance of adverse effects, the threshold should
2 be set lower to ensure that such effects on minority or other environmental justice groups are
3 well documented. The PEIS finds that “impacts resulting from the construction and operation of
4 solar facilities with the potential to affect low-income and minority populations are likely to be
5 small,” justifying an increased threshold for determining whether EJ communities exist in the
6 affected area (pp. 5–250, lines 31–32). Despite this finding, the EIS acknowledges that
7 demographics could change (particularly as the 2010 Census data are released) and proceeds to
8 list potential impacts on environmental justice communities (pp. 5–250 to 5–251). This section
9 and other sections also include applicable mitigation measures to address these impacts.

10
11 Finally, “the Solar PEIS will not eliminate the need for site-specific environmental
12 review for future individual utility-scale solar energy development proposals. . . . The
13 determination of the necessary level of additional NEPA analysis, however, would be
14 made on a case-by-case basis at the time a solar energy project application was received.”
15 (See Section 1.3.5.1 of this Final Solar PEIS.)

16 17 18 **3.15.21.3 Design Features for Environmental Justice**

19
20 **Summary:** Comments suggested that the difference between socioeconomic and
21 environmental justice design features should be clarified, and stated that programmatic and
22 SEZ-specific design features addressing impacts on housing, employment, local government
23 expenditures, and social disruption should be included in the Solar PEIS.

24
25 **Response:** The proposed design features included in the Solar PEIS to address
26 socioeconomics and environmental justice are similar for a number of reasons. It is unlikely
27 that there would be significant impacts resulting from the construction and operation of solar
28 facilities at any of the SEZs for the resources evaluated. Moreover, at the majority of the SEZs
29 evaluated in the Solar PEIS, there are no environmental justice populations, as defined by CEQ
30 Guidelines, in which the number of minority and/or low-income individuals exceed specified
31 thresholds; that is, any adverse impacts that were to occur would affect the population as a
32 whole, rather than environmental justice populations specifically. Accordingly, the proposed
33 design features are intended to address aspects of solar development that do not specifically
34 affect environmental justice populations, such as economic, social, and fiscal monitoring
35 programs, workforce education and training, information programs, and health screenings.

36
37 Design features that specifically address the impacts on, and the concerns of, individual
38 minority and low-income communities, rather than impacts on and concerns of all population
39 and income groups in affected communities as a whole, would be included as part of the site-
40 specific NEPA review process that would be conducted for individual solar projects.
41 Environmental justice design features (Section A.2.2.18 of Appendix A) include the option for
42 the authorized officer to require project developers to establish vocational training programs “for
43 the local low-income and minority workforce . . . to promote development of skills required by
44 the solar energy industry.” While requiring project developers to provide preferential hiring for
45 residents of the county or state where a solar energy project is proposed may be an attractive

1 means of addressing the project's socioeconomic impacts, it is likely, however, that such a
2 requirement would be held to violate the interstate commerce clause.
3
4

5 **3.15.21.4 Project Scale Related to Environmental Justice**

6

7 **Summary:** Commentors requested that an assessment of the environmental justice
8 impacts of smaller scale projects in comparison to large projects be included.
9

10 **Response:** In addition to the analyses of economic impacts included in the Solar PEIS,
11 additional analyses of economic impacts would be included as part of the site-specific NEPA
12 review process that would be conducted for individual solar projects. Part of the process of
13 performing additional environmental and socioeconomic analyses could be an assessment of the
14 environmental justice impacts of smaller scale projects and a phased approach to development.
15 However, as the scale of development at each SEZ is likely to be driven primarily by market
16 factors, in particular the financial viability of projects of specific capacities, the involvement of
17 the BLM in this aspect of solar development, and the extent to which subsequent NEPA analysis
18 might consider a range of proposed capacity levels and development timelines, is likely to be
19 limited.
20

21 **3.15.22 Transportation**

22

23 **3.15.22.1 Transportation Access for Solar Facilities**

24

25 **Summary:** Commentors noted that local permits and improvements to the local road
26 network would be required to establish site access when a solar-powered generating facility is
27 being developed. Coordination with local agencies is necessary, and some comments indicated
28 the proper agency responsible for road improvements and maintenance at an SEZ-specific level.
29 Concerns include the use of new roads rather than existing roads where possible to minimize
30 environmental disturbance, in addition to the large volume of commuting worker vehicles
31 anticipated during construction, as well as impacts from increased truck traffic. As part of the
32 process, the impact on the existing road network would need to be assessed through traffic
33 studies or similar analyses that evaluate the capability of the existing roads to handle the
34 increased flow including larger and heavier trucks and that explore potential options to mitigate
35 congestion, attendant traffic hazards, and environmental issues.
36
37

38 **Response:** Because of its programmatic nature, the Solar PEIS discusses the general
39 impacts on transportation in the areas in which potential solar facilities could be located. Actual
40 site access locations and the estimated impacts on the local transportation network will be
41 considered at the time a specific solar facility is proposed. As noted in the comments, local,
42 county, and/or state agencies would be involved in approving access to and potential
43 improvements to the local roads as needed to minimize environmental disturbance and maintain
44 safety and service levels. Text has been added to Section 5.19.1.1 on siting to emphasize that
45 solar facility developers would need to coordinate with and obtain approval from local, county,
46

1 state, and federal agencies as appropriate when planning and siting access roads. Further, in
2 preparing parcels in SEZs for competitive offer, the BLM will seek to make the most efficient
3 use of existing roads and corridors and consider opportunities for shared use of infrastructure.
4
5

6 **3.15.22.2 Infrastructure Costs**

7

8 **Summary:** Concerns were raised about the costs to improve and maintain local, county,
9 and state roads to support solar development. Most SEZs are in rural areas with limited budgets
10 for the development and maintenance of the transportation infrastructure. Commentors would
11 like to see suggested mitigations discussed in the Solar PEIS.
12

13 **Response:** It is expected that, as in any other construction project, the developer would
14 be responsible for any modifications necessary to the local road network for site access.
15 Modifications would be determined by local, county, and/or state transportation agencies based
16 on the details of the proposed solar facility. Potential increased maintenance costs for the
17 regional road infrastructure would primarily be anticipated for the near term from heavy use by
18 commuting workers. Such costs may be offset over the long term by increased income taxes paid
19 by workers and taxes on worker expenses in the local economy as well as taxes paid by the
20 operating solar facility, as determined at the time of facility approval and permitting.
21

22 Potential economic impacts of solar facility development on recreation and tourism are
23 discussed in Sections 5.17.1.1.1 and 5.17.1.1.3, respectively, of this Final Solar PEIS.
24
25

26 **3.15.22.3 Impacts on Railroads**

27

28 **Summary:** A number of the proposed SEZs are in close proximity to, or traversed by,
29 railroad main lines. Railroads have a number of concerns about the impacts on railroad
30 operations from solar energy development and operation. Concerns include the effect of glint
31 and glare on a train crew's ability to see and respond to signals, increases in the number of
32 private rail crossings, and compromises to emergency access to the railroad.
33

34 **Response:** The BLM and the DOE recognize the importance of properly siting a solar
35 facility to minimize impacts from glint and glare. Text on the potential for glint and glare
36 impacts on railroad operations and motorists on nearby roads was included in the update to
37 Section 5.19.1.1 for the Final Solar PEIS. The consideration of glint and glare with respect to
38 the local transportation network (air, road, and rail) is now specifically called out in the design
39 features for transportation impacts (Section A.2.2.20 of Appendix A).
40

41 In the interest of safety, the BLM and local agencies responsible for the local
42 transportation network would seek to minimize any potential rail crossings associated with
43 new solar facility development. Emergency access in the case of a rail accident would also be
44 a consideration. As part of the facility approval process, the BLM would be consulting with
45 adjacent landowners and ROW holders to address any if their concerns about the facility
46 location and design.

1 **3.15.22.4 Transportation Network Fragmentation**
2

3 **Summary:** The concern was expressed over the potential for local road network
4 fragmentation due to the possibility for road segments, without a ROW designation, to be
5 become part of a solar plant. Also, public roadway corridor easements through solar facilities to
6 maintain the local road were seen as part of the proposed action rather than a mitigation measure.
7

8 **Response:** Solar developers will be required to address transportation issues such as
9 network fragmentation to the satisfaction of BLM and state and local transportation agencies
10 when a project is proposed. Local transportation agencies would be aware of routinely traveled
11 roads, regardless of whether they have an official designation, and would take such
12 considerations into account before granting any approvals or permits.
13

14 Mitigation measures are designed to be part of the proposed action, providing available
15 options to address specific problems should they arise in the course of solar facility development
16 or operation. Most of the mitigation measures discussed in Chapter 5 are presented as proposed
17 programmatic design features in Section A.2.2 of Appendix A. Through the ROD for the Solar
18 PEIS, these proposed design features will be required to be applied to all solar facility
19 applications on BLM-administered lands as discussed in Section A.2.2 of Appendix A.
20

21
22 **3.15.22.5 Transportation: Requested Text Revisions**
23

24 **Summary:** Several comments noted corrections to the discussion of local road or rail
25 networks.
26

27 **Response:** The proposed revisions to the text and figures were made in the document.
28
29

30 **3.15.22.6 Environmental Impacts from New Routes and Increased Traffic**
31

32 **Summary:** Concerns were expressed that new routes would allow increased human
33 access and associated environmental damage (e.g., from OHV use). In addition, concerns over
34 road congestion from commuting workers were expressed.
35

36 **Response:** As discussed in Section 5.19.1.2 of the Draft Solar PEIS, significant impacts
37 in the form of road congestion from commuting workers could occur in the vicinity of local
38 roads that provide solar facility site access. Since such impacts are directly related to the specific
39 facility (e.g., location, type, and size), access road design and implementation would have to be
40 addressed at the time of an application for a facility. In the case of more remote locations, local
41 congestion problems could be addressed by the addition of exit lanes and/or multiple entrances.
42

43 The SEZs currently under consideration are generally within a mile or two of major U.S.
44 or state highways. No significant new road construction is anticipated that would provide access
45 to areas other than a proposed solar facility. In addition to the analyses of transportation-related
46 impacts included in the Solar PEIS, other analyses of impacts would be included as part of the

1 site-specific NEPA review process conducted for individual solar projects when specific project
2 size and location and resulting transportation impacts can be more specifically identified.
3
4

5 **3.15.23 Health and Safety**

6
7

8 **3.15.23.1 General Health Concerns**

9

10 **Summary:** These comments expressed concern for adverse health effects that could be
11 associated with solar facilities, such as from metals or contaminants in soil that could become
12 windborne and inhaled if the soils were disturbed, or from electromagnetic fields (EMF)
13 associated with electricity generation and transmission.
14

15 **Response:** Solar facilities on BLM-administered lands will be required to implement
16 extensive dust control measures and also will need to have health and safety plans addressing
17 potential exposures, including to EMF, of both workers and the public (see Sections A.2.2.8.2,
18 A.2.2.1.2.2, and A.2.2.22.1 of Appendix A).
19
20

21 **3.15.23.2 Design Features for Health and Safety**

22

23 **Summary:** One comment in this category expressed concern that the design features did
24 not require a setback for parallel transmission lines or for transmission lines to cross tracks at a
25 90-degree angle; where transmission lines do not meet these requirements, electrical induction
26 could occur, leading to safety issues and equipment or signal malfunction. A comment from a
27 county stated that health risk assessment should be required only if stated to be needed by a local
28 or state regulating agency. Another county stated that the design feature requiring fire breaks of
29 sufficient size to remove the need for protective responses by fire organizations was not practical
30 and required too much land. Finally, a commentor stated that a design feature to protect against
31 exposure to Valley Fever should be included.
32

33 **Response:** No specific design feature was added for railroad ROWs; where applicable,
34 railroad company concerns would be considered in preliminary meetings for applications in
35 variance areas. The health risk assessment will be required for all solar facilities, but the
36 complexity of the assessment will be appropriate to the health concerns identified for the specific
37 facility. The wording of the design feature to prevent wildfires has been changed to recognize
38 that the need for protective responses by fire organizations cannot be removed but may be
39 reduced. A health and safety design feature was also modified to require that health and safety
40 programs address reducing exposure to dusts in areas endemic to the Valley Fever fungus.
41
42

1 **3.15.23.3 Safety and Risks from Terrorism**
2

3 **Summary:** These comments expressed concern for the safety of workers and the general
4 public, and stated that risks from terrorist attacks or natural disasters should be considered in the
5 Solar PEIS.
6

7 **Response:** The health and safety aspects of solar energy projects were discussed in
8 Section 3.6 of the Draft Solar PEIS. Solar facilities on BLM-administered lands will be required
9 to implement health and safety plans addressing potential exposures, including to EMF, of both
10 workers and the public (see Section A.2.2.22.1 of Appendix A). The risks from terrorist attacks
11 and natural disasters are discussed in Section 5.21.3 of the Draft Solar PEIS.
12
13

14 **3.15.23.4 Soil-borne Diseases Including Valley Fever**
15

16 **Summary:** Commentors were concerned about the risks of increased exposure to the
17 fungus that causes Valley Fever, if dusts containing the fungus would become airborne due to
18 soil disturbance at solar facilities.
19

20 **Response:** For the Final Solar PEIS, a health and safety design feature has been modified
21 to require that health and safety programs address reducing exposure to dusts in areas endemic to
22 the Valley Fever fungus (see Section A.2.2.22.1 of Appendix A).
23
24

25 **3.15.23.5 Glint and Glare Hazard**
26

27 **Summary:** Commentors were concerned about the risks of eye injury from exposure to
28 glint and glare at solar facilities.
29

30 **Response:** The technology-specific risks from glint and glare at solar facilities were
31 discussed in Section 5.21.2 of the Draft Solar PEIS. Design features requiring control of glint
32 and glare exposures are included in Section A.2.2.22 of Appendix A.
33
34

35 **3.15.24 Cumulative Impact Assessment**
36
37

38 **3.15.24.1 General Comments on Cumulative Effects**
39

40 **Summary:** Several commentors suggested that potential cumulative impacts on
41 significant natural, historic, cultural, and visual resources should be outlined more thoroughly
42 in the programmatic discussion of cumulative impacts in Section 6.5 of the Solar PEIS. Some
43 commentors objected to the conclusion that cumulative effects on cultural resources are expected
44 to be small “because of the relatively small fraction of land disturbed,” stating that sensitive
45 areas should be identified and avoided and that trails and scenic byways could be affected by

1 solar infrastructure outside of SEZs. Concerns for effects on military training activities were also
2 expressed.

3
4 **Response:** As described in the Final Solar PEIS, the BLM expects to make planning-
5 level decisions through the Solar PEIS, such as land use designations and design features. The
6 program elements adopted via planning-level decisions will provide the basis for future project-
7 specific utility-scale solar energy development decisions. The Solar PEIS appropriately evaluates
8 the potential direct, indirect, and cumulative environmental, social, and economic effects of
9 establishing broad Solar Energy Program elements and strategies across the six-state study area.
10 Because the proposed program involves environmental effects over a broad geographic and time
11 horizon, the depth and detail of the impact analysis are fairly general, focusing on major impacts
12 in a qualitative manner. Accordingly, the analysis of cumulative impacts on cultural and visual
13 resources necessarily resorts to more gross comparisons and overviews of effects at the
14 programmatic level.

15
16 The BLM proposed Solar Energy Program under both action alternatives employs a
17 mitigation hierarchy to address potential impacts—avoidance, minimization, and offset of
18 unavoidable impacts. The BLM first employs avoidance and minimization strategies to eliminate
19 or reduce potential adverse impacts. For those impacts that are not fully avoided or minimized,
20 the BLM determines, in consultation with affected stakeholders, whether any measures to offset
21 or mitigate adverse impacts would be appropriate. The analysis of cumulative effects assumes
22 that micro-siting would avoid resources to the extent practicable and mitigations would be
23 required design features. Similarly, linear resources such as National Historic Trails and scenic
24 byways would be affected over relatively small segments of their lengths near the solar facilities,
25 while associated linear facilities would be routed away from these resources if practicable.
26 Contributions to cumulative effects on these resources are therefore expected to be small, which
27 is to say they would occur but would not be expected to rise to a level of moderate or high.

28
29 Some of the concerns of the military regarding possible effects of solar facility and
30 support infrastructure on military training operations were addressed in revisions to SEZ
31 boundaries or elimination of SEZs since the issuance of the Draft Solar PEIS. Further, in
32 preparing selected parcels for competitive offer, the BLM would review existing analysis for an
33 SEZ and consider any new or changed circumstances that may affect the development of the
34 SEZ. The BLM would also work with appropriate federal, state, and local agencies (including
35 the DoD), and tribes, as necessary, to ensure that potential environmental, cultural, or other
36 resource conflicts are considered into the review, including information provided through the
37 Solar PEIS. This would include areas identified as having a high potential for conflict with
38 sensitive natural, visual, or cultural resources. This work would ultimately inform how a parcel
39 would be offered competitively (e.g., parcel size and configuration, technology limitations,
40 mitigation requirements, and parcel-specific competitive process).

41 42 43 **3.15.24.2 Adequacy of Cumulative Impact Analysis**

44
45 **Summary:** A number of commentors took issue with the adequacy of the cumulative
46 impacts analysis in the Draft Solar PEIS, stating that the Solar PEIS discussion in the Draft does

1 not present a meaningful, quantitative examination of the impacts of solar energy development at
2 the landscape and regional level or in light of the other uses of the public lands, including for oil
3 and gas, coal production, nuclear energy, renewable energy development, and electricity
4 transmission systems, without analyzing how development of solar energy might increase,
5 combine with, or exacerbate existing environmental impacts for those uses.
6

7 **Response:** As described in the Final Solar PEIS, the BLM expects to make planning-
8 level decisions through the Solar PEIS, such as land use designations and design features. The
9 program elements adopted via planning-level decisions will provide the basis for future project-
10 specific utility-scale solar energy development decisions. The Solar PEIS appropriately evaluates
11 the potential direct, indirect, and cumulative environmental, social, and economic effects of
12 establishing broad Solar Energy Program elements and strategies across the six-state study area.
13 Because the proposed program involves environmental effects over a broad geographic and time
14 horizon, the depth and detail of the impact analysis are fairly general, focusing on major impacts
15 in a qualitative manner.
16

17 The Solar PEIS reasonably enumerates and quantifies past and ongoing actions that affect
18 the environment in Chapter 6 and in the individual SEZ chapters. However, given the high level
19 of uncertainty in both the ultimate level of development and the locations of development, it
20 would not be appropriate to speculate on the specific contributions of such development to
21 cumulative impacts, but rather to make such assessments as to whether such contributions on the
22 whole would be small, moderate, or large, as the Solar PEIS does. Thus, it is not possible at this
23 time to perform a meaningful quantitative analysis of cumulative effects, for example, employing
24 biological thresholds that could portend disproportionate effects. The level of cumulative effects
25 analysis performed in the Solar PEIS is appropriate for the current level of understanding of
26 foreseeable solar development and for informing the decision for which the analysis was
27 performed.
28

29 Cumulative impact analyses have also been developed for individual SEZs as part of
30 Chapters 8 through 13 of this Final Solar PEIS; these SEZ-specific assessments have been
31 updated for this Final Solar PEIS. The SEZ-specific cumulative impact analyses evaluate the
32 impacts of a maximum development scenario for each SEZ, regardless of the state-specific
33 RFDS projections, at a level of detail suitable for supporting analyses of specific projects
34 proposed within and near the SEZs.
35
36

37 **3.15.24.3 Recreation and Vehicle Use and Cumulative Impacts**

38

39 **Summary:** One group submitted several comments regarding concerns that multiple
40 proposed renewable energy and conservation actions in the desert region of southern California
41 currently undergoing NEPA review could cumulatively affect access to this area for recreation,
42 including driving for sport, back country exploring, rock hounding, hunting, and other activities.
43 In addition to the Solar PEIS, of particular concern was the ongoing DRECP activity, which
44 could cumulatively restrict motorized recreation in the region.
45

1 **Response:** The existence of the other renewable energy management plans and
2 conservation plans mentioned in these comments could have cumulative effects on access to
3 lands for recreation. However, because these are planning activities for which specific effects of
4 particular actions on access to recreation are uncertain at this time, it is not possible to make any
5 definite conclusions as to cumulative effects on recreation. It is possible that the plans could
6 provide mitigations for effects on recreation, for example, in areas not designated for renewable
7 energy development. Further, note that the BLM’s proposed Solar Energy Program under both
8 action alternatives employs a mitigation hierarchy to address potential impacts—avoidance,
9 minimization, and offset of unavoidable impacts. The BLM first employs avoidance and
10 minimization strategies to eliminate or reduce potential adverse impacts. For those impacts
11 that are not fully avoided or minimized, the BLM determines, in consultation with affected
12 stakeholders, whether any measures to offset or mitigate adverse impacts would be appropriate.
13 It is expected that impacts on recreation will be given full consideration under this mitigation
14 hierarchy.

17 **3.15.24.4 Regional Industrialization**

18
19 **Summary:** Two commentors expressed concerns that solar development could contribute
20 to the overall conversion of formerly remote areas to industrialized areas, including the San Luis
21 Valley in Colorado.

22 **Response:** The concerns expressed in these comments are well taken. Industrialization of
23 regions is difficult to foresee and analyze, even at the programmatic level. Cumulative impacts
24 analysis under NEPA, while comprehensive and overarching, is still limited to foreseeable
25 actions and trends typically over a 20- to 30-yr timeframe, generally not long enough to foresee
26 such major regional transformations.

29 **3.15.24.5 Landscape-Scale Impact Analysis**

30
31 **Summary:** Several commentors stated that the Draft Solar PEIS fails to analyze
32 cumulative impact of solar development on a broad regional scale and at a landscape level, as
33 would be required under CEQ guidelines. One commentor suggested that such analysis include
34 assessment of the sustainability of full development of SEZs over 80% of their area. Another
35 commentor expressed concerns that small solar projects in the San Luis Valley in Colorado be
36 included in the analysis of that region, while another suggested that NEPA reviews of projects
37 within the same geographic region be coordinated.

38
39 **Response:** The cumulative effects analysis performed in the SEZ chapters of the Solar
40 PEIS did follow the CEQ guidelines as outlined in these comments, which may be considered a
41 “landscape level” analysis. The geographic extent of the resources affected was determined
42 generally as the continuous extent of the affected resource outside of the portion directly affected
43 by the potential developments within an SEZ. Additional hydrologic analysis has been
44 performed since the Draft Solar PEIS was issued to more completely address watershed
45 boundaries. Ecological boundaries did in fact form the basis of the geographic extent of effects

1 on ecological resources in the SEZ analyses. In addition, cumulative effects were analyzed
2 across the six-state region at the programmatic level in Chapter 6. Given the uncertainty of the
3 nature and extent of development beyond the immediate future, it is not reasonable to conclude,
4 for example, that the cumulative effects analysis for the Riverside East SEZ is inadequate,
5 because it does not provide conclusive support for decisions on pending permit applications, or
6 whether 80% SEZ development is sustainable.

7
8 While the Solar PEIS analyses certainly inform these decisions, the circumstances of
9 individual future applications will form the basis of their application decisions. The question of
10 the sustainable level of development for individual SEZs will be revealed over time as projects
11 are completed and retired and as solar technologies evolve; SEZs would not be developed above
12 a level that is sustainable. It is likely that for some SEZs such a level may be well below the 80%
13 upper limit assumed in the Solar PEIS impacts analyses. For the cumulative effects of small-
14 scale solar development projects in the San Luis Valley in Colorado, the SEZ analyses do
15 include the effects of several small-scale PV facilities recently built or permitted, as well as other
16 reasonably foreseeable such facilities. Regarding the issue of coordinating the NEPA reviews of
17 multiple projects in the same region, other relevant NEPA documents were reviewed in the
18 preparation of the Solar PEIS.

21 **3.15.24.6 Water Issues for Cumulative Impacts**

22
23 **Summary:** Several commentors stated that the analysis of cumulative impacts for SEZs
24 in Draft Solar PEIS failed to include an analysis of the cumulative impacts on groundwater
25 within flow systems and across states as a whole via a regional groundwater model, particularly
26 concerning the availability of groundwater for solar projects and the impacts of groundwater
27 withdrawals on special status species, wildlife, fish, and other resources. Commentors also stated
28 that impacts on surface water flow systems, impacts on water quality, effects of increased
29 competition for water supplies, and effects of changing the current place of use, purpose of use,
30 or point of diversion were not adequately analyzed in the Draft Solar PEIS. One comment
31 pointed out that full development of SEZs may be limited by the availability of water in some
32 cases. Others expressed concerns about the cumulative effects of several SEZs located in the
33 San Luis Valley in Colorado within the upper Rio Grande watershed.

34
35 **Response:** For groundwater flow systems, availability of groundwater for solar
36 development and effects of water use on groundwater dependent species, the Solar PEIS does
37 address all these issues in a qualitative manner. Such a level of analysis is appropriate given the
38 high level of uncertainty in the eventual level of solar development, locations of facilities, and
39 technologies used. Further uncertainties surround the availability of water rights or the
40 conversion of water rights from other uses. However, in an effort to bound effects on
41 groundwater flow effects, interbasin groundwater flow modeling has been performed in major
42 aquifer systems since the Draft Solar PEIS was issued. The results of this modeling are presented
43 in the Final Solar PEIS in Appendix O. With respect to the issue of increased competition for
44 water, the cumulative impacts section of each SEZ chapter includes a discussion of water
45 availability under general trends. Because of the high uncertainty of the availability of water
46 rights, analysis of the effects of reallocation of water uses to solar energy production would be

1 speculative. For effects of water use on fish and other water-dependent species and habitat, these
2 potential effects are analyzed in each SEZ chapter, under Cumulative Impacts on Resources:
3 Wildlife and Aquatic Biota. These analyses are necessarily qualitative, given the uncertainty in
4 any future drawdown of water supplies from solar development.
5

6 Other water issues noted in comments were in fact analyzed in the Draft Solar PEIS,
7 including contributions to cumulative effects on water quality, sedimentation and runoff,
8 drainage and surface hydrology effects, effects on floodplains, and potential for chemical
9 contamination. Similarly, the general effects of climate change on water resources and flooding
10 potential are assessed in each SEZ chapter. The comment that full SEZ build-out may not be
11 feasible due to water limitations is acknowledged. Full build-out was assumed for analysis
12 purposes only and is not a projection of future development. Regarding the potential effects on
13 the upper Rio Grande watershed from multiple SEZs in the San Luis Valley, the Solar PEIS
14 notes this condition and cites strict management of water resources under the Rio Grande Basin
15 Act, which restricts total water use.
16
17

18 **3.15.24.7 Desert Tortoise and Wildlife Cumulative Impact Analysis**

19
20 **Summary:** For the desert tortoise, commentors stated that the BLM needs to determine
21 the affected population size and to fully analyze the cumulative effects of fragmentation, as well
22 as connectivity between desert tortoise genetic units and between desert tortoise conservation
23 areas. They stated that a small number of solar projects could consume all mitigation land that
24 might be available, and thus it may be impossible to mitigate impacts on the tortoise or other
25 endangered species. For wildlife in general, commentors expressed concerns about whether the
26 effects of solar development on wildlife from grazing mitigations would be analyzed; whether
27 utility-scale solar energy development could have substantial effects on wildlife and ecosystem
28 functionality and resilience; whether effects on endemic species associated with eolian systems
29 such as sand dunes, particularly on the endemic Mojave fringe-toed lizard, would be analyzed;
30 and whether impacts on biotic communities and species assemblages of multiple large scale
31 developments along with other development pressures, such as population growth, be
32 considered.
33

34 **Response:** As described in the Final Solar PEIS, the BLM expects to make planning-
35 level decisions through the Solar PEIS, such as land use designations and design features. The
36 program elements adopted via planning-level decisions will provide the basis for future project-
37 specific utility-scale solar energy development decisions. The Solar PEIS appropriately evaluates
38 the potential direct, indirect, and cumulative environmental, social, and economic effects of
39 establishing broad Solar Energy Program elements and strategies across the six-state study area.
40 Because the proposed program involves environmental effects over a broad geographic and time
41 horizon, the depth and detail of the impact analysis are fairly general, focusing on major impacts
42 in a qualitative manner.
43

44 Further, note that the BLM's proposed Solar Energy Program under both action
45 alternatives employs a mitigation hierarchy to address potential impacts—avoidance,
46 minimization, and offset of unavoidable impacts. The BLM first employs avoidance and

1 minimization strategies to eliminate or reduce potential adverse impacts. For those impacts
2 that are not fully avoided or minimized, the BLM determines, in consultation with affected
3 stakeholders, whether any measures to offset or mitigate adverse impacts would be appropriate.
4 It is expected that impacts on wildlife will be given full consideration under this mitigation
5 hierarchy.
6

7 For cumulative effects on the desert tortoise, some SEZs were modified and others were
8 eliminated in part due to concerns about effects on desert tortoise. For movement corridors for
9 desert tortoise, the presence of such corridors was a significant consideration in the revision or
10 elimination of some SEZs in the period since the Draft Solar PEIS was issued. Further analysis
11 of cumulative effects on desert tortoise and desert tortoise connectivity habitat at the Solar PEIS
12 stage would be speculative, given the high uncertainty in the amount and location of future
13 development. Such analysis is more appropriately done at the project level as part of the NEPA
14 analysis and required consultation under Section 7(a)(2) of the ESA.
15

16 For the effects of grazing mitigations on wildlife, these mitigations are not sufficiently
17 defined to allow analysis of cumulative effects on wildlife at the programmatic level. In any case
18 these would be small effects at the programmatic level. The fact that utility-scale solar facilities
19 would have effects on wildlife and ecosystem functionality is acknowledged in the Draft Solar
20 PEIS. For the treatment of eolian processes in the Draft Solar PEIS, the current level of analysis
21 in the Solar PEIS is appropriate, given the uncertainty of development in any such areas.
22 However, the discussion of potential effects on the Mohave Fringe-towed lizard will be updated
23 to note its presence within the Riverside East SEZ. For the analysis of cumulative effects on
24 biotic communities and species assemblages from multiple utility-scale solar facilities in
25 combination with other pressures, the Draft Solar PEIS does consider such combined effects
26 within the geographic extent of effects of various SEZs. However, the high level of uncertainty
27 of actual solar development and other pressures such as population increases does not afford
28 meaningful conclusions about the regional effects on such communities at the programmatic
29 level of analysis.
30
31

32 **3.15.24.8 Cumulative Impacts of Transmission Infrastructure**

33

34 **Summary:** Several commentors stated that the Draft Solar PEIS fails to assess
35 cumulative impacts from related infrastructure upgrades that will be required by the projects
36 including transmission lines and substations.
37

38 **Response:** An analysis of regional transmission needs and effects related to solar
39 development has been performed since the Draft Solar PEIS was issued and was used to support
40 the preparation of the Final Solar PEIS. While the Solar PEIS considers the impacts of
41 constructing, operating, and decommissioning the related infrastructure needed to support utility-
42 scale solar energy development, such as roads, transmission lines, and natural gas or water
43 pipelines, the land use plan decisions to be made (e.g., exclusions, SEZs, and so on) will be
44 applicable only to utility-scale solar energy generation facilities. Management decisions for
45 supporting infrastructure would continue to be made in accordance with existing land use plan
46 decisions and current applicable policy and procedures. Siting of supporting infrastructure would

1 be fully analyzed in project-specific environmental reviews in accordance with NEPA. Such
2 reviews would be completed in combination with solar generation facility environmental reviews
3 as appropriate.
4

6 **3.15.24.9 Cumulative Impacts: General Concerns**

7
8 **Summary:** Commentors expressed several varied concerns about the cumulative effects
9 analysis in the Draft PEIS. One commentor stated that the BLM would need to conduct an
10 additional study to fully consider the cumulative impacts of solar projects across the six-state
11 region on national park resources. Another expressed concerns about large-scale solar
12 development in terms of long-term, irreversible, cumulative impacts on fragile deserts and
13 grasslands. Yet another noted concern for the incremental impacts of future solar energy
14 development projects and associated infrastructure when added to impacts from other future
15 actions, livestock grazing, military base expansions, mining, urban sprawl, and recreational
16 activities. Finally, one commentor expressed concerns regarding the consistency of future
17 project-specific NEPA reviews and the potential for litigation.
18

19 **Response:** As described in the Final Solar PEIS, the BLM expects to make planning-
20 level decisions through the Solar PEIS, such as land use designations and design features. The
21 program elements adopted via planning-level decisions will provide the basis for future project-
22 specific utility-scale solar energy development decisions. The Solar PEIS appropriately evaluates
23 the potential direct, indirect, and cumulative environmental, social, and economic effects of
24 establishing broad Solar Energy Program elements and strategies across the six-state study area.
25 Because the proposed program involves environmental effects over a broad geographic and time
26 horizon, the depth and detail of the impact analysis are fairly general, focusing on major impacts
27 in a qualitative manner.
28

29 Further, note that the BLM's proposed Solar Energy Program under both action
30 alternatives employs a mitigation hierarchy to address potential impacts—avoidance,
31 minimization, and offset of unavoidable impacts. The BLM first employs avoidance and
32 minimization strategies to eliminate or reduce potential adverse impacts. For those impacts
33 that are not fully avoided or minimized, the BLM determines, in consultation with affected
34 stakeholders, whether any measures to offset or mitigate adverse impacts would be appropriate.
35 It is expected that most direct, indirect and therefore cumulative effects would be reduced
36 through the employment of this mitigation hierarchy.
37

38 Because of the very large land area included in the solar development alternative and the
39 great uncertainty in the number and locations of eventual facilities that might be built, it was not
40 possible to analyze quantitatively the potential effects of such development on national park
41 resources at this time. Regarding the scale of development, while the PEIS analyzes potential
42 effects on hundreds of square miles of land, the actual realistic ultimate size of the area affected
43 would be a small fraction of this size. Regarding incremental impacts, all the types of impacts
44 noted in the comment were considered in the cumulative impacts assessment. Regarding analysis
45 of cumulative impacts at the project level post-PEIS, consistency in these analyses will benefit
46 from the existence of the PEIS and from commonalities in the types of resources affected, types

1 of projects and actions affecting resources, and reviewing agencies. No analysis at the
2 programmatic level, however forward looking, could preclude the possibility of future challenges
3 or litigation.
4

6 **3.15.24.10 Cumulative Impacts Assessment for the Proposed Brenda SEZ**

7
8 **Summary:** Commentors stated that projects should be added to the table of reasonably
9 foreseeable actions and included in analysis.
10

11 **Response:** The Quartzite Solar Energy Project ROW lease application (AZA 034666) for
12 a 100-MW CSP/tower facility in La Paz County about 10 mi (16 km) from the SEZ is listed in
13 Table 8.1.22.2-2 of the Draft Solar PEIS as a pending application, with a NOI to prepare an EIS
14 issued on January 14, 2010. The application is in fact singled out for discussion in the text as an
15 example of such pending applications (Section 8.1.22.2-1). Since the application was not a fast-
16 track application, the project was considered possible, but not foreseeable, at the time the Draft
17 Solar PEIS was prepared. Thus, its potential impacts were analyzed in the aggregate with other
18 such pending applications. However, because the Draft EIS for this project was issued on
19 November 10, 2011, this project is now considered foreseeable. This change in status is noted in
20 the Final Solar PEIS, as are its potential cumulative effects on visual and other resources.
21

23 **3.15.24.11 Cumulative Impacts Assessment for the Proposed Imperial East SEZ**

24
25 **Summary:** These comments suggested updating listed projects and additional new
26 projects; expanding cumulative effects for wildlife and special status species; adding analysis
27 of projects in bidding and research phase; changing geographic boundaries of the cumulative
28 impact analysis; and analyzing impacts on state and federal lands near SEZs.
29

30 **Response:** The Solar PEIS acknowledges that other renewable energy projects and
31 associated infrastructure are the greatest source of likely cumulative impacts, as evidenced by
32 the content of Table 9.1.22.2-1 of the Draft and Final Solar PEIS, which lists foreseeable
33 energy development and distribution projects. Other major projects are also listed in the table.
34 Because such projects would be the major contributors to cumulative effects, the level of detail
35 represented by this set of projects would be appropriate for the cumulative impacts analysis in a
36 PEIS. Additional detail, including the timing of contributing projects, such as those listed in the
37 Imperial Valley Solar Project EIS, would be appropriate at the project-level NEPA analysis when
38 the specifics of a particular project proposal within the SEZ are known at a similar level of detail.
39

40 The Nevada and Arizona SEZs mentioned in the comment are outside of the geographic
41 extent of effects of the Imperial East SEZ and thus would not meaningfully combine with the
42 effects of the SEZ to produce cumulative effects. The geographic extent of effects is not set
43 arbitrarily, but rather is based on a reasoned analysis. Cumulative effects of the programmatic
44 alternatives over the six-state region are examined in Section 6.5 of the Draft Solar PEIS.
45

1 The description of the Imperial Valley Solar project was revised in the Final Solar PEIS
2 update to indicate that the project will use PV technology rather than dish engine. The changes
3 in contributions to cumulative impacts associated with the technology change were also noted in
4 the update, including those on noise and visual impacts. The approval status of foreseeable
5 projects was updated in Table 9.1.22.2-1. Identifying nonfederal lands, protected and
6 unprotected, on the SEZ cumulative impact map (Figure 9.1.22.2-1) is not practical or necessary
7 at the programmatic level of analysis. The potential effects on such lands would be analyzed in
8 future NEPA analysis at the project level.
9

10 The cumulative impacts analyses for SEZs, including Imperial East, consider the impacts
11 of potential development within the SEZ in combination with other specific past, present, and
12 foreseeable actions. Adoption of the preferred alternative does not affect the current analysis
13 since it does not involve the approval of any specific project proposals. Cumulative effects of the
14 programmatic alternatives over the six-state region are examined in Section 6.5 of the Solar
15 PEIS. Cumulative effects on wildlife movement corridors are addressed qualitatively in
16 Section 6.5.2.9.2; cumulative effects on threatened and endangered species are discussed in
17 Section 6.5.2.9.3.. In addition, several SEZs have been eliminated or their borders modified in
18 the period since the Draft Solar PEIS was issued in part out of concerns for wildlife habitat
19 connectivity.
20

21 Projects in the bidding or research phase are not considered reasonably foreseeable and
22 thus were not considered in the cumulative impacts analysis in the Draft Solar PEIS, except those
23 with pending ROW lease applications. The latter were included in the aggregate, assuming that
24 some would proceed to completion.
25

26 The level of detailed analysis suggested in the comment would be appropriately done in
27 future NEPA analyses for specific projects. In the Draft Solar PEIS, such effects are
28 encompassed in the analysis of cumulative effects on water resources.
29

30 Potential impacts were not analyzed at the level of specially designated state lands as
31 suggested in the comment. It was not possible to analyze impacts at this level of detail in the
32 Solar PEIS, but impacts on such areas could be inferred from the analyzed impacts on similar
33 federal lands, such as NPs and WAs, as applicable. More detailed analysis on state lands
34 mentioned in the comment would be conducted by project proponents in their specific
35 environmental review.
36
37

38 **3.15.24.12 Cumulative Impacts Assessment for the Proposed Riverside East SEZ** 39

40 **Summary:** These comments suggested adding projects to the table of reasonably
41 foreseeable actions and including them in the analysis; updating text; expanding cumulative
42 effects analysis for wildlife; updating listed projects and adding new projects; changing
43 geographic boundaries for cumulative impact analysis; analyzing impacts on state and federal
44 lands near SEZs; and adding impacts from proposed expansion of Twentynine Palms Marine
45 base.
46

1 **Response:** Table 9.2.22.2-1 was in the Final Solar PEIS to present the current status of
2 all the projects, including the Genesis, Blythe, and Palen solar projects.

3
4 Cumulative impacts on habitat connectivity and blockage of dispersal corridors are
5 discussed qualitatively under wildlife in Section 9.4.22.4.10, where desert tortoise is specifically
6 mentioned. In addition, Section 9.4.22.4.10 specifically mentions “loss of connectivity between
7 natural areas (e.g., habitat fragmentation and blockage of dispersal corridors for bighorn sheep
8 and desert tortoise)” in reference to potential impacts on wildlife.

9
10 The Eagle Mountain pumped storage hydroelectric plant is described in
11 Section 9.4.22.2.2 in the Draft Solar PEIS. The information was updated in the Final Solar PEIS.

12
13 For comments requesting more detailed analysis, this would be appropriate for future
14 NEPA analyses for specific projects. In the Solar PEIS, such effects are encompassed in the
15 analysis of cumulative effects on water resources.

16
17 Potential impacts were not been analyzed at the level of specially designated state lands
18 as suggested in some comments. It was not possible to analyze impacts at this level of detail in
19 the Solar PEIS, but impacts on such areas could be inferred from the analyzed impacts on similar
20 federal lands, such as NPs and WAs, as applicable. More detailed analysis on state lands
21 mentioned in the comment would be conducted by project proponents in their specific
22 environmental review.

23
24 The proposed expansion of the Marine base mentioned in one comment was noted in the
25 cumulative impacts section of the update for the Riverside East SEZ.

26 27 28 **3.15.24.13 Cumulative Impacts Assessment for the Proposed Colorado SEZs**

29
30 **Summary:** These comments concerned water use and land use issues for the four SEZs
31 in Colorado.

32
33 **Response:** Regarding the SEZ-specific cumulative impacts analysis, the Solar PEIS
34 analyzes such impacts in a qualitative or, in some cases, semiquantitative manner, consistent
35 with the current high level of uncertainty in future solar development within or outside of SEZs.
36 For the effects of groundwater withdrawals on interbasin flow and on groundwater-dependent
37 species and habitats, while uncertainties surround the level of eventual solar development, solar
38 technologies deployed, and the availability of water rights, an effort to bound effects on
39 groundwater flow through interbasin groundwater flow modeling has been performed in major
40 aquifer systems since the Draft Solar PEIS was issued. The results of this modeling are presented
41 in the Final Solar PEIS and were used to review the conclusions in the Draft Solar PEIS
42 regarding cumulative effects on groundwater-dependent species and habitats. For increasing
43 competition for water, the cumulative impacts analysis for each SEZ in the Solar PEIS notes the
44 cumulative water demands of other foreseeable projects if known. In addition, trends in area
45 water use are discussed for each SEZ. Analyzing the socioeconomic effects of allocating water
46 use to energy production would be speculative at this time and would be appropriately performed

1 at the project level. In particular, with respect to potential effects on the upper Rio Grande
2 watershed from multiple demands in the San Luis Valley, the Solar PEIS notes such possible
3 effects qualitatively and cites strict management of water resources under the Rio Grande Basin
4 Act, which restricts total water use.

5
6 The cumulative impacts analysis in the Solar PEIS considers the environmental effects of
7 ongoing and foreseeable energy projects. While the analysis of contribution of effects from the
8 four proposed SEZs in the San Luis Valley assumes 80% development of the SEZs, projecting
9 the actual level of development in the SEZs would be speculative at this time.

10
11 The BLM believes that the Solar PEIS does present a meaningful analysis of cumulative
12 impacts at an appropriate level of detail to support the solar development program on public
13 lands. This analysis, however, did not conclude that such impacts would be extraordinarily high,
14 as suggested in the comment. The large footprints of utility-scale solar facilities were considered
15 in analysis and were significant contributors to impacts from solar development, along with
16 potential water demand, depending on solar technologies used. Even under development of the
17 SEZs to an assumed 80%, cumulative impacts of solar development when combined with other
18 foreseeable actions were not estimated to be high for any affected resource. Actual development
19 of SEZs may be less than 80% given limitations on water availability under the Rio Grande
20 Basin Act and on transmission out of the valley. Mitigations and required design features
21 identified in the Solar PEIS will protect communities and the environment, while future NEPA
22 analysis of proposed solar projects will provide an ongoing assessment of cumulative impacts
23 that would be considered in future leasing decisions.

24
25 The cumulative impacts analysis in the Solar PEIS considered past, present, and
26 foreseeable actions of a variety of types within 50 mil (80 km) of each SEZ, which covered a
27 large portion of the San Luis Valley. Several ongoing and foreseeable solar energy projects on
28 private land were included in this analysis. While the contributions to cumulative impacts from
29 the four proposed SEZs assumed 80% development, actual levels of development will depend on
30 a number of factors, including the availability of transmission within and out of the valley. More
31 detailed NEPA analysis will be performed for specific project proposals on public land in the
32 future.

33 34 35 **3.15.24.14 Cumulative Impacts Assessment for the Proposed Amargosa Valley SEZ**

36
37 **Summary:** These comments concerned modeling desert tortoise and groundwater
38 consumption effects; adding projects to the table of reasonably foreseeable projects and
39 including them in the analysis; and including new and updated infrastructure like t-lines,
40 substations, and access roads in the cumulative effects analysis.

41
42 **Response:** For the analysis of impacts on resources, the Solar PEIS does consider such
43 effects in a qualitative or, in some cases, semiquantitative manner, consistent with the current
44 high level of uncertainty in future solar development within or outside of SEZs. More detailed
45 analysis at the programmatic level would be speculative. Potential impacts on resources are
46 discussed under the cumulative impacts analysis in each SEZ chapter. For cumulative effects on

1 desert tortoise, for example, the size of the SEZ has been reduced to only 9,737 acres (39.4 km²),
2 with a developable area of 8,479 acres (34.3 km²) since the Draft Solar PEIS was issued. This
3 reduction to about one third of the original acreage was a result in part of concerns for sensitive
4 species and water use by solar projects. It is also indicative of the level of uncertainty of future
5 solar development and the appropriateness of the analysis methodology used in the Solar PEIS.
6 For the issue of groundwater modeling, while uncertainties surround the level of eventual solar
7 development, solar technologies deployed, and the availability of water rights, an effort to
8 bound effects on groundwater flow has been performed for the Amargosa Desert Basin since
9 the Draft Solar PEIS was issued. The one-dimensional groundwater model that was used
10 examined the range of water use that could occur assuming SEZ build-out and various solar
11 energy technologies. The results of this modeling are presented in the Final Solar PEIS and
12 were used to review the conclusions in the Draft Solar PEIS regarding cumulative effects on
13 groundwater-dependent species. Regarding increasing competition for water in the area,
14 Section 11.1.22.4.8 of the Draft Solar PEIS notes specifically the cumulative demands of other
15 foreseeable projects, including the nearby Amargosa Farm Road Solar Energy Project. In
16 addition, trends in water use are discussed in Section 11.1.22.3.3. Analyzing the socioeconomic
17 effects of allocating water use to energy production would be speculative at this time and would
18 be appropriately performed at the project level.

19
20 The DOE has withdrawn the proposed Solar Demonstration Project. The proposed
21 Lathrop Wells Solar Project was added to the list of foreseeable projects for the Amargosa
22 Valley SEZ and its contributions to cumulative effects are considered in the Final Solar PEIS.

23
24 The UNEV Pipeline Project, now under construction, was included in the Cumulative
25 Impacts section for the Dry Lake SEZ in the Draft Solar PEIS, as was the proposed Toquop
26 natural gas power plant. The SWIP was likewise analyzed in the Draft Solar PEIS for both the
27 Dry Lake and Dry Lake Valley North SEZs. The status of the projects was updated in the Final
28 Solar PEIS in Tables 11.3.22.2-1 and 11.4.22.2-1. The analysis of substations needed to connect
29 solar energy projects within proposed SEZs can only be anticipated in general in the Solar PEIS.
30 The analysis of specifically proposed substations would be performed in future NEPA analyses
31 at the project level.

32
33 Section 11.1.20.2 of the Final Solar PEIS for the Amargosa Valley SEZ does note
34 relevant environmental justice concerns from solar development, including from “noise and dust
35 during the construction; noise and electromagnetic field (EMF) effects associated with
36 operations; visual impacts of solar generation and auxiliary facilities, including transmission
37 lines; access to land used for economic, cultural, or religious purposes; and effects on property
38 values.” While these are legitimate concerns of tribes, as this section goes on to note, “there
39 are no minority populations defined by CEQ guidelines (Section 11.1.20.1) within the 50-mi
40 (80-km) radius around the boundary of the SEZ; this means that any adverse impacts of solar
41 projects would not disproportionately affect minority populations.” That is, the concerns noted
42 in the comment are presented in the Solar PEIS, but the concerns do not constitute an
43 environmental justice issue for Native Americans or other minorities, because these groups do
44 not represent a disproportionate fraction of the surrounding population.

45
46

1 **3.15.24.15 Cumulative Impacts Assessment for the Proposed Dry Lake SEZ**
2

3 **Summary:** These comments concerned adding projects to the table of reasonably
4 foreseeable projects and including them in the analysis; supporting particular SEZ locations;
5 considering water resources issues; revising wording for groundwater rights; confirming
6 wetlands data; considering land use issues; and including new and updated information on
7 infrastructure, transmission lines, substations, and access roads.
8

9 **Response:** The acceptability of the Dry Lake SEZ location expressed by some
10 commentors is noted. The Final Solar PEIS includes revised wording related to groundwater
11 rights.
12

13 The Moapa Solar Project was added to Cumulative Impact Section 11.3.22.2 and
14 included on Table 11.3.22.2-1 of the Final Solar PEIS. The potential effects of the project on
15 water resources and on desert tortoise are analyzed in Section 11.3.22.4 of this Final Solar PEIS.
16

17 In the Draft Solar PEIS, National Wetlands Inventory data and the SEZ boundary were
18 used to determine the amount of wetland in the Dry Lake playa and in the SEZ. However, after
19 the SEZ boundary changes, the area is now much lower. Now only 218 acres (0.88 km²) of Dry
20 Lake fall within the SEZ and 144 of those acres are in a non-development zone. There are now
21 2,475 acres (10 km²) in the area of indirect effects.
22

23 The Draft Solar PEIS analyzed the cumulative effects of several proposed transmission
24 line projects routed through or near the SEZ, including the Trans West Transmission Project
25 (Table 11.3.22.2-1), as well as the mentioned Southern Nevada Water Authority (Clark, Lincoln,
26 and White Pine Counties) groundwater development project (Table 11.3.22.2-3).
27

28 The UNEV Pipeline Project, now under construction, was included in the Cumulative
29 Impact section for the Dry Lake SEZ in the Draft Solar PEIS, as was the proposed Toquop
30 natural gas power plant. The SWIP was likewise analyzed in the Draft Solar PEIS for both the
31 Dry Lake and Dry Lake Valley North SEZs. The status of these projects was updated in
32 Tables 11.3.22.2-1 and 11.4.22.2-1, respectively, of the Final Solar PEIS. The analysis of
33 substations needed to connect solar energy projects within proposed SEZs can only be
34 anticipated in general in the Solar PEIS. The analysis of specifically proposed substations
35 would be performed in future NEPA analyses at the project level.
36
37

38 **3.15.24.16 Cumulative Impacts Assessment for the Proposed Dry Lake Valley**
39 **North SEZ**
40

41 **Summary:** These comments concerned consideration of grazing issues; addition of
42 projects to the table of reasonably foreseeable projects and their inclusion in the analysis;
43 updating of text; updating and addition of projects; consideration of water resource issues;
44 inclusion of new and updated infrastructure, transmission lines, substations, and access roads;
45 addition or updating of maps; and consideration of inconsistent analysis, analysis methodology,
46 quantification of effects, and land use issues.

1 **Response:** In general, new projects for which information has become available since
2 publication of the Draft Solar PEIS were added to the updated SEZ cumulative impact section
3 tables for the Final Solar PEIS.
4

5 Section 11.4.22.4.1 of the Draft Solar PEIS does acknowledge the possibility of
6 cumulative effects on grazing from foreseeable development, including projects mentioned in
7 the comment.
8

9 The analysis of cumulative effects on resources in the Solar PEIS is necessarily primarily
10 qualitative. Thus, while the potentially disturbed acreages for some projects are given, for
11 example, in Table 11.4.22.2-2, for many of the identified foreseeable projects information on
12 disturbed acreage was not available. Moreover, such estimates would typically contain large
13 uncertainties and are often not comparable among different types of projects due to differences in
14 degree of disturbance. Some projects may never be built. An estimate of total disturbed acres or
15 AUMs lost could thus produce misleading conclusions. The level of future solar development
16 within the SEZ is similarly uncertain. Thus, for the needs of this Solar PEIS, it was sufficient to
17 identify and describe the projects and the nature of their potential effects on resources. More
18 quantitative analysis of cumulative effects would be appropriately performed at the proposed
19 project level in a future NEPA analysis.
20

21 The population of Pioche was corrected in the Errata to Section 11.4 in the Final Solar
22 PEIS. An additional correction was placed in Section 11.4.24 Errata to Section 11.4 of the Draft
23 Solar PEIS. Transmission lines and substations that pass near or through Dry Lake Valley were
24 addressed in the Draft Solar PEIS.
25

26 The status of the Southwest Intertie Project was updated in the Final Solar PEIS. The
27 spelling of “County” in Section 11.4-314/27 was corrected in the errata list for this section.
28 Table 11.4.22.2-3 was updated in the Final Solar PEIS to reflect the correct name of the Caliente
29 Rail Alignment project. For shared commercial use, the Final Solar PEIS for the project includes
30 the following statement: “DOE anticipates that the small additional construction and operations
31 activities would result in very little additional impacts over those described for the Proposed
32 Action without shared use.” Thus, no changes in the analysis of the cumulative impacts of the
33 project are needed in the Final Solar PEIS. The status of foreseeable projects analyzed in the
34 Draft Solar PEIS was updated in the Final Solar PEIS, including the wild horse gathers
35 mentioned in the comment.
36

37 The mentioned rail line branch was removed from the figure in the Final Solar PEIS. This
38 correction was included in Section 11.4.24 of the Final Solar PEIS.
39

40 Table 11.4.22.1-1 includes all resource areas for consistency with analyses for other
41 SEZs. For the geographic extent of affected resources, the extent is generally taken as the
42 continuous extent of the resource potentially affected by developments within the SEZ. In the
43 case of counties selected for the socioeconomic effects analysis, the extent of county effects is
44 the county that is affected.
45

1 The discussion in Section 11.4.22.19 of the Draft Solar PEIS considers qualitatively the
2 possibility that environmental justice impacts could occur in the future.

3
4 The Solar PEIS analyzed the cumulative effects of the mentioned Southern Nevada
5 Water Authority (Clark, Lincoln, and White Pine Counties) groundwater development project
6 (Table 11.4.22.2-3 in the Draft Solar PEIS) in the cumulative impacts analysis for the Dry Lake
7 Valley North SEZ. The UNEV Pipeline Project, now under construction, was included in the
8 Cumulative Impacts section for the Dry Lake SEZ in the Draft Solar PEIS, as was the proposed
9 Toquop natural gas power plant. The SWIP was likewise analyzed in the Draft Solar PEIS for
10 both the Dry Lake and Dry Lake Valley North SEZs. The status of these projects was updated
11 Tables 11.3.22.2-1 and 11.4.22.2-1, respectively, in the Final Solar PEIS. The analysis of
12 substations needed to connect solar energy projects within proposed SEZs can only be
13 anticipated in general in the Solar PEIS. The analysis of specifically proposed substations
14 would be performed in future NEPA analyses at the project level.

15 16 17 **3.15.24.17 Cumulative Impacts Assessment for the Proposed Millers SEZ**

18
19 **Summary:** These comments concerned land use; air quality: dust hazard within 100 mi
20 (160 km) of the SEZ, fugitive dust from solar development; environmental justice; contributions
21 to climate change and/or effects of climate change on resources; and Native American concerns
22 about spiritual issues and water resources.

23
24 **Response:** While the proposed SEZ lies in a remote area, it does meet BLM's screening
25 criteria for an SEZ. While the area is served by roads and designated electrical transmission
26 corridors, future developers would have to determine the feasibility of building solar facilities in
27 the proposed SEZ.

28
29 Dust hazards are analyzed in Section 11.7.22.4.12 of the Draft Solar PEIS. The
30 geographic extent of such effects is reasonably encompassed within the 31 mi (50 km) radius
31 analyzed. Also, dust control water would be used to the extent and for the duration needed to
32 minimize exceedances of the NAAQS for particulate matter at the site boundary of a given
33 project during construction. Routine dust control watering would also be used during facility
34 operations, for example, on roads, when dust emissions would be much less of a concern.

35
36 Tribes in the region have been and continue to be consulted on decisions regarding
37 BLM's Solar Energy Program. Native American economic, cultural, and spiritual concerns
38 affecting tribes are considered in Section 11.7.18 of the Draft Solar PEIS. The tribes mentioned
39 in the comment are noted for future reference. While the environmental justice analysis in
40 Section 11.7.20.1 did consider American Indian populations, the analysis concluded that for any
41 minority "the number of minority individuals does not exceed 50% of the total population in the
42 area, and the number of minority individuals does not exceed the state average by 20 percentage
43 points or more; thus, in aggregate, there is no minority population in the SEZ area based on
44 2000 Census data and CEQ guidelines." Thus, while Native American populations do not strictly
45 meet the criteria used to identify minority populations within the region of interest for

1 considerations of concerns on the basis of environmental justice, their concerns are considered
2 elsewhere in the Solar PEIS.

3
4 The cumulative impacts analysis in the Solar PEIS does consider the effects of climate
5 change in Nevada, in Section 11.7.22.3.4. The BLM agrees that dramatic climate change could
6 affect plant and animal life in the area around the proposed Millers SEZ.

7
8 Although a wind study at the proposed Millers SEZ is beyond the scope of the Solar
9 PEIS, the concerns mentioned in the comment regarding soil disturbance, fugitive dust, soil
10 erosion, and removal of vegetation over large land areas are considered in the Solar PEIS, as
11 are Native American concerns related to medicinal and food plants, trails, and sacred places.
12 Section 11.7.22.4.17 analyzes the potential cumulative effects on Native American concerns,
13 while Section 11.7.18.3 lists measures that would be taken to mitigate such effects, including
14 avoidance of sensitive areas.

15
16 Section 11.7.22.4.8 of the Draft Solar PEIS notes the limited water resources available in
17 the Tonopah Flat basin and the fact that water resources are over-appropriated. Groundwater
18 drawdown is mentioned as one of the potential effects of large withdrawals, should they be
19 allowed. Drawdown could affect all area groundwater uses. The likely infeasibility of solar
20 technologies that require large quantities of cooling water is also noted here. Limited availability
21 of groundwater and potential drawdown would be major considerations in the selection of solar
22 technologies used in the proposed SEZ.

23 24 25 **3.15.25 Hazardous Materials and Wastes**

26
27 **Summary:** Comments expressed concern over the potential for solar facilities to emit
28 pollution from construction equipment, or to have accidental spills of hazardous materials.
29 Concerns regarding waste ponds and for contaminated runoff from solar facilities adversely
30 affecting off-site areas were expressed.

31
32 **Response:** Extensive discussion of the hazardous materials and wastes potentially
33 associated with solar energy facilities was provided in Section 3.5.1 of the Draft Solar PEIS.
34 Design features required to control impacts from hazardous materials and waste are presented in
35 Section A.2.2.21 of Appendix A. Design features include a requirement that engineering controls
36 be used to eliminate or minimize the impacts of accidental spills at solar facilities. These design
37 features adequately address the concerns expressed in the comments.

38 39 40 **3.16 SOLAR ENERGY DEVELOPMENT ADVANTAGES AND PROBLEMS**

41 42 43 **3.16.1 General Comments in Support of Developing Solar Energy Resources**

44
45 **Summary:** Many commentors support solar energy as a way to end the reliance on fossil
46 fuels and to create local jobs. Commentors recommended that the federal government promote

1 and support clean energy while subsidies for oil, coal, and nuclear energy should be reduced.
2 Commentors argued that solar energy is a clean and unlimited source of power and is better for
3 national security and for reducing climate change. Many agencies and organizations indicated
4 their support for solar energy in their comments.
5

6 **Response:** The comments are supportive of solar energy development in general.
7
8

9 **3.16.2 Comments Opposing Solar Development and Use of Public Lands**

10
11 **Summary:** A few commentors stated their opposition to solar development because it
12 would not be sufficient to replace the nation’s dependence on foreign oil. They also added that
13 solar power is not clean or sustainable, because of the necessary use of gas, water, and toxic heat
14 transfer fluids. Commentors also thought that solar energy will not create jobs because the
15 components are not built in this country.
16

17 A number of commentors expressed their opposition to the use of public land for solar
18 development. Commentors argued that (1) as some of the last ecosystems of this size, public
19 land should be saved for conservation or other low-intensity multiple use; (2) solar energy
20 development will permanently destroy the landscape and sacred areas; and (3) use of BLM
21 lands should be as a last resort, not a first option. Several commentors disagreed that private
22 companies should be allowed to develop public land for their own profits and should only
23 develop private, non-pristine lands. Comments suggested that any mitigation can be
24 accomplished through establishing conservation areas within public lands, and that offering
25 incentives and having zones of development on public land will encourage a new industrial
26 “gold rush.”
27

28 **Response:** The comments opposing solar development in general are noted; the agencies
29 acknowledge that solar energy development is only a part of the national energy strategy.
30 Developing solar energy on non-BLM lands does not respond to the purpose and need for agency
31 action in this Solar PEIS and would not meet the objectives established for the BLM by the
32 Energy Policy Act of 2005 and Secretarial Order 3285A1, both of which require the BLM to
33 facilitate renewable energy development on public lands.
34
35

36 **3.16.3 Comments Opposing Utility-Scale Solar Development**

37
38 **Summary:** Several commentors are opposed to utility-scale solar energy development
39 because the scale of environmental destruction is too large and will result in long-term,
40 cumulative, ecological impacts on fragile desert and western lands. Commentors argued that
41 solar fields should be kept out of the desert, so that the region is not dominated by this type of
42 development. Concern was expressed that the industrial scale model does not work, with
43 subsidies and tax incentives that benefit only large corporations. Other commentors stated that
44 having concentrated energy development creates more risks of power interruption and is a risk to
45 national security, the environment, and the economy.
46

1 **Response:** In accordance with FLPMA (Section 103(c)), public lands are to be managed
2 for multiple uses that take into account the long-term needs of future generations for renewable
3 and non-renewable resources. The Secretary of the Interior is authorized to grant ROWs on
4 public lands for systems of generation, transmission, and distribution of electric energy
5 (Section 501(a)(4)).
6

7 As discussed in Section 1.1 of the Final Solar PEIS, the Energy Policy Act of 2005
8 (P.L. 109-58) requires the Secretary of the Interior to seek to approve non-hydropower
9 renewable energy projects on public lands with a generation capacity of at least 10,000 MW of
10 electricity by 2015; this level of renewable energy generation cannot be achieved without utility-
11 scale generation systems. In addition, Order 3285A1 issued by the Secretary of the Interior
12 requires the BLM and other DOI agencies to undertake multiple actions to facilitate large-scale
13 solar energy production.
14

15 The BLM has identified a need to respond in a more efficient and effective manner to
16 the high interest in siting utility-scale solar energy development on public lands and to ensure
17 consistent application of measures to avoid, minimize, and mitigate the adverse impacts of such
18 development. The BLM is therefore considering replacing certain elements of its existing solar
19 energy policies with a comprehensive Solar Energy Program that would allow the permitting
20 of future solar energy development projects to proceed in a more efficient, standardized, and
21 environmentally responsible manner. The BLM's proposed Solar Energy Program under both
22 action alternatives employs a mitigation hierarchy to address potential impacts—avoidance,
23 minimization, and offset of unavoidable impacts. The BLM is considering restricting utility-scale
24 solar energy development from lands where it has determined such development is incompatible
25 with existing resources, resource uses, and special designations. The BLM has a process for
26 identifying priority areas for solar energy development that have low or relatively low resource
27 conflicts and a comprehensive process for approving projects outside of priority areas. In
28 addition, the BLM has included a set of programmatic design features required of all solar
29 energy development on BLM-administered lands to avoid, minimize, and/or mitigate adverse
30 impacts.
31

32 The DOE recognizes that the present electric grid, built decades ago, was based on a
33 centralized generation approach and was not designed to handle high levels of distributed
34 renewable energy systems. It has therefore launched the Renewable Systems Interconnection
35 study to identify the technical and analytical challenges that must be addressed to enable high
36 penetration levels for distributed energy systems, as well as the Solara Rooftop Challenge to
37 reduce administrative barriers to residential and small commercial PV solar installations by
38 streamlining, standardizing, and digitizing administrative processes. Complex permitting and
39 grid connection processes increase the cost of solar energy systems and limit the growth of the
40 solar industry. The objective of the Solar Rooftop Challenge is to make the process of going
41 solar simpler, faster, and more cost-effective for residents and businesses.
42
43

1 **3.17 OTHER ISSUES**

2
3
4 **3.17.1 Distributed Generation**

5
6 **Summary:** Many commentors stated that generating electricity in a centralized area and
7 transmitting it over long distances is antiquated and creates utility monopolies. Commentors
8 supported distributed generation, in which electricity is generated on a smaller scale in homes
9 and businesses and which has proven successful in countries such as Germany. Commentors
10 mentioned residential and commercial rooftops, parking lots, government buildings, abandoned
11 agricultural fields, brownfields, and the perimeters of highways and in-city canals in the
12 Southwest as ideal locations for solar development. By using existing infrastructure, commentors
13 argued that more open space would remain available for recreation and wildlife, be better for
14 national security, and be more secure from natural disasters.

15
16 **Response:** As discussed in Section 1.2, the scope of the PEIS is limited to utility-scale
17 solar development, in part, because the Energy Policy Act of 2005 and DOI Secretarial Order
18 3285A1 require that the BLM take steps to facilitate development at that scale. The development
19 of distributed-generation, small-scale solar energy facilities, such as rooftop-mounted PV
20 systems, is not included in the scope of this PEIS. Although such solar energy development will
21 be an important component of future electricity supplies (and is the focus of separate DOE
22 initiatives; see Section 2.5.1 of the Final Solar PEIS), current research indicates that the
23 development of both distributed-generation and utility-scale solar power will be needed, along
24 with other energy resources and energy efficiency technologies. Because these systems typically
25 do not include electricity storage, they cannot provide power during the evenings or at night, and
26 the power output can fluctuate significantly during cloudy weather. As a result, buildings
27 equipped with rooftop PV systems remain dependent on the transmission grid, and electric
28 utilities must maintain adequate generating capacity to provide electricity to these customers
29 when needed. Ultimately, both utility-scale and distributed-generation solar power will need to
30 be deployed at increased levels, and the highest penetration of solar power overall will require a
31 combination of both types.

32
33 Alternatives incorporating distributed generation with utility-scale generation, or
34 focusing exclusively at distributed generation, do not respond to the agencies' purpose and need
35 for agency action in this Solar PEIS. As discussed in Section 1.1, the Energy Policy Act of 2005
36 (P.L. 109-58) requires the Secretary of the Interior to seek to approve nonhydropower renewable
37 energy projects on public lands with a generation capacity of at least 10,000 MW of electricity
38 by 2015; this level of renewable energy generation cannot be achieved through distributed-
39 generation systems. In addition, Order 3285A1 issued by the Secretary of the Interior requires
40 the BLM and other DOI agencies to undertake multiple actions to facilitate large-scale solar
41 energy production.

42
43 The evaluation of distributed-generation systems does fall within the scope of DOE's
44 mission; however, it is being handled in other initiatives separate from this PEIS. The DOE
45 recognizes that the present electric grid, built decades ago, was based on a centralized
46 generation approach and was not designed to handle high levels of distributed renewable

1 energy systems. In 2007, the DOE launched the Renewable Systems Interconnection (RSI) study
2 to identify the technical and analytical challenges that must be addressed to enable high
3 penetration levels for distributed energy systems, with a particular emphasis on solar PV
4 systems (see Section 2.5.1 of the Final Solar PEIS). As a result of the RSI study, in 2008, DOE
5 initiated the Solar Energy Grid Integration Systems (SEGIS) program to further develop
6 electronics and build smarter, more interactive systems and components. In addition, in 2011, the
7 DOE launched the Rooftop Solar Challenge to accelerate significant improvements in market
8 conditions for solar PV projects.
9

10 Through these efforts, the DOE is actively pursuing the expansion of distributed-
11 generation systems and their contribution to the country's electricity supply. While distributed
12 generation of solar energy clearly is an important component of DOE's SunShot Initiative and
13 Solar Energy Technologies Program, inclusion in this analysis of an alternative incorporating
14 distributed generation does not address the DOE's purpose and need to satisfy both E.O.s and
15 respond to this congressional mandate and promote, expedite, and advance the production and
16 transmission of environmentally sound energy resources, including renewable energy resources
17 and, in particular, cost-competitive solar energy systems at the utility scale (see Section 1.4.1).
18
19

20 **3.17.2 Conservation and Demand-Side Management**

21
22 **Summary:** A few commentors believed strongly there is a need to conserve energy and
23 that there should be stringent conservation measures for maximum efficiency in homes,
24 businesses, and manufacturing.
25

26 **Response:** Recommendations that the BLM and DOE evaluate alternatives incorporating
27 conservation of energy and demand-side management do not respond to the purpose and need for
28 agency action in this Solar PEIS. Like the requests for distributed-generation alternatives
29 (see 3.17.1 above), recommendations that the BLM and DOE evaluate alternatives incorporating
30 conservation of energy and demand-side management do not respond to the purpose and need for
31 agency action in this PEIS. In general, conservation initiatives would be designed to reduce
32 energy consumption levels in order to reduce the need for increased electricity generation
33 capacity. Demand-side management would involve specific actions taken by utilities, their
34 regulators, and other entities to induce, influence, or compel consumers to reduce their energy
35 consumption, particularly during periods of peak demand.
36

37 While these types of initiatives are important components of the country's efforts to
38 address future energy needs, they do not respond to the purpose and need for agency action in
39 this PEIS as defined by the agencies. These efforts do not address the agencies' purpose and
40 need to satisfy both E.O.s and respond to this congressional mandate and promote, expedite, and
41 advance the production and transmission of environmentally sound energy resources, including
42 renewable energy resources and in particular, cost-competitive solar energy systems at the utility
43 scale.
44
45

3.17.3 Analysis of Life-Cycle Impacts of Solar Energy Development

Summary: Commentors were concerned that replacing carbon-sequestering desert and grassland ecosystems with solar energy development will result in long-term environmental impacts. Comments included the lack of scientific evidence to support the claim that solar energy reduces GHG emissions, and that utility scale solar projects use the same amount of raw materials and water resources as conventional electrical generation plants. In addition, commentors argued that the land area footprints and ecosystem destruction are larger than those of open pit mining. Commentors requested that life-cycle calculations be made regarding the amount of natural resources consumed in manufacturing and the amount of waste products generated. Commentors also recommended that the loss of CO₂ sink capability should be factored into mitigation calculations.

Response: The agencies recognize that consideration of life-cycle impacts will provide valuable information supporting energy policy development in this country. However, the impacts associated with other solar energy life-cycle activities were not determined to be connected actions for the purposes of this Solar PEIS. As appropriate, these types of activities would be addressed as part of the cumulative effects analysis in project-specific environmental reviews.

For the DOE, life-cycle analysis of energy development is an important research topic. Such analyses are being conducted by the DOE across its programs, including life-cycle analyses for solar energy technologies.

3.17.4 Analysis of Development on Other Federal, State, or Private Lands

Summary: Many commentors would like to see solar development happen on other non-BLM lands, both public and private lands. The recurring request is that these lands are previously disturbed, have low resource value, no longer contain native vegetation such as abandoned agricultural fields, or are currently brownfields, military bases, or small sites owned by towns and school districts. Commentors asserted that the public could help in identifying disturbed lands appropriate for solar energy development. Commentors suggested that expansion should be allowed on private lands because of perceived fewer resource conflicts and an accelerated permitting process and that there may be some owners willing to sell their land with attached water rights. Additional suggestions included locations adjacent to roads, urban areas, existing transmission lines, and substations.

Response: Developing solar energy on non-BLM lands do not respond to the purpose and need for agency action in this Solar PEIS and would not meet the objectives established for the BLM by the Energy Policy Act of 2005 and Secretarial Order 3285A1, both of which require the BLM to facilitate renewable energy development on public lands.

The benefits and opportunities associated with the use of areas in, or adjacent to, previously contaminated or disturbed lands for solar energy development are highlighted in the variance process, the Identification Protocol for New SEZs, as well as the incentives for SEZs

1 (partnering with suitable nonfederal lands) in the Final Solar PEIS. The BLM has also decided to
2 leave small, in some cases isolated, parcels in the variance land base to allow for the opportunity
3 to combine federal and nonfederal lands (that may or may not be disturbed or degraded).
4

5 Note that the analysis of solar energy development on other federal or private lands is
6 encompassed in the scope of the Solar PEIS analysis. The geographic scope of DOE's analysis
7 includes all lands in the six-state study area. As discussed in Section 1.4.1, the DOE may support
8 solar projects on all types of lands, including BLM-administered lands and other federal, state,
9 tribal, and private lands. The description of the affected environment in Chapter 4 and the results
10 of the analysis of potential impacts and mitigation measures in Chapter 5 may be applicable, as
11 appropriate, across all lands within the study area. Because the scope of Chapters 4 and 5
12 encompasses all lands within the six-state study area, parties other than the BLM and DOE may
13 be able to use the information in this Solar PEIS to support their own analyses of utility-scale
14 solar energy development in this area.
15
16

17 **3.17.5 Development on Previously Disturbed Lands**

18

19 **Summary:** Several commentors strongly believed that utility-scale solar energy
20 development should be limited to already disturbed lands before pristine desert landscapes are
21 compromised. Commentors made several suggestions for alternative locations of solar energy
22 development projects, including both private and public disturbed lands. In addition, commentors
23 recommended siting solar energy development near existing transmission lines and utilities, and
24 new transmission lines should also be located on disturbed lands. Comments also stressed the
25 need for solar energy developments to be in close proximity to cities or large towns, and in
26 locations that do not disturb important migratory corridors, wilderness areas, or important
27 habitats.
28

29 **Response:** Note that there is no clear and well-established definition of what constitutes
30 "previously disturbed public lands," nor are there any clearly defined thresholds for determining
31 when lands cannot be restored to their former, undeveloped state. The BLM does see the
32 potential value of development on such lands, however. The benefits and opportunities
33 associated with the use of areas in, or adjacent to, previously contaminated or disturbed lands for
34 solar energy development is highlighted in the variance process, the Identification Protocol for
35 New SEZs, as well as the incentives for SEZs (partnering with suitable nonfederal lands) in the
36 Final Solar PEIS. For example, a preference under the variance process would be given to
37 proposed projects that will be located in, or adjacent to, previously contaminated or disturbed
38 lands such as brownfields identified by the EPA's RE-Powering America's Land Initiative
39 (<http://www.epa.gov/renewableenergyland>); mechanically altered lands such as mine-scarred
40 lands and fallowed agricultural lands; idle or underutilized industrial areas; lands adjacent to
41 urbanized areas and/or load centers; or areas repeatedly burned and invaded by fire-promoting
42 non-native grasses where the probability of restoration is determined to be limited. The BLM has
43 also decided to leave small, in some cases isolated, parcels in the variance land base to allow for
44 the opportunity to combine federal and nonfederal lands in areas that are disturbed.
45

1 As described in the Solar PEIS, sources of information on degraded, disturbed, or
2 previously disturbed areas should include (1) landscape-scale information and landscape-scale
3 ecological assessments (e.g., landscape conservation cooperatives, rapid ecological assessments,
4 and state-level crucial habitat assessment tools), which identify converted or highly degraded
5 lands on BLM-administered and adjacent federal and nonfederal lands; (2) coordination with the
6 EPA and relevant state agencies that catalog degraded, disturbed, or previously disturbed sites;
7 and (3) outreach to local communicates and the public regarding possible degraded, disturbed, or
8 previously disturbed sites.
9

10 **3.17.6 Restricting Development to Populated Areas**

11 **Summary:** Several commentors stated that solar energy development should be restricted
12 to populated areas and that resources should be developed in cities where they are needed.
13 Commentors believe that there would be less transmission loss than transmitting from remote
14 wilderness areas to areas of high demand. Also, distances traveled by employees and for hauling
15 construction materials would be reduced if solar development were located near existing
16 communities. Commentors listed brownfields, industrial buildings, abandoned factories, and
17 parking areas as ideal locations for solar energy development within urban areas. One
18 commentor did mention that most industrial facilities prefer to locate away from populated areas
19 because of possible concerns from the local populace that will result in additional project costs.
20
21

22 **Response:** Although the issue of locating solar energy development in populated areas
23 was not incorporated into the Solar PEIS as an independent alternative, consideration was given
24 to proximity of available lands to existing infrastructure such as transmission lines. Some of the
25 proposed SEZs are located close to population centers. The Solar PEIS also analyzes the social,
26 economic, and environmental impacts of constructing and operating solar energy facilities that
27 may be located away from population centers.
28
29

30 From the DOE's perspective, it may elect to establish programmatic guidance that
31 promotes utility-scale solar development near populated areas
32
33

34 **3.18 TOPICS OUTSIDE THE SCOPE OF THE SOLAR PEIS OR NOT REQUIRING A** 35 **RESPONSE**

36 **3.18.1 Requests for Analysis of Non-solar Technologies**

37
38 **Summary:** Many commentors stated that the use of natural gas at solar facilities and the
39 impacts from fossil fuel use at co-generation facilities should be assessed in the Solar PEIS.
40
41

42 **Response:** The PEIS recognized that small amounts of natural gas may be used at solar
43 facilities to maintain the temperature of the heat transfer fluids and for other purposes; this small
44 use is considered to have low emission potential (see Section 5.11.2.1 of the Draft Solar PEIS).
45 In addition, co-generation projects involving a mix of solar energy technologies and other energy
46

1 technologies (e.g., natural gas, wind, and hydropower) would be subject to the requirements of
2 the new Solar Energy Program if the solar energy component is 20 MW or greater. The impacts
3 (including climate change impacts) of the use of conventional fossil fuel at co-generation
4 facilities have been well documented in environmental studies for such conventional fuel
5 facilities, and are beyond the scope of the Solar PEIS.
6
7

8 **3.18.2 Comments Regarding Government Subsidies for Solar Development**

9

10 **Summary:** Commentors provided comments related to government subsidies including
11 suggestions that the government should provide tax credit incentives for homeowners to install
12 PV systems on their rooftops. Other commentors opposed subsidies including cash grants and
13 loan guarantees for solar energy development because they thought the subsidies would drive up
14 electricity costs for the consumer. One commentor asked whether grant programs are available
15 for low-income populations. Commentors recommended that the PEIS take into account federal
16 subsidies in the evaluation of the efficiency of developing solar energy on public land. Other
17 commentors requested that subsidies for nuclear and petroleum energy sources be redirected
18 towards solar energy development.
19

20 **Response:** Government subsidies, including grants and loan guarantees for utility-scale
21 solar development, small PV distributed generation, and all other forms of energy development
22 are beyond the scope of the Solar PEIS.
23
24

25 **3.18.3 General Comments for Which No Response Was Required**

26

27 **Summary:** These comments were generally introductory text included in comment
28 documents explaining the mission of the organization submitting the comments or otherwise
29 providing background context for the comments submitted. Some comments were simply
30 statements supporting or opposing solar development, with no supporting rationale.
31

32 **Response:** No response is needed.
33
34

35 **3.19 FACTUAL ERRORS OR EDITORIAL CONSIDERATIONS AND REQUESTS FOR** 36 **TEXT CHANGES**

37

38 **Summary:** Many comments were specific, stating that some of the information given in
39 the Draft Solar PEIS or the Supplement to the Draft Solar PEIS was incorrect or requesting that
40 additional details be added to certain discussions.
41

42 **Response:** The PEIS technical staff reviewed these requests and incorporated revisions
43 into the Supplement to the Draft and into the Final Solar PEIS as appropriate.
44
45

1 **TABLE 3-1 Comments Submitted on the Draft Solar PEIS or the Supplement to the Draft Solar**
 2 **PEIS via the Project Web Site, by Mail, or Orally during Public Meetings (presented alphabetically**
 3 **by organization or commentor last name)**

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
21st Century Telecommunications, Inc.	SEDDsupp20004	3.18.3
29 Palms Inn/Innkeepers Association	Solar_IW_012	3.15.20.4, 3.1.5, 3.15.24.12, 3.15.15.1, 3.15.20.7, 3.17.1, 3.15.20.10, 3.15.19.2, 3.15.23.3, 3.14.1, 3.1.6, 3.1.7, 3.15.18.2
29 Palms Inn/Innkeepers Association	SolarS_PD_14	3.15.18.7, 3.15.20.4, 3.17.5
Abbott, Patricia	SEDD10667	3.2.3
Abeles-Allison, Mark	SEDDsupp20020	3.17.4
Abengoa Solar Inc., Amonix, Inc., Audubon California, BrightSource Energy, Inc., Center for Energy Efficiency and Renewable Technologies, Defenders of Wildlife, enXco – an EDF Energies Nouvelles Company, First Solar, Inc., Iberdrola Renewables, Inc., Large-scale Solar Association, Natural Resources Defense Council, NRG Solar LLC, Pacific Gas and Electric Company, Solar Energy Industries Association, SolarReserve, LLC, Southern California Edison, SunPower Corporation, Systems, The Nature Conservancy, The Vote Solar Initiative, The Wilderness Society, Torresol Energy	SEDDsupp20177	3.16.1, 3.5.6, 3.8, 3.11.2, 3.7.22, 3.7.3, 3.7.21, 3.2.6, 3.2.2.1, 3.1.6, 3.8.2, 3.8.5, 3.3.2
Abeyta, Aaron	SolarS_AL_18	3.7.2, 3.15.14.3
Abeyta, Alfonso	Solar_AL_021	3.15.9.1, 3.7.2.1, 3.18.3, 3.15.9.5
Abrams, Sally	SEDD10330	3.2.3
Acerro, Theresa	SEDD10314	3.2.3, 3.17.5
Adams, Mikanuk	SEDD11155	3.2.2.3
Adamyman, Eva	SEDD10987	3.18.3
Adsit, Roy	SEDD10784	3.17.1
Advisory Council on Historic Preservation	Solar_DC_005	3.6.2
Advisory Council on Historic Preservation	Solar_030	3.6.2
Agnew, Grace	SEDD10521	3.2.5
Agnew, Grace	SEDD10522	3.2.5
Aguirre, Sabrina	SEDD11593	3.1.7
Alamosa County	SolarS_AL_09	3.15.20.2, 3.15.22.2, 3.6.3.2
Alamosa County Commission	SolarS_AL_06	3.15.22.2, 3.15.20.1, 3.15.20.2, 3.7.2, 3.7.13, 3.6.1
Albert, Anthony	SEDD10224	3.2.5
Allaire, Lois	SEDD10973	3.2.3
Allen, Carolyn and Tisdale, Donna (Backcountry Against the Dump)	SolarS_029	3.16.3, 3.15.20.8, 3.6.1, 3.7.15, 3.7.5, 3.7.14, 3.15.13.4, 3.15.24.11, 3.2.3, 3.5.1, 3.5.6, 3.13, 3.17.1, 3.15.23.3, 3.15.9.1, 3.18.3, 3.15.5.1, 3.2.2, 3.8.2, 3.6.4, 3.4.1
Allen, Sundra	SEDD11145	3.16.1
Allen, Victoria	SEDD10026	3.17.1
Alongi, Claudia	SEDD10029	3.16.2
Altamirano, Juan	Solar_AL_005	3.15.20.2, 3.7.2

4

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Alton Strategic Environmental Group	SEDD11871	3.6.4, 3.7.20, 3.14.8, 3.7.1, 3.7.6
Amargosa Conservancy	SEDD11841	3.14.2, 3.1.12, 3.6.4, 3.3.2, 3.11.2, 3.11.3, 3.6.3.3, 3.15.9.1, 3.15.9.2, 3.15.9.4, 3.15.9.7, 3.15.9.6, 3.15.13.4
American Rock Art Research Association	Solar_037	3.15.18.10, 3.14.1, 3.15.18.1
Amsden, Liz	SEDD10956	3.2.3, 3.18.3
Anderson, Ginger	SEDD11139	3.2.3
Anderson, Jerald	Solar_SL_002	3.14.1, 3.15.9.1, 3.15.9.4, 3.15.6.3, 3.7.15, 3.7.2, 3.15.20.1, 3.18.3, 3.7.19, 3.1, 3.15.3.1, 3.3.1, 3.5.1, 3.15.24.5
Anderson, Melanie	SEDD11899	3.16.3, 3.16.2
Anderson, Timothy	Solar_IW_019	3.16.2
Andresen, Sherry	SEDD10818	3.18.3
Andrus, Melanie	SEDD10489	3.2.2.3
Angel, Beth	SEDD10567	3.2.5, 3.1.7, 3.1.5, 3.1.12, 3.1.21
Angus, Jerry	SEDD10162	3.15.6.3
Annon, Consuelo	SEDD10859	3.17.6
Antonovich, Michael	SolarS_006	3.6.1, 3.2.2, 3.14.2, 3.8, 3.6.3.2
Anza Borrego Foundation	Solar_018	3.2.2.1
Apgar, Barbara	SEDD11398	3.14.1
Arboleda, Lillian	SEDD11277	3.14.1
Arcana, Judith	SEDD10288	3.14.1, 3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5
Arizona Department of Environmental Quality	Solar_010	3.1.1, 3.1.2, 3.1.3, 3.15.14.5
Arizona Department of Environmental Quality	SEDD10150	3.15.9.2, 3.14.2
Arizona Department of Transportation	SEDD10024	3.2.2, 3.15.22.1
Arizona Department of Water Resources	Solar_001	3.14.2
Arizona Game and Fish Department	SEDD11740	3.2.3, 3.15.10.8, 3.14.1, 3.17.5, 3.6.3.1, 3.8.3, 3.14.2, 3.7.14, 3.15.13.6, 3.15.24.7, 3.15.11.7, 3.15.11.10, 3.15.13.5, 3.15.11.5, 3.7.5
Arizona State Historic Preservation Office	Solar_039	3.2.2, 3.15.18.2, 3.2.1, 3.14.1, 3.6.2
Arizona Wilderness Coalition	Solar_PH_005	3.14.1, 3.14.2, 3.2.2.4, 3.4.1, 3.17.5, 3.8.3
Arizona Wilderness Coalition	Solar_TU_002	3.14.2, 3.2.2.4, 3.14.8, 3.6.3.3
Arizona Wildlife Federation	SEDD11803	3.14.1, 3.8, 3.6.5, 3.18.3, 3.7.11, 3.11.2, 3.4.1, 3.15.11.9
Arkema, Carroll	SEDD10931	3.2.5
Aronowitz, Judi	SEDD10300	3.16.1
Arrow-Weed, Preston	SolarS_EC_02	3.16.2, 3.15.19.3, 3.6.2, 3.16.3
Ashborn, Janice	SolarS_018	3.2.2.1, 3.7.18
Au, Shari	SEDD10871	3.18.3
Audubon New Mexico	Solar_042	3.6.4, 3.14.1, 3.14.2, 3.2.1, 3.8, 3.1.19, 3.6.1
Aughey, Arlene	SEDD10210	3.2.5
August, Boyer	SEDD10544	3.16.1

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Austin, Barara	SEDD11259	3.2.5
Austin, Kevin	SEDD10323	3.2.5
Autrey-Schell, Yovonne	SEDD10278	3.2.2.3, 3.16.1
Baggs, Bo	SEDD11040	3.16.1
Bahn, Theodore	SEDD10915	3.2.5, 3.1.5, 3.1.7, 3.1.12
Baier, Bryan	SEDD11176	3.2.5
Baier, Mary	SEDD10334	3.18.3
Bailey-Pruc, Susan	SEDD10342	3.2.5
Baird, Graeme	SEDD11885	3.17.1, 3.17.5
Bairstow, Diane	SEDD10095	3.16.2, 3.18.3, 3.17.1
Baker, Christine	Solar_046	3.14.1
Baker, Marina	SEDD11369	3.2.5
Baker, Nona	SEDD10382	3.2.5
Balekian, Safiya	SEDD11447	3.16.3, 3.17.1
Bandorf, Judy	SolarS_LV_05	3.17.5, 3.15.6.3, 3.5.4, 3.2.3
Baney, Gary	SEDDsupp20003	3.16.1
Banfield, David	SEDD11693	3.2.5
Banis, Randy	SEDD11895	3.15.5.1, 3.14.2, 3.14.1
Banis, Randy	Solar_BA_010	3.15.5.1, 3.14.1
Bardin, Christopher	SEDD11737	3.17.1
Barker, Claire	Solar_AL_014	3.18.3, 3.7.1, 3.17.5, 3.5.2, 3.7.2
Barker, Claire	SolarS_AL_11	3.7.2.1, 3.18.1, 3.7.1, 3.7.2, 3.17.1
Barlow, Scott	SEDD10793	3.2.5
Barnes, Lyhn	SEDD11117	3.18.3
Barnett, Justin	SEDD11609	3.16.1
Barr, Cassie,	SEDDsupp20065	3.14.2
Barr, Todd	SEDD11797	3.16.2
Barrett, Christine	SEDD11605	3.2.5
Barrett, Linn	SEDD10308	3.2.2.4, 3.2.3, 3.14.2, 3.14.1, 3.1.5, 3.1.6
Barrett, Linn	Solar_048	3.2.2.4, 3.4.1, 3.14.1, 3.1.5, 3.1.6, 3.8
Barrington, Craig	SEDD10245	3.14.1
Barrington, Tim	SEDD10908	3.2.5
Bartell, Frank	SEDD10906	3.2.5, 3.1.7, 3.1.5, 3.1.12, 3.1.21
Bartlett, Palmer G	SEDD11476	3.16.1
Basin and Range Watch	SEDD11886	3.17.4, 3.14.7, 3.17.5, 3.15.13.4, 3.5.1
Basin and Range Watch	SEDDsupp20062	3.9, 3.17.5, 3.1.12, 3.15.15.7, 3.15.18.10, 3.6.1, 3.15.13.5, 3.15.13.9, 3.1.17, 3.5.4, 3.15.9.1, 3.1.18, 3.15.11.13, 3.15.11.2, 3.1.7, 3.6.4, 3.14.7, 3.15.10.3, 3.15.10.8, 3.7.2, 3.15.18.9, 3.2.2.3, 3.7.22, 3.1, 3.17.1, 3.7.1, 3.14.3, 3.14.5, 3.14.8, 3.14.1, 3.15.23.1, 3.15.23.4
Basin and Range Watch	Solar_IW_020	3.2.3, 3.1.7, 3.6.1, 3.9, 3.6.4, 3.14.7, 3.15.13.3, 3.15.20.6, 3.15.20.7, 3.18.3
Basin and Range Watch	SolarS_LV_03	3.6.1, 3.17.4, 3.17.5, 3.14.8, 3.14.7, 3.1.12, 3.15.14.11, 3.15.9.1, 3.1.7, 3.15.18.1, 3.2.2.2, 3.15.10.8
Battrick, Dennis	SEDD10684	3.1.7, 3.1.5, 3.1.12, 3.1.21

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Bauer, Kim	SEDD10035	3.2.3
Bauer, Vikki	SEDDsupp20035	3.6.1, 3.2.2, 3.18.3, 3.6.3.2
Beach, John	SEDD11866	3.14.2, 3.1.7, 3.15.9.1, 3.15.9.4
Beach, John	Solar_IW_024	3.2.3
Beal, Adam	SolarS_AL_01	3.17.1, 3.14.1, 3.2.2, 3.5.6, 3.7.11
Bea'ls, Alan	SEDDsupp20113	3.14.1
Beams, Kay	SEDD10403	3.14.1, 3.2.5
Bean, Brandon	SEDD10591	3.1.7, 3.1.5, 3.1.12, 3.1.21
Bean, Brandon	SEDD10627	3.18.3
Beaubien, Keeta	SEDD11458	3.16.1
Beaver County Commission	SEDD11633	3.16.1, 3.6.3.2, 3.15.3.1, 3.1, 3.2.1, 3.1.23, 3.1.24, 3.14.2
Beaver, Cindy	SEDD10099	3.14.2
Beavers, Nancy	SEDD11190	3.2.5
Becker, Anna	SEDD10226	3.2.5
Becker, Marsha	SEDD10741	3.2.5
Beckman, Nan	SEDD10368	3.2.5, 3.1.21, 3.1.12
Begalke, Donald	SEDD10101	3.6.1
Begalke, Donald	Solar_016	3.6.1, 3.1.1, 3.5.1, 3.12, 3.15.10.5, 3.1.3, 3.15.11.6, 3.15.11.10, 3.14.1, 3.6.2, 3.15.19.10, 3.16.1, 3.18.3, 3.2.3, 3.14.2, 3.8, 3.2.1
Bell, Chuck	Solar_033	3.7.11
Bell, Jim	SEDD10032	3.2.3, 3.17.1
Bell, Jim	SEDD11888	3.16.3, 3.17.1
Benally, Marley	Solar_PH_018	3.16.1, 3.14.2
Benedetto, Frank	SEDD10451	3.18.3
Benford, Al	SEDD10474	3.2.5
Bengtson, Peter	SEDD10080	3.17.5, 3.14.1
Benjamin, Glen	SEDD10676	3.18.3
Benjamin, Glen	SEDD11395	3.16.1
Bennett, Chelsea	SEDD10734	3.2.5
Bennett, Virginia	SEDD10254	3.2.3
Bentley, Kathy	SEDD10630	3.2.5, 3.14.1, 3.1.7, 3.1.5, 3.1.12, 3.1.21
Berger, Bradford	SEDD11802	3.16.2, 3.17.5
Berger, Bruce	SEDD11401	3.2.5
Berger, Gretchen	SEDD10967	3.18.1
Berggren, Richard	SEDD11279	3.2.5
Berkeley, Carol	SEDD11402	3.2.3
Berkshire, David	SEDD10578	3.2.5
Bernalillo County, New Mexico	SolarS_003	3.6.1, 3.2.2, 3.14.2, 3.18.3, 3.8, 3.6.3.2
Bernheimer, Rob	Solar_IW_018	3.14.8, 3.8.1
Bertaut, Carmel	SEDD10708	3.2.5
Betz, Reid	SEDD11442	3.17.1
Bevilacqua, Elaine	SEDD11218	3.2.3

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Big Pine Paiute Tribe of the Owens Valley	SEDDsupp20152	3.6.1, 3.14.7, 3.2.2.1, 3.1.12, 3.1.13, 3.1.14, 3.1.16, 3.1.17, 3.1.18, 3.1.22, 3.1.23, 3.1.24, 3.15.19.1, 3.17.5, 3.6.3.3, 3.17.1, 3.2.3, 3.2.2, 3.14.1, 3.8.2, 3.15.19.4, 3.14.2, 3.1.4, 3.1.7
Big Pine Paiute Tribe of the Owens Valley	Solar_051	3.14.2, 3.15.19.4, 3.2.3, 3.15.19.1, 3.17.5, 3.8.2, 3.1.4, 3.1.5, 3.1.6, 3.1.7, 3.15.19.7, 3.6.2, 3.15.19.6, 3.15.19.10, 3.9, 3.17.1, 3.18.2, 3.6.4, 3.14.7, 3.14.3
Biggs, Leon	SEDD11712	3.18.3
Billeaud, Theresa	SEDD10320	3.16.1
Bird, Jim	SEDD10988	3.18.3
Bish, Margaret	SEDD11258	3.2.3
Bishop, Norman	SEDD10820	3.2.5
Bishop, Scott	SEDD10810	3.17.1
Bisson, Henri	Solar_TU_009	3.7.11, 3.6.3.3, 3.4.1, 3.17.4, 3.2.1, 3.17.5
Bjorn, Jeff	SEDD10933	3.2.5, 3.1.7, 3.1.5, 3.1.12, 3.1.21
Black, Angela	SEDD11241	3.2.5
Blackman, Barbara	Solar_PH_017	3.7.14, 3.7.3
Blackmer-Blomquist, Stacy	SEDD10058	3.16.1, 3.2.2.3
Blackwelder, Alma	Solar_050	3.2.3, 3.8, 3.14.1
Blanck, Heidi	SEDD10955	3.2.5, 3.1.7, 3.1.5, 3.1.12, 3.1.21
Bley, Ann	SEDD10064	3.14.1, 3.14.2, 3.6.3.2, 3.8
Blier, Robin	SEDD11529	3.16.1
Blythe County Chamber of Commerce	Solar_041	3.16.1, 3.2.3, 3.14.1
BNSF Railway Co.	SEDDsupp20116	3.8, 3.7.3, 3.15.22.3, 3.15.9.3, 3.2.2.2, 3.3.1, 3.15.23.2, 3.15.23.3, 3.6.3, 3.6.4
Bodendorf, Jan	SEDDsupp20115	3.16.3
Boering, Don	SEDDsupp20070	3.6.1
Bollin, Joseph	SEDD11284	3.18.1
Bolt, Patricia	SEDD11180	3.16.1
Boone, James	SEDD10892	3.2.5
Boone, Jim	SEDD11731	3.2.5
Boone, Mary	SEDD10604	3.2.5
Bosco, Jessica	SEDD10423	3.2.3
Bosh, Joni	SEDDsupp20154	3.6.1, 3.17.5, 3.14.1
Bowen, Mary	SEDD11339	3.2.5
Boyd, Michael	SEDD10085	3.18.3
Boyington, Charles	SEDD10860	3.18.3
Boyle, Kenneth	SEDD10856	3.16.1
Bradley-Phillips, Sabine,	SEDD10431	3.17.1
Brady, John	SEDD11271	3.2.5
Brady, Maria	SEDD11654	3.16.1
Branagan, Jackie	SEDD11536	3.16.1
Branch, Peter	SEDD11455	3.16.1
Branson, Carih	SEDD11171	3.2.5
Braun, Beth	SEDD11116	3.2.5
Brazier, Helene	SEDD10457	3.2.1
Breakfield, Sandra	SEDD10809	3.2.5

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Brebner, Linda	SEDD11289	3.2.5
Breckenridge, Bonnie	SEDD11036	3.2.3
Brennan, Patricia	SEDDsupp20092	3.14.1, 3.17.5
Bresko, Joan	SEDD10777	3.2.5, 3.1.7, 3.1.5, 3.1.12, 3.1.21
Brettin, David	SEDD11266	3.16.1, 3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5
Brewer, Molly	SEDD10702	3.18.3
Briggs Law Corporation on behalf of Californians for Renewable Energy	SEDD11896	3.2.3, 3.14.8, 3.6.4, 3.15.19.4, 3.15.19.6, 3.15.24.2, 3.7.18, 3.15.13.4, 3.15.19.2, 3.15.9.1, 3.15.23.3, 3.3.1, 3.9, 3.14.7, 3.17.4, 3.11.1
Briggs, Sharise	SEDD10811	3.18.3
BrightSource Energy	SolarS_PD_04	3.14.2
BrightSource Energy, Inc.	SEDDsupp20187	3.14.2, 3.8, 3.14.1, 3.16.1, 3.11.2, 3.2.6, 3.6.1, 3.7.21, 3.12
BrightSource Energy, Inc.	Solar_SA_004	3.14.2, 3.5.6, 3.6.3.3
Brink, Ron	Solar_AL_009	3.7.2, 3.2.3
Brodie, Ricki	SEDDsupp20022	3.2.2.1, 3.14.1
Brodie, Rickie	SolarS_PD_06	3.16.1, 3.2.3, 3.2.2.3, 3.1.7, 3.14.1
Brooks, Deborah	SEDD10767	3.2.5
Brown, Brian	Solar_BA_003	3.16.1, 3.6.4, 3.14.2, 3.2.2, 3.1.12, 3.15.9.1, 3.15.9.2, 3.15.9.4, 3.15.24.9
Brown, Caroline	SEDD11699	3.17.1, 3.17.6
Brown, Michael	SEDDsupp20030	3.12, 3.18.1
Brown, Nancy	SEDD10965	3.2.5
Bruno, Robert	SEDD10969	3.16.1
Bruno, Rose	SEDD10977	3.16.1
Bryan, Lori	SEDD11386	3.2.5
Bryant, James	SEDD10022	3.17.5, 3.17.1
Brylski, Geraldine	SEDD10729	3.16.1
Buckingham, Hillary	SEDD11511	3.2.5
Buell, Barbara	SEDD10564	3.2.3
Bullock, Elizabeth	SEDD10839	3.2.5
Bultot, Roger	SEDD10935	3.2.5
Bundy, Ed	Solar_CC_003	3.1.16, 3.16.1, 3.7.2
Burckhardt, Deborah	SEDD11674	3.16.1
Burg, Donald	SEDD11288	3.2.5, 3.18.2
Burgi, Janice	SEDD10748	3.2.5
Burk, Joyce	SEDD10580	3.2.5
Burkhead, Renee	SEDD10727	3.18.3
Burks, Paul	SEDD10236	3.16.1
Burley, Chris	Solar_055	3.2.3, 3.16.1, 3.14.1, 3.8, 3.1.5, 3.2.2.1, 3.1.6, 3.15.11.1, 3.15.13.1, 3.15.13.3, 3.3.2, 3.15.9.1, 3.2.2.3
Burley, David	SEDD11187	3.14.1, 3.2.5
Burlingame, Linda	SEDD11220	3.18.3
Burns, Vicki	SEDD11194	3.2.5
Burpee, Kathy	SEDD10484	3.2.3
Burr, Eric	SEDD11304	3.2.5
Burt, Al,	SEDD11323	3.16.3

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Button, James	SEDD11094	3.2.5, 3.14.1, 3.1.7, 3.1.5, 3.1.12, 3.1.21
Button, Jerry	SEDD11027	3.14.1, 3.1.7, 3.1.5, 3.1.12, 3.1.21
Buxton, Cynthia	SEDDsupp20082	3.6.4, 3.17.1
Byrd, Cynthia	SEDD10389	3.2.5
Cabeza-Kinney, Cristina	SEDDsupp20072	3.17.1, 3.16.3
Cadora, Eric	SEDD11626	3.2.5
Cadzow, Daniel	SEDD11273	3.16.1
Cain, Barbara	SEDD10473	3.16.1
Caine, William	SEDD10196	3.17.1
Caldwell, James	SEDD10362	3.2.5
California Association of Four Wheel Drive Clubs	SolarS_PD_07	3.15.5.1, 3.18.3, 3.7.13, 3.2.1, 3.15.7.4, 3.15.7.7
California Desert Advisory Council	SEDD11876	3.2.3, 3.11.1, 3.6.1, 3.15.20.10, 3.7.13, 3.2.1, 3.2.2, 3.17.5, 3.4.1, 3.14.7, 3.14.8, 3.15.24.8, 3.15.5.1, 3.15.11.11
California Desert Coalition	SEDD11780	3.5.1, 3.6.1, 3.11.2, 3.6.4, 3.14.8, 3.11.3, 3.17.3, 3.15.14.1, 3.17.5, 3.9, 3.14.6, 3.14.2, 3.2.2.4, 3.1.5, 3.1.6, 3.1.7, 3.1.4
California Desert and Renewable Energy Working Group (Sierra Club, The Nature Conservancy, Defenders of Wildlife, The Wilderness Society, Large-Scale Solar Association, kRoad Power, Audubon California, BrightSource Energy, Defenders of Wildlife, National Resources Defense Council, Center for Energy Efficiency and Renewable Technologies, First Solar, Inc.)	Solar_045	3.6.1
California Desert and Renewable Energy Working Group, courtesy of Resources Legacy Fund	SEDD11832	3.6.4, 3.6.3.3, 3.8, 3.1.5, 3.7.3, 3.11.2, 3.11.3, 3.7.14, 3.2.1, 3.17.4, 3.17.5, 3.17.6, 3.2.2, 3.15.13.1, 3.15.13.3, 3.15.13.6, 3.15.11.4, 3.6.2, 3.15.18.9, 3.5.1, 3.5.6, 3.8.4, 3.8.5
California Desert Coalition	Solar_IW_009	3.9, 3.17.1, 3.3.2, 3.15.11.11, 3.1.5, 3.1.6, 14.7
California Energy Commission, California Department of Fish and Game	Solar_SA_008	3.1.5, 3.17.4, 3.6.3.3, 3.14.1
California Energy Commission, California Department of Fish and Game	SEDD11831a	3.6.3.3, 3.17.4, 3.15.11.8, 3.15.13.9, 3.19, 3.15.13.7, 3.15.11.6, 3.8.1, 3.8.2, 3.8.5, 3.15.12.1, 3.15.13.4, 3.7.20, 3.15.24.12, 3.1.7, 3.13, 3.15.9.3, 3.15.13.10, 3.1.5, 3.1.6, 3.15.13.1, 3.19, 3.15.24.11, 3.1.4, 3.3.2, 3.15.10.1, 3.5.1, 3.5.3, 3.15.11.7, 3.15.9.1, 3.15.7.8, 3.15.9.2, 3.15.11.12, 3.15.13.3, 3.15.9.6, 3.15.10.7, 3.15.10.2, 3.15.11.9, 3.7.3, 3.15.10.6, 3.15.11.2, 3.15.11.11, 3.15.11.10

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
California Energy Commission, California Department of Fish and Game	SEDD11831b	3.19, 3.1.6, 3.15.13.10, 3.1.7, 3.15.1.2, 3.15.10.1, 3.15.11.8, 3.15.13.4, 3.15.13.1, 3.15.13.9, 3.15.9.3, 3.15.9.1, 3.15.11.4, 3.15.11.6, 3.15.11.9, 3.15.13.3, 3.15.24.12, 3.1.4, 3.15.10.6, 3.15.19.8, 3.1.5, 3.15.20.5, 3.15.18.10, 3.15.18.7
California Energy Commission; CA Department of Fish and Game	SEDDsupp20147	3.8.2
California Native American Heritage Commission	SolarS_001	3.6.2, 3.15.19.6
California Native Plant Society	SEDD11887	3.18.3, 3.1.5, 3.15.10.6, 3.1.6, 3.1.7, 3.15.10.1, 3.15.10.2, 3.15.10.3, 3.15.10.5, 3.15.10.8, 3.2.3, 3.17.5, 3.14.1, 3.6.3.3, 3.3.1, 3.15.13.1, 3.15.13.4
California Native Plant Society	SEDDsupp20169	3.16.2, 3.17.5, 3.1.4, 3.15.10.6, 3.1.7, 3.15.10.2, 3.6.1, 3.14.1, 3.7.23, 3.3.2, 3.11.2, 3.15.24.2
California Native Plant Society	Solar_SA_009	3.1.5, 3.14.1, 3.1.6, 3.6.3.3, 14.7
California Public Utilities Commission	SEDDsupp20079	3.6.1
California Public Utilities Commission	SEDD11722	3.18.3, 3.8.2, 3.8.1, 3.8.4, 3.14.3, 3.14.1, 3.5.1, 3.1.5, 3.1.7, 3.15.24.12, 3.1.4, 3.1.6, 3.15.13.4, 3.15.15.10
California Rifle and Pistol Association	SEDD11769	3.2.3, 3.17.5, 3.15.5.1
California State Historic Preservation Office	Solar_SA_014	3.6.2
California State Lands Commission	SolarS_044	3.8.2, 3.6.3.3, 3.6.1
California State Parks	SEDD11858	3.2.2.1
California State Parks	SEDD11854	3.2.2.1, 3.15.13.4, 3.15.13.9, 3.15.11.8, 3.15.18.7, 3.1.4, 3.15.13.3
California Trail User Coalition	SEDD10157	3.3.2
California Unions for Reliable Energy (CURE)	SEDDsupp20159	3.6.1, 3.5.4, 3.6.4, 3.7.23, 3.6.5
Californians for Renewable Energy	Solar_SA_007	3.6.2, 3.11.2, 3.11.3, 3.18.3, 3.14.5, 3.18.3, 3.6.4, 3.17.1
Californians for Western Wilderness	SEDDsupp20165	3.14.1, 3.2.2.4, 3.17.2, 3.17.6
Cameron, Michael	Solar_LV_007	3.2.3, 3.18.3, 3.15.13.4, 3.14.2, 3.14.1, 3.3.2, 3.15.9.1, 3.15.9.5
Camhi, Gail	SEDD10992	3.2.5
Campbell, Benita	SEDD10445	3.2.5
Canaly, Chris	Solar_AL_015	3.18.3, 3.15.1.3, 3.14.3, 3.5.1
Canaly, Chris	SolarS_AL_15	3.7.2.1, 3.5.4
Cannella, Eve	SEDD10102	3.15.18.3
Cannon Solar and Wind LLC	SEDDsupp20006	3.16.1
Capozzelli, J.	Solar_047	3.14.1, 3.14.2, 3.8, 3.3.1
Cappelletti, Regina	SEDD10548	3.2.5
Carey, Barbara	SEDD11310	3.16.1
Carlton, Alan	SEDDsupp20103	3.14.1, 3.2.2, 3.2.2.1, 3.1.6, 3.7.12, 3.7.3

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Carper, Janet	SEDD10768	3.14.1, 3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5, 3.18.3
Carr, Gaile	SEDD10566	3.18.3
Carroll, Mark	SEDD11746	3.16.1
Carroll, Ray	SolarS_026	3.7.14, 3.8, 3.6.3.2, 3.14.1, 3.6.1
Carter, Gary	SEDD10545	3.16.1
Carter, Nancy	SEDD10626	3.18.3
Carty, Claudia	SEDD10905	3.16.1, 3.2.5
Case, Jim	Solar_CC_007	3.5.6, 3.17.4, 3.15.13.3, 3.18.3, 3.15.15.1
Casey, Carol	SEDD10277	3.2.5
Casey, Joyce	SEDD10378	3.2.5
Cassens, Susan	SEDD10843	3.2.3
Caswell, Jack	SEDDsupp20055	3.3.2
Cathcart, Melissa	SEDD10412	3.2.3
Cell, Kristin	SEDDsupp11908	3.16.1, 3.17.1
Celtic Energy Corporation	SEDDsupp20107	3.8.1
Center for Biological Diversity	SEDD11818	3.16.1, 3.6.3.3, 3.11.2, 3.11.3, 3.3.2, 3.6.4, 3.15.13.4, 3.1, 3.2.2.3, 3.15.13.3, 3.15.11.6, 3.2.2, 3.15.14.8, 3.15.9.1, 3.15.9.2, 3.15.24.6, 3.15.24.2, 3.2.1, 3.14.2, 3.14.1, 3.14.7, 3.17.5, 3.8, 3.1.4, 3.1.5, 3.1.6, 3.1.7
Center for Biological Diversity	SEDDsupp20126	3.6.1, 3.15.9.1, 3.15.9.4, 3.15.9.7, 3.15.13.3, 3.15.13.5, 3.1.5, 3.1.6, 3.2.2.1, 3.1.7, 3.15.10.3, 3.15.10.8, 3.8.2, 3.18.3, 3.1, 3.14.1, 3.15.14.8, 3.15.9.2, 3.15.5.1, 3.15.24.2, 3.1.13, 3.1.16, 3.1.17, 3.5.4, 3.1.18, 3.15.13.9, 3.2.2.3, 3.7.22, 3.15.11.10, 3.8, 3.11.2, 3.15.13.1
Center for Biological Diversity	SEDDsupp20127	3.18.3
Center for Biological Diversity	SEDDsupp20128	3.18.3
Center for Biological Diversity	SolarS_LV_04	3.6.1, 3.2.2, 3.14.1, 3.11.2, 3.11.3, 3.11.1, 3.17.1, 3.17.2, 3.17.5
Center for Energy Efficiency and Renewable Technologies	Solar_SA_012	3.14.1, 3.6.1, 3.6.3.3, 3.5.1, 3.8, 3.8.5, 3.17.4, 3.5.6
Center of Energy Efficiency and Renewable Technologies	SolarS_PD_12	3.7.11, 3.14.1, 3.18.3, 3.15.13.3, 3.15.13.4, 3.8.2, 3.8.5
Chaffin, Kurt	SEDD10100	3.16.2, 3.7.2, 3.1, 3.14.2
Chamberlain, Richard	SEDD10611	3.2.5
Chambre, Linda	SEDD11377	3.2.3
Chandler, Lowell	SEDD10008	3.2.2.3
Charney, Danielle	SEDD10244	3.16.1
Chemehuevi Indian Tribe	Solar_BA_004	3.15.19.9, 3.15.9.1, 3.15.9.2, 3.15.24.6, 3.6.3.1, 3.15.19.10, 3.15.24.4, 3.15.19.2, 3.15.19.3, 3.16.1
Chepuru, Melissa	SEDD11247	3.18.2
Chess, Katie	SEDD10756	3.17.1
Chinn, Douglas	Solar_IW_026	3.16.1, 3.17.6, 3.16.2

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Chipman, Eric	SEDD10663	3.16.1
Chisari, Andrea	SEDD10269	3.2.5
Choate, Viviann	SEDD10646	3.2.5
Church, Michele	SEDD10840	3.18.3
Cicetti, Melissa	SEDD10179	3.16.1
Citizens for the Chuckwalla Valley	SEDD11354	3.6.1, 3.9, 3.18.3, 3.15.21.2, 3.14.3, 3.6.4, 3.17.1, 3.14.7, 3.17.5, 3.15.24.2, 3.16.3, 3.15.18.3
Citizens for the Chuckwalla Valley	Solar_IW_001	3.1.7, 3.15.21.1, 3.15.21.2, 3.6.4, 3.17.1
Citizens for the Chuckwalla Valley	Solar_IW_002	3.18.1, 3.15.14.1, 3.18.3, 3.17.1, 3.12, 3.16.2
Clark County	SEDD11738	3.16.1, 3.2.1
Clark County	SEDDsupp20146	3.6.1, 3.14.1
Clark County Board of Commissioners	Solar_020	3.14.1, 3.8, 3.17.5, 3.15.9.1, 3.15.13.4, 3.15.24.8
Clark County Board of Commissioners	SolarS_007	3.6.1, 3.2.2, 3.14.2, 3.18.3, 3.8, 3.6.3.2
Clark County Desert Conservation Program	SEDD11855	3.15.13.4, 3.19, 3.1.14, 3.15.10.1, 3.15.11.10, 3.7.22, 3.15.13.8, 3.15.10.8, 3.15.24.15
Clark County Desert Conservation Program	SEDDsupp20031	3.7.22, 3.15.13.4, 3.19, 3.1.14
Clark County Nevada Department of Aviation	SEDD11541	3.3.1, 3.15.6.1, 3.7.12, 3.11.3
Clark County Nevada Department. of Aviation	SEDDsupp20075	3.7.3, 3.7.22, 3.15.6.1
Clark, Douglas	SEDDsupp20137	3.7.9, 3.17.4, 3.17.5, 3.7.19, 3.15.15.1
Clark, Lawrence	SEDD10737	3.16.1
Clark, Matt	Solar_AL_012	3.14.1, 3.14.2, 3.17.5, 3.2.2.1, 3.15.13.3
Clements, Rhonda	SEDD11162	3.16.1
Cloner, Matthew	SEDD10930	3.2.5
Close, Jeff	SEDD10467	3.2.5
Coalition for Nevada's Wildlife	Solar_GF_002	3.6.3.2, 3.6.2, 3.6.3.3
Coalition for Sonoran Desert Protection	SEDD11846	3.14.1, 3.2.2.1, 3.7.16, 3.14.2, 3.6.3.3, 3.2.2, 3.2.2.3, 3.6.3.2
Cochise County Board of Supervisors	SolarS_009	3.16.1, 3.14.2, 3.6.1, 3.14.1, 3.18.3, 3.7.2, 3.17.4, 3.6.3.2
Coffey, John	Solar_BA_007	3.15.13.4, 3.15.13.5, 3.2.1, 3.17.5, 3.18.3, 3.6.2
Cogan, Richard	SEDD10945	3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5
Cohen, Harriet	SEDD10180	3.14.1, 3.2.5
Coleman, Edith	SEDD10228	3.2.5
Coles, Roswell	SEDD10791	3.2.3
Collins, David	SEDD10991	3.2.5
Collins, Russell	SEDD10979	3.2.5
Collinsworth, Van	SEDD10647	3.14.7
Colorado Division of Water Resources	SolarS_AL_10	3.15.9.2

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Colorado Division of Wildlife	Solar_019	3.6.4, 3.15.13.4, 3.1.11, 3.15.11.8, 3.15.13.9, 14.7, 3.15.9.1, 3.15.9.2, 3.15.11.4, 3.15.9.6, 3.15.11.10, 3.15.5.2, 3.15.11.12, 3.15.11.9, 3.15.16.1, 3.1.9
Colorado River Indian Tribe	Solar_BA_011	3.15.18.1, 3.6.2, 3.15.19.10, 3.15.19.3, 3.7.5, 3.15.13.8, 3.7.2
Colorado River Indian Tribes	SEDDsupp20139	3.2.2, 3.8.2, 3.6.2, 3.6.1, 3.15.18.9, 3.7.15, 3.14.1, 3.15.18.10
Colschen, Wendy	SEDD11030	3.1.7, 3.1.5, 3.1.12, 3.1.21
Comfort, David	SEDD10858	3.2.5
Committee on 245 Million Acres	SEDD11813	3.13, 3.6.1, 3.7.13, 3.16.3, 3.5.6, 3.1, 3.6.4, 3.7.15
Conaway, Alvin	SEDD10073	3.18.3
Conejos County	SEDD11834	3.7.2, 3.7.13, 3.17.1
Conejos County Clean Water, Inc.	SEDD11518	3.7.16, 3.7.2.1, 3.15.20.2, 3.17.1, 3.17.4, 3.17.5, 3.18.3, 3.2.3, 3.15.7.4, 3.15.9.6, 3.15.10.1, 3.6.1, 3.15.14.11, 3.15.13.4, 3.15.11.10, 3.15.18.1, 3.15.15.8, 3.15.23.3, 3.6.3.2, 3.7.2, 3.5.1, 3.14.8, 3.15.20.1, 3.15.20.5
Conejos County Clean Water, Inc.	SEDDsupp20120	3.16.1, 3.6.4, 3.17.4, 3.5.4, 3.18.1, 3.1.8, 3.1.11, 3.7.2.1, 3.14.8, 3.18.3, 3.2.3, 3.8.1, 3.17.1, 3.15.21.1, 3.15.21.2, 3.6.1, 3.15.20.1, 3.15.20.2, 3.7.2, 3.15.20.4, 3.15.20.7, 3.15.20.8, 3.15.20.5, 3.17.5, 3.6.3.2, 3.9, 3.15.7.1, 3.15.9.1, 3.15.9.2, 3.15.9.5, 3.15.9.4, 3.15.9.6, 3.15.10.4, 3.15.14.5, 3.15.14.11, 3.15.23.1, 3.15.14.9, 3.15.11.4, 3.15.11.2, 3.15.11.11, 3.15.18.5, 3.15.18.10, 3.15.18.4, 3.15.3.3, 3.2.2.2, 3.15.15.8, 3.15.23.3, 3.15.21.3, 3.15.21.4, 3.14.7
Conejos County Clean Water, Inc.	SolarS_AL_12	3.6.1, 3.7.2, 3.9, 3.15.18.5, 3.15.23.3
Conejos County Commissioners	SEDDsupp20047	3.2.4, 3.1.8, 3.1.11, 3.7.2, 3.5.1, 3.2.3, 3.15.9.3
Congdon, Ann	SEDDsupp20102	3.6.1, 3.14.1, 3.15.20.4
Conklin, Lu	SEDD10778	3.16.1
Conroy, Faith	SEDD10747	3.2.5, 3.1.5, 3.1.7, 3.1.12, 3.1.21
Cook, Paul; California State Assembly	SEDDsupp20066	3.6.1, 3.2.5, 3.14.1, 3.15.20.4
Cook, Steven	SEDD11474	3.2.3
Coon, Johnney	SEDDsupp20117	3.16.2
Cooper, Katherine	SEDD10664	3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5
Cooper, Kathleen	SEDD11546	3.17.1
Cordes, John	SEDD10006	3.17.1
Corriere, Jim	SEDD11179	3.2.5
Costa, Demelza	SEDD11335	3.2.5
Costa, Donna	SEDD11299	3.2.5
Couch, Sandra	SEDD11565	3.2.3
Councilman, Dave	SEDD11042	3.2.3

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
County of San Bernardino	SEDD11326	3.9, 3.6.4, 3.1.6, 3.15.13.4, 3.3.2, 3.15.22.2, 3.6.3.2, 3.14.8, 3.15.9.1, 3.15.9.4, 3.3.1, 3.15.9.6, 3.15.24.6
Coy, Jessica	SEDD11714	3.18.3, 3.17.1, 3.1.7
Crabill, Phillip	SEDD10417	3.2.3
Craig, Edward	SEDD11163	3.2.3
Craig, Julianne	SEDD10868	3.2.3
Crandall, Lynn	SEDD10989	3.14.1, 3.1.5, 3.1.7, 3.1.12, 3.1.21, 3.2.5
Crane, Laura	Solar_BA_001	3.16.1, 3.15.9.1, 3.15.9.6, 3.2.3, 3.14.2, 3.14.3, 3.14.1, 3.8, 3.17.5, 3.1.5, 3.1.6, 3.17.4
Cravitz, Sam	Solar_CC_008	3.2.1, 3.15.3.5
Creighton, Alexander	SEDD11411	3.18.3
Cresic, Kimberly	SEDD11195	3.2.3
Crespi, Sam	SEDD10372	3.2.5
Creswell, Richard	SEDD10951	3.2.3
Crickmore, Ingrid	SEDD11373	3.16.2, 3.1.5, 3.12, 3.17.5, 3.17.6
Crickmore, Ingrid	Solar_IW_014	3.16.2, 3.14.7, 3.5.1, 3.15.20.10, 3.17.6
Crites, Dave	SolarS_AL_19	3.7.2
Crosby, Ann	Solar_023	3.14.2, 3.15.3.4, 3.16.2, 3.15.9.1, 3.6.4, 3.17.1
Cross, Elizabeth	SEDDsupp20142	3.16.2
Crossley, Jean	SEDD11532	3.18.3
Crow Canyon Archaeological Center	Solar_036	3.15.18.1
Crum, William	SEDD10113	3.14.2, 3.16.1
Crum, William	SEDD11695	3.18.3
Cruz-Ellis, Cherylta	SEDD10971	3.2.3
Cultural Resources Preservation Coalition	SEDD11810	3.14.1, 3.2.2.1, 3.1.13, 3.15.18.2, 3.1.16, 3.15.18.10, 3.15.17.1, 3.15.18.7, 3.5.1, 3.15.18.6, 3.7.14, 3.2.2, 3.1.14, 3.1.1, 3.1.7, 3.1.9, 3.3.1, 3.15.18.4, 3.1.19, 3.1.21, 3.8, 3.14.2, 3.6.4, 3.15.24.1, 3.15.18.8, 3.2.2.2, 3.15.15.4, 3.15.15.1, 3.15.18.3, 3.3.2, 3.6.2
Cunico, Juliette	SEDD11478	3.1.21, 3.2.5
Cunningham, Laura	SolarS_LV_14	3.1.18, 3.15.11.13
Cunningham, Samuel	SEDD11894	3.15.13.4, 3.15.10.6, 3.15.23.3, 3.2.4, 3.1.7, 3.15.20.10, 3.5.1, 3.15.23.5
Cuprzinski, Michael	SEDD11503	3.18.3
Cuprzinski, Michael	SEDD11504	3.18.3
Dahn, Rick	SEDD11238	3.16.1
Dai, Jianshen	SEDD11601	3.2.3, 3.15.20.1
Dajany, Adam	SEDD10020	3.16.1
D'Ambrosio, Lisa	SEDD10375	3.16.1
Dangol, Krishna	SEDD11485	3.16.1
Danner, Sarah	SEDD11686	3.2.5
Dastrup, Melinda	SEDD11268	3.18.2
Davies-Sigmund, Steven	SEDD10622	3.2.5
Davis, Clarice	SEDD10115	3.15.9.1, 3.7.2, 3.2.3, 3.18.3

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Davis, George	SEDD10845	3.18.3
Davis, Lynn	Solar_LV_017	3.14.1, 3.15.15.1, 3.2.5
Dawdy, Ken	SEDD11353	3.2.5
Dawson, Julie	SEDD10787	3.2.5
Deal, Jeff	SEDD10258	3.16.1
Dean, Derry	SEDD10917	3.2.5
Decker, Ronald	SEDD10109	3.16.2
Dedenroth, Brian	SEDD11029	3.17.1, 3.17.6, 3.2.3, 3.17.5
Defarge, Juliet	SEDD10786	3.17.1
Defenders of Wildlife	Solar_LC_002	3.16.1, 3.14.2, 3.2.2.1, 3.14.1, 3.17.5, 3.8.3, 3.8, 3.15.13.3, 3.2.3, 3.1.5, 3.1.6, 3.1.2, 3.2.2.4, 3.15.11.3, 3.1.21, 3.1.19
Defenders of Wildlife	Solar_PH_006	3.14.2, 3.8, 3.17.5, 3.8.3, 3.6.4, 3.18.3, 3.16.1, 3.2.2, 3.7.22, 3.2.2.1, 3.14.3, 3.14.1
Defenders of Wildlife	SolarS_PH_02	3.6.1, 3.15.13.1, 3.14.1, 3.17.5, 3.8.3, 3.1.1, 3.2.2.1, 3.1.3, 3.2.2.4, 3.1.2, 3.1.21
Defenders of Wildlife	SolarS_PD_01	3.6.1, 3.15.13.1, 3.1.5, 3.2.2.3, 3.1.6, 3.1.7, 3.2.3, 3.17.5, 3.7.18
Defenders of Wildlife	solar_SA_002	3.2.3, 3.6.3.3, 3.14.3, 3.14.2, 3.14.1, 3.1.5, 3.1.6, 3.7.14, 3.6.4, 3.8, 3.8.5
Defenders of Wildlife	Solar_IW_008	3.16.1, 3.14.2, 3.14.1, 3.1.5, 3.1.6, 3.1.7, 3.2.1, 3.15.13.4, 3.8, 3.8.5
Defenders of Wildlife	Solar_DC_006	3.6.1, 3.14.2, 3.8, 3.15.11.10, 3.7.5, 3.7.1, 3.18.3
Defenders of Wildlife	SEDDsupp20157	3.6.1, 3.6.3.2, 3.15.11.10, 3.15.11.9, 3.3.2, 3.15.13.4, 3.3.1, 3.7.5, 3.15.11.5, 3.7.1, 3.15.13.7, 3.7.22, 3.2.2.3, 3.17.5, 3.15.13.1, 3.15.13.5
DeHaven, Maxwell	SEDD10133	3.14.2
Delaney, Dan	SEDD10230	3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5
Deller, Jeanne	SEDD11454	3.16.1
Delph, Barbara	SEDD10264	3.2.3
Denison, Mr and Mrs James	SEDD10903	3.16.1, 3.17.1, 3.18.2
Denniston, Glenda	SEDD10305	3.2.5
Department of Defense	SolarS_010	3.6.3.1, 3.3.1, 3.2.2.1, 3.1.15, 3.15.6.3, 3.19, 3.2.2, 3.1.16, 3.15.6.4, 3.19, 3.1.14, 3.7.23, 3.15.10.3, 3.1.18, 3.1.7, 3.14.1, 3.15.6.1, 3.1.13
DePould-Newmark, Carole	SEDD10570	3.2.5, 3.1.5, 3.1.7
Desert Center Area Chamber of Commerce	SEDD10034	3.1.7, 3.17.1
Desert Center Area Chamber of Commerce	SEDDsupp20067	3.1.7, 3.7.2, 3.6.3.2
Desert Center Area Chamber of Commerce	Solar_IW_023	3.15.20.4, 3.15.20.6, 3.15.20.7, 3.17.1, 3.2.3
Desert Protection Society	SEDDsupp20077	3.15.21.2, 3.7.22, 3.15.11.9, 3.2.5, 3.17.1, 3.7.13, 3.9, 3.6.4, 3.14.7, 3.17.5, 3.15.9.4, 3.15.23.1, 3.15.14.12, 3.15.13.4, 3.7.1, 3.18.3, 3.16.2, 3.15.18.9

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Desert Survivors	SEDD11808	3.6.1, 3.15.24.5, 3.6.4, 3.17.1, 3.6.3.1, 3.14.8, 3.7.7, 3.6.5, 3.16.2, 3.16.3, 3.9, 3.15.10.5, 3.7.1
DeSpain, Juell	SEDD11149	3.2.5
DeVoe, Zachary	SEDD10002	3.17.1
Dewitt, Rebecca	Solar_PH_009	3.16.1, 3.14.1
Diaz, Jonathan	SEDD10919	3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5
Dickinson, Sarah	SEDD11691	3.2.5, 3.17.2, 3.1.5, 3.1.7, 3.1.12, 3.1.21, 3.17.5
Diederichs, Barbara	SEDD11095	3.17.1
Dieterich, James	SEDD10104	3.14.2
Dion, Patricia	SEDD10327	3.16.1
Doak, Hartson	SEDD10640	3.2.3
Dobson, Carol	SEDD10461	3.16.1
Dominguez, Anthony	SEDD11839	3.18.3, 3.6.1
Donnelly-Shores, Patrick	SEDD11552	3.17.1, 3.14.5, 3.9, 3.2.1, 3.14.1, 3.17.5, 3.8.3, 3.18.2, 3.1.5, 3.1.6, 3.1.7
Donnelly-Shores, Patrick	SEDDsupp20110	3.14.2
Donnelly-Shores, Patrick	Solar_SA_003	3.14.1, 3.14.2, 3.2.2.2, 3.7.21, 3.1.5, 3.1.6, 3.1.7
Donohue, Paul	Solar_CC_006	3.2.1, 3.1.15, 3.1, 3.8.1, 3.6.3.1
Donovan, Cori	SEDD10317	3.16.3
Donovan, Stephan	SEDD10698	3.2.5
Dorer, Jeffery	SEDD11383	3.2.3
Doss, Heide	SEDD10200	3.17.1
Doutre, Emily	SEDD10167	3.14.1, 3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5
Downing, Rosamund	SEDD10231	3.2.5
Dranklin, Doug	SEDD11507	3.17.1
Draus, Sandy	SEDD11118	3.2.5
Duckwater Shoshone Tribe	Solar_LV_003	3.15.18.1, 3.15.19.2
Duckwater Shoshone Tribe	SEDD11892	3.15.19.2, 3.15.24.17, 3.15.21.2, 3.15.19.9, 3.15.7.2, 3.15.9.1, 3.15.9.2, 3.15.9.5, 3.15.11.9, 3.15.14.5, 3.15.18.6, 3.15.19.7
Duda, Tim	SEDD10392	3.16.1
Dumont, Wayne	SEDD10735	3.2.5
Dunton, William	SEDD10322	3.14.1, 3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5, 3.2.2
Dupree, Aleta	Solar_LV_013	3.16.1, 3.14.1, 3.15.9.1, 3.17.1, 3.18.3, 3.11.1
Dupree, Aleta	SolarS_LV_12	3.16.1, 3.18.3, 3.2.3
Dwyer, Timothy and Jan	SEDD11211	3.2.5
Early, Gayle	SEDD11569	3.18.3, 3.15.15.1
Easter, Bill	SEDD11291	3.2.3
Ebel-Bailey, Nichole	SEDD11665	3.2.3
Ebersold, Deborah	SEDD11007	3.14.1
Eddy, Shannon	Solar_SA_005	3.14.2, 3.8, 3.8.5, 3.18.3, 3.14.1, 3.5.1, 3.6.3.3
Edelman, William	SEDD10853	3.16.1, 3.2.5

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Edwards, Leslie	SEDD10805	3.14.1, 3.17.1, 3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5
Ee, Jeff	SEDDsupp20038	3.18.3, 3.15.24.2, 3.17.1, 3.17.6, 3.17.4, 3.17.5, 3.17.2
Eisenberg, Roberta	SEDD10172	3.1.7, 3.1.5, 3.1.12, 3.1.21
Elias, Richard	SolarS_034	3.6.1, 3.2.2, 3.14.2, 3.14.1, 3.7.3, 3.2.2.1, 3.8, 3.6.3.2
Elizondo, Maricela	SEDD11285	3.18.3
Elliot, Geoff	Solar_AL_010	3.6.4, 3.2.1, 3.15.24.4, 3.15.24.13, 3.14.6
Elliott, Carole	SEDD11294	3.18.3
Ellis, Bob	Solar_IW_015	3.16.2, 3.7.18, 3.18.3
Ellison, Jane	SEDD10864	3.2.5
Engel, Christine	SEDD10759	3.17.1
Engler, Chris	SEDD11500	3.16.1
Entley, Hilary	SEDD11675	3.2.5
Environmental Defense Fund	SEDDsupp20162	3.3.2
enXco	SEDD11835	3.9, 3.1.6, 3.15.11.10, 3.15.9.3, 3.15.9.6, 3.15.13.4, 3.7.3, 3.1.14, 3.11.2, 3.5.6, 3.6.3.3, 3.14.2, 3.8.1, 3.5.1, 3.2.6, 3.7.15, 3.3.2, 3.3.1, 3.15.3.4, 3.15.5.3, 3.15.6.1, 3.15.7.6, 3.19, 3.15.13.2, 3.15.10.1, 3.7.5, 3.15.15.5, 3.15.15.2, 3.15.15.3, 3.15.20.2, 3.15.20.9, 3.7.14, 3.15.15.10, 3.15.9.7
enXco	SEDDsupp20141	3.14.2, 3.14.1, 3.7.22, 3.8, 3.11.2, 3.11.3, 3.15.15.10, 3.1.7, 3.2.2.4, 3.2.2.1, 3.1.14
enXco	Solar_PH_004	3.2.2, 3.1.7, 3.15.15.1, 3.2.1, 3.15.9.3, 3.15.9.6, 3.15.11.10, 3.5.6
Epple, Melissa	SEDD11484	3.16.1
Epstein, Kelly	SEDD10671	3.2.5
Erwin, Jeffrey	SEDD10893	3.2.5
Erwin, Patricia	SEDD11410	3.16.1
Escalante, Linda	Solar_BA_002	3.14.1, 3.14.2, 3.1.5, 3.1.6, 3.8.4, 3.8.5
Escobedo, Ernie	SEDD10141	3.2.3, 3.17.1, 3.17.6
Escobedo, Luis	SEDD10140	3.2.3, 3.17.1, 3.17.6
Escobedo, Norma	SEDD10138	3.2.3, 3.17.1, 3.17.6
Escobedo, Siba	SEDD10139	3.2.3, 3.17.1, 3.17.6
Esmeralda County Commissioners	Solar_GF_006	3.1.17, 3.15.15.9
Esmeralda County Land Use Advisory Committee	SEDD10011	3.1.17, 3.1.18, 3.6.3.1
Etherton, S.	SEDD10482	3.2.5, 3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.14.1
Evans, A.S.	SEDD10629	3.2.5
Ewing, Parke	SEDDsupp20018	3.16.2, 3.17.1, 3.15.20.6
Ewing, Parke	SEDDsupp20019	3.16.2, 3.17.1
Famularo, Ralph	SEDD11497	3.16.1
Farneth, Sara	SEDD10733	3.18.1, 3.16.1
Faulkner, Roger	SEDD10019	3.5.5

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Faust, Malcolm and Carol	SEDD10514	3.2.5
Fay, Beth	SEDD11135	3.2.5
Fazzari, Angela	SEDD11003	3.2.5, 3.14.1, 3.1.7, 3.1.5, 3.1.12, 3.1.21
Feinstein, Joe	SEDD11559	3.16.1
Feld, Dollie	SEDD11677	3.2.2.3
Feldman, Jane	Solar_LV_002	3.16.1, 3.8.4, 3.8.5, 3.7.23, 3.3.2, 3.2.1, 3.17.5, 3.12, 3.14.2, 3.14.1, 3.8, 3.6.3.3, 3.1.5, 3.1.6
Ferguson, Lori	SEDD11198	3.18.3
Ferraro, Mary	SEDD11133	3.17.1
Field, Adrian	SEDDsupp20158	3.15.20.6, 3.17.1, 3.15.21.4, 3.15.20.1, 3.17.5, 3.2.2, 3.15.13.6, 3.15.10.4, 3.15.10.5, 3.15.18.5, 3.6.2, 3.2.3, 3.15.23.3, 3.15.22.6, 3.18.3, 3.15.24.12, 3.7.2
Figueroa, Alfred	Solar_IW_016	3.15.18.1
Figueroa, Julie	SEDD10294	3.16.1, 3.14.1, 3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5
Figueroa, Patricia	Solar_IW_017	3.2.3, 3.15.18.1
Filipelli, Deborah	Solar_007	3.9, 3.15.14.3, 3.7.7, 3.17.1, 3.6.4, 3.17.2, 3.17.6, 3.14.8, 3.14.7, 3.16.2, 3.16.3, 3.18.2, 3.15.24.9, 3.3.1, 3.15.10.5, 3.5.1
Finholt, Tom	SEDD10854	3.16.1
Firmage, Ed	Solar_SL_004	3.14.1, 3.1.24, 3.2.2.1, 3.2.5, 3.17.1
First Solar, Inc.	SEDD11787	3.1, 3.11.2, 3.11.3, 3.5.1, 3.2.2
Fish, Kay	SEDD11192	3.2.5
Fite, Gregory	SEDD10333	3.2.5
Fitzgerral, Michael	SEDD10151	3.15.18.6, 3.15.19.6
Fitzpatrick, Barbara	SEDD10268	3.17.5, 3.17.1
Fleck, Almut	SEDDsupp20186	3.6.1, 3.17.1, 3.14.7
Fleck, Almut	SolarS_PD_10	3.15.23.1, 3.14.2
Fleet, Ron Protectors for the Ivanpah Valley	Solar_IW_021	3.18.3, 3.18.3
Fleming, Doug	SEDD10329	3.18.1
Flick, Wayne	SEDD10912	3.2.3
Flodine, Eric	SEDD10040	3.16.2
Floyd, Kim	SEDD10516	3.2.5, 3.1.7, 3.1.5, 3.1.12, 3.1.21
Fogleman, Anne	SEDD10653	3.2.5
Fogli, Susi	SEDD11530	3.16.1
Foley, Gerry and Genny	SEDD10660	3.16.1
Ford, Janelle	SEDD10659	3.2.3
Forest, Max	SEDD11681	3.18.3, 3.18.2, 3.16.1, 3.17.2, 3.18.3
Forman, Donald	SEDDsupp20118	3.14.1, 3.7.12, 3.7.3, 3.2.2
Forno, Vincent	SEDD11499	3.18.2
Foster, Dorothy	SEDD10388	3.2.5
Foster, Harold	SEDDsupp20008	3.16.1
Foster, Stephanie	SEDD11641	3.14.1, 3.2.5
Fourroux, Henri Andre III	SEDD10679	3.2.5, 3.1.5, 3.1.7, 3.1.12
Fox, Robin	SEDD11400	3.16.1
Franco, Alejandra	SEDD11728	3.16.1

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Franco, Monica	SEDD11741	3.16.1
Frank, Lee	SEDD10654	3.17.1
Franklin, James	SEDD10779	3.18.1
Franklin, Naomi	SEDD10836	3.16.1, 3.2.3, 3.17.5
Freedland, Nancy	SEDD11487	3.18.3
Freeman, Kyri	SEDD10771	3.2.5, 3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.3
Freese, Lisanne	SEDD11300	3.2.3
Frey, Adrienne	SEDD11642	3.16.1
Friends of Ironwood Forest	SEDD11777	3.2.2.4, 3.15.10.8, 3.15.13.3, 3.15.13.4, 3.15.13.6, 3.15.11.11, 3.6.3.2, 3.6.3.3, 3.2.2.1
Friends of Old Growth Ironwoods	SEDD10158	3.15.13.4, 3.15.13.5, 3.15.9.1, 3.15.9.4, 3.17.3, 3.15.14.1, 3.15.10.5, 3.17.1, 3.17.4, 3.17.5, 3.2.3
Friends of Old Growth Ironwoods	SEDD10159	3.17.1, 3.15.23.3, 3.18.3, 3.1.5, 3.15.13.4, 3.15.13.8, 3.15.17.1, 3.15.10.6, 3.2.2, 3.15.2.1, 3.15.7.1, 3.18.2, 3.15.10.5, 3.5.1, 3.6.4, 3.15.9.1, 3.15.1.3, 3.16.3, 3.1, 3.14.5, 3.2.3, 3.7.2, 3.15.22.2, 3.15.23.4, 3.18.1
Friends of Old Growth Ironwoods	SEDD11826	3.12, 3.15.20.1, 3.18.1, 3.7.9, 3.7.13, 3.15.13.4, 3.18.2, 3.14.5
Friends of Old Growth Ironwoods	SEDDsupp20114	3.16.2
Friends of Saddle Mountain	SEDD10685	3.16.2
Friends of Saddle Mountain	Solar_043	3.16.2, 3.2.3, 3.17.4
Frink, Timothy	SEDD10913	3.16.1, 3.2.3
Fritzler, Deb	SEDD10455	3.16.1, 3.2.5
Froelich, Chris	Solar_EC_002	3.7.2
Full Circle Heritage Services	SEDD11851	3.6.2
Fuller, Jared	SEDD10023	3.1.16
Fuller, Jared	SEDD10070	3.17.5, 3.2.1, 3.2.2.3, 3.15.13.3, 3.15.13.4, 3.15.11.6, 3.2.2, 3.11.2, 3.11.3, 3.15.14.1, 3.8.3
Fuller, Jared	SEDD10103	3.17.1, 3.17.5, 3.16.2
Fuller, Jared	SEDD10156	3.2.3, 3.15.13.4, 3.15.10.5
Fuller, Jared	SEDDsupp20028	3.2.3, 3.1.7, 3.1.15, 3.1.18, 3.1.19
Fuller, Jared	SEDDsupp20034	3.2.3, 3.11.2, 3.7.3, 3.6.1, 3.2.2.3, 3.7.22
Fuller, Jared	SEDDsupp20085	3.2.2.3, 3.7.22
Fuller, Shauna	SEDD11441	3.2.5
Fullerton, Richard	SEDD10384	3.2.5
Furnish, Shearle	SEDD10962	3.2.3
Fusari, Margaret	SEDD11849	3.15.13.4, 3.3.1, 3.15.13.5, 3.7.3
Gabbard, Bruce	SEDD11657	3.1.7
Gallagher, Leslie	SEDD11756	3.2.5
Gallagher, Sarah	SEDD10920	3.18.3
Gallagher, Sean	SEDDsupp20148	3.11.2
Gallo, Patricia	SEDD11055	3.2.5
Gandress, D	SolarS_015	3.2.3

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Garabedian, Michael	SEDDsupp20184	3.2.3, 3.15.10.3, 3.15.10.4, 3.6.4, 3.16.3, 3.6.1
Garabedian, Michael	Solar_SA_006	3.16.2, 3.18.2, 3.1.15, 3.16.3, 3.14.2, 3.7.13, 3.5.6
Garcia, Carlos	SEDD11870	3.1.8, 3.15.3.5, 3.15.11.9, 3.15.9.1, 3.15.9.2, 3.7.2.1, 3.17.4, 3.7.3, 3.6.1
Garcia, Carlos	SEDDsupp20170	3.15.20.8, 3.15.18.3, 3.15.18.5, 3.15.13.4, 3.15.13.9, 3.15.11.11, 3.1.8, 3.15.7.8, 3.7.2.1, 3.17.4, 3.16.2
Garcia-Barrio, Constance	SEDD11011	3.16.1
Garth, Ann	SEDD11754	3.16.1
Gasperoni, John, Ph.D.	SEDD10612	3.2.5
Gaudet, Robert	Solar_LV_011	3.15.11.1, 3.15.9.1, 3.15.9.4
Gault, Carol	SEDD11350	3.2.5
Gehlert, Edgar	SEDD10862	3.17.1
Gehman, Bethanie	SEDD11225	3.2.5
George, Marvin	SEDD10271	3.1.14, 3.1.7, 3.1.5, 3.1.12, 3.1.21
Gerhard, Delia	SEDD10674	3.2.5
Gibson, Andi	SEDD10493	3.16.1
Gibson, James	SEDD11688	3.2.5
Gibson, Katherine	SEDD10464	3.14.1, 3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5, 3.17.4
Giebel, Robert	SEDD10692	3.2.5
Gila River Indian Community Tribal Historic Preservation Office	Solar_038	3.6.2, 3.15.19.5
Gilbert, Valerie	SEDD10803	3.2.5
Gilbert, Wyn	SEDD10590	3.2.3
Gilchrist, Elizabeth	SEDD10411	3.16.1, 3.2.5, 3.1.7, 3.1.12, 3.1.21
Giles, Al	SEDD11582	3.2.5
Gillespie, Sharon	SEDD10454	3.2.5
Gilman, Monica	SEDD11598	3.2.3
Gindele, Abigail	SEDD10683	3.17.1, 3.18.2
Glasser, Mark and Susan	SEDD10416	3.16.1
Gleason, Barbara	SEDD11349	3.2.3
Glenn Stewart, Ph.D.	SEDD10846	3.14.1, 3.1.5, 3.1.7, 3.1.12, 3.1.21, 3.2.5
Gloekner, Kena	Solar_CL_001	3.1.15, 3.15.20.7, 3.15.20.8, 3.15.10.5, 3.18.3
Gloekner, Patrick	SEDD11821	3.1.15
Gloege, Randall, Lytle Ranches	SEDD10806	3.2.3, 3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5
Gluckman, Geoffrey	SEDD10614	3.16.1
Gobely, Michelle	SEDD10291	3.2.5
Godinez, Art	SEDD10503	3.16.1
Golden, Kathleen	SEDD10986	3.2.5
Goldenberg, Helen	SEDD11666	3.2.3
Goldman, Joseph	SEDD10814	3.16.1
Goley, Patricia	SEDD11856	3.16.2

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Gonzales, Shaun	SEDD10160	3.14.2, 3.1.6, 3.1.7, 3.7.14, 3.7.3, 3.7.13, 3.7.9, 3.3.1, 3.15.13.4, 3.15.10.7, 3.15.11.10, 3.17.5, 3.7.20, 3.14.7, 3.14.8, 3.6.4, 3.15.24.2, 3.15.13.6, 3.9, 3.17.1, 3.7.6, 3.4.2
Gonzales, Shaun	SEDDsupp20090	3.14.7, 3.17.5, 3.1.5, 3.1.6, 3.1.7, 3.2.2.3, 3.7.22, 3.2.2.1, 3.11.2, 3.11.3
Gonzales, Shaun	Solar_DC_007	3.6.1, 3.9, 3.14.8, 3.15.13.4, 3.3.2, 3.17.1
Goodman, Alice	SEDD11157	3.2.5
Goodrich, Rebecca	SEDD11472	3.2.5
Goodroad, Shareen	SEDD10069	3.2.3, 3.17.5
Gorby, Terry	SEDD11173	3.14.1, 3.2.5
Gore, Jesse	SEDD11743	3.16.1
Gottberg, Kathy	SEDD11630	3.17.1
Gottesman, Nancy	SEDD10762	3.2.5, 3.1.7, 3.1.5, 3.1.12, 3.1.21
Govan, Michael	SEDDsupp20173	3.2.2.1
Grace, Kathryn	SEDD10387	3.2.3
Grace, Rob	SEDD10201	3.16.1
Graffagnino , Mary Ann and Frank	SEDD10057	3.16.1
Graham, Guy	SEDD10885	3.16.1
Graham-Gardner, Rosemary	SEDD10408	3.17.1
Grant, TRoy	SEDD11296	3.16.1
Grantham, Danny	SEDD11172	3.16.1
Grasso, Dori	SEDD10332	3.2.5
Grauert, Ruth	SEDD11416	3.2.5
Graves, Caryn	SEDD10533	3.14.1, 3.2.5
Gray, H	SEDD10360	3.16.1
Green, July	SEDD10298	3.16.1, 3.2.3, 3.2.5
Greene, David	SEDD10206	3.16.1
Grenard, Mark	Solar_PH_012	3.14.1, 3.17.5, 3.4.1
Gress, Ted	SEDD10753	3.2.5
Grey, Gerald	SEDD10130	3.2.4, 3.1.7, 3.6.1
Griffin, Leah	SEDD10479	3.14.1, 3.2.5, 3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.3
Griffith, Clayton	SEDD10690	3.18.3
Grindle, Russell	SEDD11129	3.17.6
Grishman, Joan	SEDD10742	3.16.2, 3.17.1
Groff, Robert	SEDD10480	3.17.1
Grote, Janet	SEDD10558	3.2.5
Grove, Earl	SEDD10648	3.2.3
Grunert, Brice	SEDD11065	3.14.1, 3.2.5
Guidi, Rita	SEDD10052	3.16.2, 3.14.7, 3.17.5, 3.6.4, 3.15.24.2, 3.14.2
Guillory, Renee	SEDD10065	3.14.1, 3.2.2
Guzynski, Elizabeth	SEDD11365	3.17.1, 3.2.5
Gwartney, Abra	SEDD10406	3.2.5, 3.1.7, 3.1.5
Hacker, Gloria	SEDD10084	3.2.1, 3.15.9.1, 3.15.25, 3.18.3, 3.15.10.4, 3.15.15.2, 3.6.1, 3.14.1
Hacker, Gloria	Solar_LC_004	3.6.1, 3.17.1
Hader, Karla	SEDD11307	3.16.1
Hagen, Carole	SEDD11405	3.16.1

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Hager, Jon	SEDD11461	3.2.3
Hague, George	SEDDsupp20097	3.17.1, 3.6.4, 3.5.1
Haley, Kimberly	SEDD10331	3.16.1
Hall, Andrea	SEDD11758	3.2.5, 3.2.3
Hall, Jamie	SolarS_EC_07	3.17.6
Hall, Jennifer	SEDD10152	3.16.2, 3.17.1, 3.14.1
Hall, Leslie	SEDD11496	3.2.5
Hall, Natalie	SEDD11077	3.2.5
Hall, Silvia	SEDD11433	3.16.1, 3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5, 3.14.1
Hamrick, Frank	SEDD11115	3.16.1
Hance, William	SEDD11382	3.14.1
Handwerker, Steven	SEDD10752	3.16.1
Hanes, Dorothy	SEDD11048	3.2.5, 3.2.3
Haney, Frazier	SolarS_EC_01	3.16.2, 3.14.7, 3.17.5, 3.17.1, 3.14.6, 3.14.1, 3.4.2, 3.2.1, 3.6.4, 3.19, 3.8.2, 3.18.3, 3.14.2
Haney, Frazier	Solar_IW_010	3.2.1, 3.15.11.11
Haney, Richard	SEDD11890	3.14.3, 3.6.4
Hanson, Barbara	SEDD10432	3.16.1
Hanson, Bruce and Michelle	SEDD11513	3.2.5
Haq, Solarpanel	SEDD11725	3.16.1
Harden, Ronald	SEDD10754	3.2.5
Harkins, Lynne	SEDD10577	3.2.5, 3.14.1, 3.1.7, 3.1.5, 3.1.12, 3.1.21
Harper, Bill	Solar_EC_001	3.15.13.4
Harper, Bill	Solar_IW_013	3.15.14.11, 3.18.3, 3.15.9.1, 3.15.23.2, 3.15.23.4, 3.7.13, 3.1.7, 3.15.15.10, 3.15.20.5
Harrington, Michael	SEDD10496	3.2.3
Harris, Charles	SEDD10369	3.2.5, 3.15.15.3
Harris, E	SEDD11517	3.14.1, 3.2.5
Harris, Laurie	SEDD10957	3.2.5
Harrison, Harry	SEDD10469	3.16.1
Harrison, Randy	Solar_044	3.14.1, 3.8, 3.2.2.3, 3.15.13.3, 3.15.11.6, 3.2.3
Hart, Kerry	SEDD10148	3.16.2, 3.17.4, 3.17.5, 3.2.1, 3.17.6, 3.17.1, 3.11.1, 3.17.3
Hartz, Norman	SEDD10981	3.18.3
Hassinger, George	SEDD11110	3.17.1
Hassinger, George	SEDD11114	3.17.1
Havens, Elizabeth	SEDD11379	3.15.13.4
HawkWatch International	SEDD11830	3.14.1, 3.15.13.9
Headley, Paul	SEDDsupp20007	3.16.2
HEAL Utah	SEDD11639	3.16.1, 3.14.2, 3.1.24, 3.1.22, 3.1.23, 3.5.1, 3.6.3.2, 3.6.3.3
Hediger, Nancy	SEDD10703	3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5
Hedley, Diane	SEDD11185	3.2.5
Heizer, Michael	SEDD11881	3.2.2.1
Hemstreet, Steve	SEDD11685	3.17.1, 3.17.6, 3.18.1
Henes, Donna	SEDD10219	3.16.1
Hepburn, Chet	SEDD10792	3.2.5

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Herbruck, Janet	SEDD10678	3.2.5
Herndon, Laura	SEDD10165	3.2.5
Herrmann, Dorene	SEDD10700	3.2.5
Herrmann, Ronald	SEDD11325	3.2.3
Herron, Andria	SEDD10409	3.16.1
Hersha, Joseph	Solar_CC_002	3.16.1
Hester, Michael	SEDD11477	3.16.2
Hetrick, Milt	SEDD10112	3.17.3, 3.15.7.2, 3.15.9.6, 3.15.13.4, 3.15.10.1, 3.15.11.10, 3.18.3, 3.2.3, 3.7.13, 3.18.1, 3.12, 3.1, 3.15.25, 3.15.1.1, 3.15.7.1
Hiemstra, Raymond	SEDD11782	3.18.2, 3.17.4, 3.12, 3.2.3, 3.17.1, 3.17.5
Hiemstra, Raymond	SEDDsupp20140	3.14.1
Higginson, Jane	SolarS_EC_08	3.16.2, 3.17.1, 3.18.3, 3.15.13.4, 3.3.2, 3.15.13.5, 3.15.13.8
Highton, Fred	Solar_TU_004	3.17.4, 3.18.3
Hill, Marian	SEDD10075	3.16.1
Hillegass, Gene	SEDD11244	3.18.3
Hilt, Kathy	SEDD10816	3.2.5
Hires, Brian	SEDD10154	3.14.1, 3.8
Hirsch, Harriet	SEDD11742	3.2.5
Hixenbaugh, Brenda	SEDD11072	3.16.1
Hodie, Jake	SEDD10596	3.16.1, 3.14.1, 3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5
Hoehlein, Jill and Rich	SEDD11131	3.2.3
Hoggard, Jacquie	SEDD11480	3.2.5, 3.1.7, 3.1.5, 3.1.12, 3.1.21
Hollander, Glen	SEDDsupp20001	3.16.1, 3.17.1
Hollar, Johann	SEDD11091	3.18.3
Hollingsworth, Presly	SEDD10621	3.2.5
Hopkins, Lynette	SEDD11473	3.16.1
Hoppenbrouwers, Elke	SEDD10934	3.2.3
Horan, Debbie	SEDD11043	3.16.1
Horn, Andrew	SEDD11169	3.2.5
Hornbeck, Rhonda	Solar_CL_007	3.6.3.3
Horne, Andy	Solar_EC_003	14.7, 3.7.2
Horst, Karla	SEDD11431	3.16.1
Hovekamp, Larry	SEDD10797	3.16.1
Howard, Gloria	SEDD10599	3.2.5, 3.14.1, 3.1.7, 3.1.5, 3.1.12, 3.1.21
Howell-Coleman, Frances	SEDD11755	3.2.5
Hubbard, Mary	SEDD11544	3.16.1
Hudgins, Janet	SEDD10500	3.16.1
Hudson, Sigmund	SEDD11217	3.2.5
Hughes, Brendan	SEDD10088	3.17.5, 3.8.3, 3.14.5, 3.2.2.4, 3.1.2, 3.2.2.3, 3.1.7, 3.15.11.11, 3.18.3
Hughes, Brendan	SEDDsupp20163	3.17.5, 3.8.3, 3.7.1, 3.17.1, 3.17.2
Hughes, Brendan	SolarS_PD_03	3.2.3, 3.14.2, 3.14.1, 3.4.1, 3.17.1, 3.7.1
Hughes, Joy	Solar_AL_001	3.17.1, 3.1.9, 3.8
Hughes, Joy	SolarS_AL_05	3.16.2
Hughes, Lisa	SEDD10460	3.16.1

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Hult, Philip	SEDD10458	3.16.1, 3.2.5, 3.2.2.3
Humes, Jasmine	SEDD11111	3.16.1
Hunt, Linda	SEDD10463	3.2.3
Hunt, Sharon	SEDD10643	3.16.1
Huntley, Brian	SEDD10495	3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5
Hurst, Jetta	SEDD11018	3.16.1
Hurst, Jetta	SEDD11023	3.2.5
Hutchinson, Terrance	SEDD11736	3.2.5
Iberdrola Renewables	SEDD11878	3.18.3, 3.4.2, 3.2.2, 3.5.1, 3.7.4, 3.5.6, 3.2.2.4, 3.2.1, 3.15.9.3, 3.15.9.6, 3.1.12, 3.2.5, 3.15.15.2, 3.1.19, 3.12, 3.7.15, 3.14.1, 3.17.5, 3.6.4, 3.4.1
Imperial County	SolarS_021	3.6.1, 3.2.2, 3.14.2, 3.14.1, 3.8, 3.6.3.2
Imperial Irrigation District	SEDD10096	3.1.4
Incao, Philip	SEDD10093	3.16.2, 3.18.3, 3.17.1
Incao, Philip	SEDDsupp20025	3.14.2, 3.17.1, 3.17.2
Ingraham, E.	SEDD10225	3.2.3
International Dark Sky Association	SEDD10068	3.15.11.2, 3.15.15.3
International Dark Sky Association	Solar_PH_007	3.15.15.3, 3.15.11.2
Inyo County	SEDD10163	3.8, 3.7.16, 3.6.3.2
Inyo County	SEDD11837	3.7.16
Inyo County	SEDDsupp20064	3.8, 3.2.2, 3.6.3.2, 3.7.16
Irby, Harriet	SEDD10876	3.2.5
Irvin, Katja	SEDDsupp20095	3.14.1, 3.2.2
Ivanova-Hathcock, Vanja	SEDD11765	3.2.5
Iversen, Sheryl	SEDD10980	3.2.5
Jackson, Bruce	SEDD11031	3.2.5, 3.14.1, 3.1.7, 3.1.5, 3.1.12, 3.1.21
Jackson, Donald	SEDD10476	3.2.5
Jacob, Linda	SEDD11050	3.16.1
Jacobs, Len	SEDD10509	3.2.5
Jacobson, Clara	SEDD10440	3.17.1, 3.2.5
Jacobson, Lisa	SEDD11450	3.2.5
Jagiello, Linda	SEDD11385	3.2.5
Jantzen, Veronica	SEDD10763	3.16.1
Jasper, Marilyn	SEDDsupp20104	3.7.12, 3.7.3, 3.2.2
Jasu, Barry	SEDD10353	3.16.1
Jasu, Barry	SEDD11361	3.16.1
Jeffrey, Eiffler	SEDD11255	3.2.5
Jennings, Kathleen	SEDDsupp20091	3.6.1
Jensen, Donna	SEDD10595	3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5
Jernquist, Harriet	SEDD11868	3.16.1
Jessler, Darynne	SEDD10619	3.2.5, 3.1.5, 3.1.7, 3.1.12
Johnson, Anne	SEDD11549	3.2.5
Johnson, Michael	SEDD11113	3.16.1
Johnson, Parvin	Solar_AL_006	3.14.7, 3.2.2.3
Johnson, Patricia	SEDD10114	3.17.1, 3.15.9.3

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Johnson, Sandra	Solar_035	3.15.15.9, 3.15.22.1, 3.15.7.7, 3.15.23.3, 3.15.7.8, 3.15.23.5, 3.15.11.4, 3.15.11.7, 3.18.3, 3.15.20.2, 3.15.20.5, 3.15.20.7, 3.15.20.4, 3.15.20.6, 3.15.25, 3.15.14.11, 3.7.2, 3.18.2, 3.2.1, 3.17.5, 3.2.2, 3.5.1, 3.15.11.2, 3.15.11.9, 3.6.3.2, 3.6.2, 3.6.1, 3.15.24.9, 3.2.3, 3.1, 3.6.3.3, 3.2.4, 3.17.4, 3.14.8, 3.18.3, 3.7.9, 3.15.19.6, 3.15.15.3, 3.15.6.3
Johnson, Sandra	Solar_GF_005	3.1.17, 3.6.3.1, 3.6.1
Johnson, Sarah	SEDD11086	3.14.1
Johnson, Stephen	SEDD10528	3.14.1
Jones, Cynthia	SEDD10119	3.7.2, 3.15.9.1, 3.15.9.4, 3.1.7, 3.15.10.2, 3.15.10.5, 3.17.1, 3.17.5
Jones, Loren	SEDD10183	3.16.1
Jordan, Judith	SEDD10015	3.17.1
Jordan, Patrick	SEDD10033	3.14.1, 3.3.2, 3.2.5
Jordan, Patrick	SEDD11857	3.16.1
Jorgensen, Bob	SEDD11375	3.2.5
Jr., Norman	SEDD10553	3.6.1
Judd, Deborah	SEDD11275	3.2.3
Judd, Deborah	SEDD11276	3.2.3
Jurczewski, Carol	SEDD10472	3.2.3
Kagan, Nathan	SEDD11362	3.18.3
Kablein, Amy	SEDD10405	3.16.1
Kaneko, Sylvia	SEDD11449	3.2.3, 3.16.1
Kaplan, Robert	SEDD10719	3.2.5
Karen White, MSW	SEDD10344	3.2.3
Karie, Piper	SEDD11282	3.16.1
Karpiscak, Martin	Solar_TU_005	3.16.1, 3.17.4, 3.12, 3.2.3
Katten Muchin Rosenman, LLL on behalf of BNSF Railway Company	SEDD11901 SEDD11903 SEDD11904	3.15.22.3, 3.15.9.6, 3.15.23.5, 3.2.2.2, 3.3.1, 3.7.3, 3.6.3.1, 3.13, 3.2.1, 3.15.23.2, 3.14.2, 3.7.4
Kavanagh, Maureen	SEDD11420	3.2.5
Kavanaugh, Michael	SEDD10377	3.2.3, 3.2.5, 3.14.1
Keddem, Aliza	SEDD10170	3.16.1
Keegan, Helen	SEDD10972	3.14.1
Keeling, Gailen	SEDD10562	3.2.5
Kelly, Ann	SEDD10886	3.2.3
Kelly, Barbara	SEDD11553	3.16.1
Kelly, Doreen	SEDD11772	3.18.3
Kelly, Frances	SEDD11297	3.17.1
Kelly, Pamela	SEDD10309	3.16.1
Kennedy, Ann	SEDD11505	3.2.5
Kevin, David	Solar_AL_003	3.15.5.2, 3.15.11.6
Kerncrest Audubon Society,	Solar_052	3.14.2, 3.18.3
Kesich, John	SEDD10524	3.2.5, 3.17.1
Kestler, Ronald	SEDD10658	3.2.5
Kethler, Dorothy	SEDD10326	3.1.7, 3.1.5, 3.1.12, 3.1.21
Kieffer, Ramsay	SEDD10227	3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Kim, Young	SEDD10266	3.2.5
King, Jim	Solar_049	3.15.20.4, 3.12, 3.17.5, 3.16.1
King, Terry	SEDD10177	3.16.1
Kingma, Kevin	SEDD11833	3.16.2, 3.14.7, 3.14.8
Kingma, Kevin	SEDDsupp20166	3.17.1, 3.11.1, 3.6.4, 3.17.5
Kinner, Jamie	SEDD10466	3.16.1
Kiss, Teresa	SEDD10301	3.1.5, 3.1.7, 3.1.12, 3.1.21, 3.2.5
Klerer, Leona	SEDD10207	3.2.5
Kneibert, Walter	SEDD11034	3.16.1
Knepper, Matt	SEDD10014	3.18.3
Knoll, Carolyn	SEDD10260	3.2.5, 3.14.1
Koenig, James	SEDD11550	3.16.1
Kohl, Diane	SEDD10939	3.2.3
Kohler, William	SEDD11146	3.2.5, 3.17.1
Kolter, Phillip	SEDD10554	3.14.1
Korshak, Yvonne	SEDD10229	3.2.3, 3.2.5
Kosek, Raphael	SEDD10841	3.16.1
Kram, Ruth	SEDD11202	3.2.5
Kramer, Joan	SEDD11446	3.2.5
Kramer-Dodd, Gay	SEDD10982	3.2.3
Kraus, Brad	SEDD11104	3.2.3
Krikorian, Linnell	SEDD10874	3.2.5
Krohn, Fred	SEDD11374	3.2.3
Krouse, Donald	SEDDsupp20112	3.6.1
Kruzen, Debbie	SEDD10487	3.18.1
Kuehler, Steve	SEDD11068	3.16.1
Kukkonen, Holly	SEDD11305	3.16.1, 3.14.1, 3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5
Kunz, James	SEDD11703	3.2.3
Kurland, Anthony	SEDD10634	3.2.5, 3.18.3
Kurman, Michael	SEDD10865	3.16.1, 3.2.3
L, Carmen	SEDD11183	3.2.5, 3.17.1
La Cuna de Aztlan Sacred Sites Protection Circle	SEDDsupp20050	3.11.1, 3.15.11.9, 3.16.2, 3.17.1, 3.17.5, 3.2.2.1, 3.15.18.3
Lackey, Mercedes	SEDD11069	3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5
Lakiish, Mattie	Solar_AL_019	3.16.3, 3.14.3, 3.1.8, 3.1.9, 3.1.1, 3.1.11, 3.18.3, 3.6.4
Lakish, Matie	SolarS_AL_14	3.15.11.11, 3.7.2
Lamfrom, David	Solar_BA_009	3.14.1, 3.2.1, 3.5.5, 3.6.2, 3.1.5, 3.1.6, 3.1.7, 3.14.2, 3.8, 3.17.4, 3.15.9.1, 3.1.12, 3.16.1
Landau, Doug	SEDD11645	3.2.5
Lane, Jana	SEDD10926	3.2.5
Langlois, Theresa	SEDD10031	3.2.3, 3.2.5, 3.7.2
Lankford, Mitch	SEDD10107	3.15.11.9, 3.15.9.1, 3.7.2
Larson, Mark	SEDD10725	3.2.5
Latendresse, Jacqueline	SEDD10276	3.2.5
LaVerne, David	SEDD10243	3.2.5
Law, Patricia	SEDD11233	3.2.3
Lawless, Doris	SEDDsupp20089	3.6.1, 3.16.1
Lawless, William	SEDD11204	3.16.1
Lawrence, Bonnie	SEDD11561	3.2.5

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
LeBlanc, Edward	SEDD11734	3.17.1, 3.2.3
Ledden, Dennis	SEDD11495	3.2.5
Lee, Toni	SEDD10198	3.16.2
Leinbaugh, Tracy	SEDD10214	3.2.5, 3.14.1, 3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.17.1
Lenk, Vivienne	SEDD11280	3.17.1, 3.2.5
Leppla, Joan	SEDD10724	3.16.1
Leske, Jim	SEDD11063	3.16.1
Levin, Francee	SEDD11152	3.16.1
Levin, Jon	SEDD11010	3.1.7, 3.1.5, 3.1.12, 3.1.21
Levitt, Jeff	SEDD11097	3.2.5
Lewis, Courtney	SEDD10280	3.16.1
Lillard, Renee	SEDD11453	3.2.5
Lim, Yee	SEDD11057	3.2.5, 3.1.7, 3.1.5, 3.1.12, 3.1.21
Lincoln County	SolarS_LV_09	3.16.1, 3.6.3.2, 3.7.5, 3.2.2, 3.1.13, 3.1.15, 3.1.16, 3.15.6.4
Lincoln County Board of Commissioners	Solar_002a	3.6.3.1, 3.19, 3.5.1, 3.1.15, 3.1, 3.5.3, 3.15.1.2, 3.18.3, 3.15.3.4, 3.15.6.2, 3.15.7.6, 3.15.10.1, 3.15.11.3, 3.15.13.5, 3.15.13.9, 3.15.19.6, 3.5.2, 3.15.20.2, 3.15.20.3, 3.15.20.5, 3.15.20.8, 3.15.21.2, 3.15.22.5, 3.12, 3.15.3.2, 3.15.3.5, 3.7.11, 3.15.9.1, 3.15.9.7, 3.15.9.2, 3.15.10.4, 3.15.10.5, 3.15.11.9, 3.1.13, 3.7.17, 3.15.14.3, 3.15.14.6, 3.15.17.2, 3.15.18.5, 3.15.18.8, 3.15.1.1, 3.15.24.16, 3.14.1, 3.14.2, 3.2.2, 3.1.16, 3.5.6, 3.15.20.4, 3.15.6.3, 3.15.7.2, 3.3.1, 3.7.14, 3.15.3.1, 3.15.9.6, 3.15.13.2, 3.15.11.10, 3.15.15.2, 3.15.16.2, 3.15.18.1, 3.15.20.9, 3.6.4, 3.2.1, 3.15.22.1, 3.15.14.5, 3.15.13.4, 3.7.1
Lincoln County Commission	SEDDsupp20032	3.6.3.2, 3.6.3.3, 3.6.1, 3.1, 3.17.5
Lincoln County Commissioners	SolarS_LV_08	3.6.1, 3.6.3.2
Lincoln County NV Planning Department	SEDD11779	3.14.1, 3.5.1, 3.1.13, 3.1.15, 3.1.16
Lincoln County, N-4 Grazing Board	Solar_CL_003	3.14.1, 3.6.3.3, 3.15.3.2, 3.1.13, 3.1.15, 3.1.16, 3.15.24.16
Lincoln County, Nevada	SEDDsupp20088	3.1.15, 3.1, 3.7.19, 3.4.2, 3.11.2, 3.7.11, 3.7.6, 3.7.10, 3.14.3, 3.2.2.1, 3.1.13, 3.1.16, 3.7.14, 3.7.3, 3.7.13, 3.3.1, 3.15.6.4, 3.7.5, 3.14.1, 3.18.3, 3.14.8, 3.2.2, 3.8, 3.6.3.1, 3.3.2, 3.6.3.2, 3.7.9, 3.6.3.3, 3.16.1, 3.15.7.1, 3.15.10.4, 3.14.6, 3.15.3.2, 3.15.5.1, 3.15.9.2, 3.15.9.3, 3.15.9.6, 3.15.11.5, 3.17.5
Lincoln County, Nevada, Board of Commissioners	Solar_002b	3.15.21.2, 3.1.13, 3.15.21.3, 3.15.22.4, 3.3.1, 3.15.23.2
Lincoln, Sarah	SEDD11203	3.18.3
Link, Mike	SEDD10632	3.2.3
Link, Virgene	SEDD10891	3.2.5, 3.17.4

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Lipsitz, Mike	SEDDsupp20136	3.6.1
Lish, Christopher	SEDD10123	3.2.3, 3.16.1, 3.2.1, 3.14.2, 3.6.3.3, 3.14.1
Lish, Christopher	SEDD11796	3.2.3, 3.14.1, 3.2.5, 3.1.5, 3.1.7, 3.1.12, 3.1.21, 3.8, 3.2.2.3
Lish, Christopher	SEDDsupp20059	3.16.1, 3.14.2, 3.6.1, 3.2.5, 3.2.2.3, 3.2.3, 3.17.1, 3.11.2, 3.14.1, 3.2.2.4
Liske, Patricia	SEDD10526	3.2.5, 3.1.7, 3.1.5, 3.1.12, 3.1.21
Little, Christiina	SEDD11527	3.18.3
Livesay, Corinne	SEDD10633	3.17.1, 3.18.2
Livingston, Dr.	SEDD10585	3.18.3
Lloyd, Jason L Bar C Ranch	SEDD11807	3.1.15
Lofroos, Catharine	SEDD10996	3.16.1
Lofton, Saab	SEDD10187	3.2.1
Logue, Michael	SEDD10738	3.2.5, 3.1.5, 3.1.7, 3.1.12
Lommel, Patricia	SEDD10706	3.2.5
Lonneman, Valerie	SEDD10938	3.14.1, 3.1.5, 3.1.7, 3.1.12, 3.1.21, 3.2.5
Lopez, Irene	Solar_013	3.1.5, 3.14.1, 3.1.6, 3.2.3
Lopez, Tomas	SEDDsupp20040	3.1.11, 3.17.4
Lopez, Vince	SEDD11732	3.16.1
Los Angeles County Board of Supervisors	SolarS_036	3.6.1, 3.2.2, 3.14.2, 3.14.1, 3.8, 3.6.3.2
Louie, Denise	SEDDsupp20087	3.2.3, 3.17.1
Louis Harris, Jr.	SEDD11249	3.2.3
Lowery, Karen	Solar_006	3.14.2, 3.2.2.1, 3.14.1
Lowry, Jeff	SEDD11659	3.16.1
Lubin, Hari	SEDD11158	3.2.5
Lucerne Valley Economic Development Association. (LVEDA)	SEDD10111	3.5.1, 3.7.9, 3.17.1, 3.17.5, 3.11.1, 3.15.13.4, 3.3.2, 3.11.2, 3.11.3, 3.2.1, 3.2.3, 3.18.3
Ludvik, Chris	SEDD11727	3.16.1
Lujan, Virginia and Steve; Archuleta, Fabian; Garamillo, Lucy; Casias, Amy; Cisneros, Frances; Hores, Armando; Sanchez, Dominic; Espinoza, B.; Armentis, Robert	Solar_028	3.1.8
Luke LS Power Development, LLC	SEDD11873	3.7.4
Luke, Robert CTA/NEA	SEDD10649	3.18.3
Lukensmeyer, Pat	SEDD10078	3.18.2
Lumcloon Energy	Solar_PH_002	3.18.3, 3.14.2
Lundgren, Theodore	SEDD10356	3.17.1, 3.2.5
Lunn, Sally	SEDD10688	3.2.5
Lutringer, Emily	SolarS_AL_17	3.16.1, 3.17.1, 3.7.2
Lyda, Mary	SEDD10535	3.2.5
Lyles, Jeff	SEDD10601	3.15.15.1
Lyons, Steve	SEDD10832	3.18.3
Lyte, Phyllis	SEDDsupp20083	3.6.1
Lytle, Cory	Solar_CL_004	3.6.3.2, 3.14.1, 3.18.3, 3.15.11.3
Lytle, Donna, Cross Over V Ranch	SEDD11805	3.1.15
Lytle, Kenneth, Lytle Ranches	SEDD11804	3.1.15
MacDonald, John	SEDD10606	3.2.5

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Macdonald, Kevin	SEDD10559	3.2.5
Mackiewicz, Frances	SEDD11435	3.14.1
MacLaren, Hannah	SEDD11126	3.17.1, 3.14.1, 3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5
MacLeod, Ramsay	SEDD10822	3.18.3
MacPhail, David	SEDD11563	3.2.5
Macrohon, Leah	SEDD11679	3.16.1
Maddoxce, Charles	SEDD11341	3.2.5
Mainstream Renewable Power	SEDDsupp20123	3.8.1
Mainwaring, Constance	SEDD11616	3.2.3
Malone, Paul	SEDD11867	3.12
Malone, Tony	Solar_BA_008	3.18.3, 3.15.13.1, 3.18.3
Manning, Kelly	SEDD11000	3.2.5
Marchioli, Marc	SEDD10215	3.16.2
Marchyn, Judith	SEDDsupp20093	3.6.1
Margeson, Donald	SEDD10557	3.2.5
Marquis, Amy	SEDD10188	3.16.1, 3.2.1, 3.17.1, 3.17.5, 3.2.5
Marra, Albert	SEDD10910	3.16.1
Marraffino, Leonard	SEDD10255	3.2.3
Marsh, Sherry	SEDD10852	3.16.1
Marshall, Linda	SEDD11723	3.2.5
Marshall, Margaret	SEDD11208	3.2.5
Marti, Duane	Solar_017	3.15.18.5, 3.15.19.8
Martin, Benjamin	SEDD11344	3.17.5
Martin, Butch	Solar_LV_004	3.12
Martin, Drew	SEDD11750	3.2.2.3
Martin, Helen	Solar_AL_011	3.17.1
Martin-Brodak, Diane	SEDD10879	3.2.5
Martinez, Leroy	Solar_AL_020	3.16.1, 3.7.2
Mason, Penny	SEDD11791	3.2.5
Massey, Susan	SolarS_EC_04	3.16.2, 3.2.3, 3.18.3, 3.18.2, 3.17.5
Matera, Stephen	SEDD10211	3.2.5
Mathews, Mary	SEDD10745	3.2.5, 3.14.1, 3.1.7, 3.1.5, 3.1.12, 3.1.21
Mauney, Laura	SEDDsupp20002	3.17.1
Mauney, Laura	SEDDsupp20005	3.17.1
Maurer, Lora	SEDD10318	3.2.5
McArtor, Robert	SEDD10943	3.12, 3.2.3
McBride, Margaret	SEDD10404	3.2.2.3
McCabe, Rita	SEDD11082	3.2.5
McCall, Jan	SEDD10890	3.2.5
McCarten, Louis	SEDD11053	3.2.5
McCarthy, Christine	SEDD11250	3.16.1
McCarthy, Maureen	SEDD10984	3.18.3
McCausland, Christopher	SEDD10942	3.16.1
McClain, Joseph	SEDD11320	3.18.3
McDermott, Ann	SEDD10063	3.17.5, 3.2.2.4
McDonough, Rebecca	SEDD10775	3.2.5
McGilligan, Mary	SEDD10884	3.16.1
McGlocklin, David	SEDD11475	3.18.3
McInerney, Anton	SEDD11046	3.18.3

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
McIntyre, Siobhan	SEDD11790	3.1, 3.6.4, 3.15.9.1, 3.15.9.2, 3.15.20.1, 3.7.7, 3.6.3.3, 3.6.5
McKimmie, Tim	SEDD10081	3.14.1, 3.17.5
McKnight, Rick	Solar_TU_007	3.2.4
McKown, Julie	SEDD11865	3.2.2.1
McManus, Tracey	SEDD11578	3.16.1
McMillan, Ashlee	SEDD11516	3.2.3
McNamara, Eileen	SEDD10537	3.2.5
MD, Joseph	SEDD11054	3.2.5
Medina, Kathleen	SEDD11753	3.16.1
Meeks, Alayn	SEDD10594	3.17.1, 3.15.23.3
Mehrotra, Siddharth	SEDD11033	3.17.6
Mein, Joen	SEDD11232	3.2.5
Mendelson, Ruth	SEDD11591	3.16.1
Mendoza, Steve	SEDD11506	3.16.1
Menyuk, Paula	SEDD11534	3.2.3
Merritt, Stephen	SEDDsupp20098	3.6.1
Mesa County Commission	SolarS_035	3.6.1, 3.2.2, 3.14.2, 3.14.1, 3.8, 3.6.3.2
Mesilla Valley Audubon Society	SEDD11874	3.15.13.5, 3.14.2, 3.14.1, 3.1.19, 3.1.2, 3.1.21
Messenger, William	SEDD10761	3.2.3
Mestas, Joe	SEDD10082	3.7.2
Metropolitan Water District of Southern California	SEDD11568	3.6.3.3, 3.15.9.2, 3.15.25, 3.15.9.5, 3.15.24.11, 3.19, 3.15.7.8, 3.15.20.2, 3.1.6, 3.7.4, 3.7.14, 3.5.1, 3.1.5, 3.7.3, 3.5.6, 3.1.7
Metropolitan Water District of Southern California	SolarS_013	3.15.9.5, 3.15.1.2, 3.1.5, 3.1.6, 3.1.7, 3.7.3, 3.19, 3.15.9.4, 3.19
Meyer, Joe	SEDD10710	3.16.1
Meyer, Twyla	SEDD11160	3.16.1
Michalak, Deborah	SEDD11793	3.16.2, 3.17.5
Michalak, Deborah	SEDDsupp20027	3.7.2, 3.6.1
Michalak, Elizabeth	SEDD11794	3.16.2, 3.17.5
Michalak, Elizabeth	SEDDsupp20058	3.6.1, 3.17.1, 3.15.20.1, 3.2.3, 3.7.2, 3.7.19, 3.17.6
Michalak, Joseph	SEDDsupp20029	3.14.1, 3.7.2, 3.7.19
Michalak, Katherine	SEDD11788	3.16.3, 3.17.1, 3.18.3
Michalak, Katherine	SEDDsupp20024	3.7.2.1
Michel, Lance	SEDD11141	3.18.3
Mickelson, Ryan	SEDD10819	3.2.5
Miller, Bonnie	SEDD11193	3.2.5
Miller, Cameron	SEDD11733	3.5.1, 3.7.2.1, 3.7.2
Miller, Cameron	Solar_AL_004	3.7.2.1, 3.5.1, 3.2.1, 3.17.1
Miller, Lori	SEDD10687	3.2.5, 3.1.5, 3.1.7, 3.1.12, 3.1.21
Milligan, Keith	SEDD10499	3.16.1
Mitchell, Carol	SEDD10257	3.18.3
Mitson, Loretta	SEDD11845	3.16.3, 3.17.1, 3.16.2
Mitson, Loretta	SEDDsupp20160	3.16.2, 3.7.2, 3.2.3, 3.7.19, 3.17.4, 3.17.6
Mitson, Loretta	Solar_AL_024	3.17.1, 3.16.2, 3.5.1, 3.15.18.1
Modarelli, David	SEDD10625	3.16.1

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Moderacki, Deidre	SEDD11357	3.17.1
Moeller, Faith	SEDD10899	3.2.5
Moeller, Robert	SEDD11602	3.2.5
Moffat, Lorna	Solar_004	3.15.3.4, 3.15.9.1, 3.15.9.4, 3.15.9.5, 3.15.9.6, 3.17.1, 3.14.2, 3.2.3
Mohave County, Arizona	SEDDsupp20145	3.2.2
Mojave Desert Land Trust	SEDDsupp20133	3.14.2, 3.14.1, 3.8.2
Mojave Trails Group	SEDD11689	3.15.24.3, 3.15.5.1, 3.6.4, 3.15.24.2, 3.17.1, 3.17.5, 3.18.3, 3.6.1, 3.3.2, 3.5.1, 3.1
Mojave Trails Group	SEDD11801	3.6.4, 3.15.5.1
Mojave Trails Group	SEDD11869	3.6.4, 3.15.5.1
Mojave Trails Group	SEDD11875	3.6.4, 3.3.1, 3.15.5.1
Molina, Elisa	SEDD10203	3.16.1, 3.2.3
Molina, Ron	SEDD11213	3.18.3
Mono County	SolarS_043	3.14.2, 3.6.1, 3.6.3.2
Mono County	SEDDsupp20060	3.14.1, 3.2.2, 3.6.3.3, 3.2.2.1, 3.15.18.2
Monroe, James	SEDD10263	3.16.1, 3.2.3
Montapert, Anthony	SEDD10520	3.2.5
Montgomery, G.	SEDD11392	3.18.3
Montgomery, Roger	SEDD10880	3.2.5
Montijo, Patricia	SEDD11439	3.2.5
Montney, Bruce	SEDD11543	3.16.1
Moody, Michelle	SEDD10970	3.2.3
Moore, Dallas	SEDD10589	3.16.1
Morgan, Linda	SEDD10552	3.2.5, 3.1.7, 3.1.12
Morisset, Schlosser, Jozwiak and Somerville on behalf of the Quechan Indian Tribe of the Fort Yuma Indian Reservation	SEDD10091	3.15.19.6, 3.15.19.8, 3.6.2, 3.15.19.5, 3.15.18.10, 3.15.19.3, 3.15.18.3, 3.15.19.4, 3.2.2, 3.15.24.1, 3.15.19.2, 3.7.14, 3.7.3, 3.7.18, 3.15.19.10, 3.14.2, 3.9, 3.14.3, 3.14.1, 3.11.2, 3.1.4, 3.15.19.1
Morongo Basin Conservation Association	SEDDsupp20175	3.2.3, 3.2.2, 3.6.3.2, 3.2.5, 3.15.20.4, 3.17.1, 3.14.1, 3.15.13.4, 3.15.13.5, 3.7.16, 3.15.20.2, 3.7.5
Morongo Basin Conservation Association	SolarS_PD_05	3.7.2, 3.2.4, 3.7.3, 3.7.1
Morongo Basin Conservation Association	SEDD11850	3.17.1, 3.14.2, 3.15.13.4, 3.14.8, 3.14.7, 3.6.4
Moscoso, Mary	SEDD10897	3.2.5
Moser, Janet	SEDD11710	3.2.3
Moskowitz, Marilyn	SolarS_EC_05	3.17.1, 3.17.6, 3.7.13, 3.12, 3.15.9.1, 3.4.1, 3.18.1, 3.15.7.1, 3.16.2
Moss, Rhea	SEDD10857	3.16.1
Moye, Joe	SEDD10694	3.16.1
Mrowka, Rob, on behalf of Senator Dean Miller	Solar_LV_015	3.14.1, 3.14.2, 3.15.11.12, 3.15.9.1
Mueller, Eleanor	SEDDsupp20049	3.7.2.1
Mueller, Helmut	SEDD10730	3.18.1
Mullen, Dianna	SEDD11406	3.16.1
Murakami, Maki	SEDD10686	3.2.5, 3.14.1

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
N-4 Grazing Board	SEDDsupp20063	3.1.13, 3.1.15, 3.1.16, 3.2.2.1, 3.11.2, 3.6.3.2, 3.6.3.3, 3.8, 3.1
N-4 Grazing Board	SolarS_LV_16	3.6.1, 3.2.2.1, 3.1.13, 3.1.15, 3.1.16, 3.14.1, 3.6.3.2
N-4 State Grazing Board	SEDD10127	3.18.3
N-4 State Grazing Board	SEDD10128	3.1.13, 3.1.15, 3.1.16
Name withheld upon request	SEDD10788	3.16.1
Name withheld upon request	SEDD11215	3.2.5
Name withheld upon request	SEDD11562	3.1.7
Name withheld upon request	SEDD11587	3.16.2
Name withheld upon request	SEDD10004	3.1.7, 3.15.14.7
Name withheld upon request	SEDD10010	3.6.1
Name withheld upon request	SEDD11637	3.16.1
Name withheld upon request	SEDD11781	3.2.4, 3.2.3
Name withheld upon request	SEDD10949	3.1.7, 3.1.5, 3.1.12, 3.2.5
Name withheld upon request	SEDD11150	3.2.3
Name withheld upon request	SEDD10574	3.16.1
Name withheld upon request	SEDD11560	3.1.7, 3.2.3
Name withheld upon request	SEDD10901	3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5
Name withheld upon request	SEDD10517	3.2.5
Name withheld upon request	SEDD10001	3.16.2
Name withheld upon request	SEDD11872	3.2.3, 3.17.1
Name withheld upon request	SEDD10383	3.2.5, 3.1.5, 3.1.7, 3.1.12
Name withheld upon request	SEDDsupp20033	3.16.3
Name withheld upon request	SEDD10497	3.2.5, 3.14.1, 3.1.7, 3.1.5, 3.1.12, 3.1.21
Name withheld upon request	SEDD11210	3.16.1
Name withheld upon request	SEDD10146	3.15.20.1
Name withheld upon request	SEDD10904	3.2.3
Name withheld upon request	SEDD10028	3.2.3
Name withheld upon request	SEDD10720	3.2.3, 3.15.23.4
Name withheld upon request	SEDD11768	3.16.2
Name withheld upon request	SEDD11597	3.2.5
Name withheld upon request	SEDD11098	3.17.1, 3.14.1, 3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5
Name withheld upon request	SEDDsupp20023	3.17.1, 3.17.6, 3.7.5
Name withheld upon request	SEDD11343	3.2.5
Name withheld upon request	SEDD11798	3.16.1
Name withheld upon request	SEDD11493	3.2.2.3
Name withheld upon request	SEDD11088	3.18.1
Name withheld upon request	SEDD10715	3.2.3
Name withheld upon request	SEDD10588	3.16.1
Name withheld upon request	SEDD10696	3.2.5, 3.17.5
Name withheld upon request	SEDD10471	3.2.5
Name withheld upon request	SEDD11295	3.18.3
Name withheld upon request	SEDD11883	3.17.4, 3.1, 3.15.9.1, 3.15.9.2, 3.7.2.1, 3.15.3.5, 3.2.1
Name withheld upon request	SEDD10038	3.1.7
Name withheld upon request	SEDD10644	3.2.5
Name withheld upon request	SEDD10054	3.2.2.3
Name withheld upon request	SEDD10863	3.2.5
Name withheld upon request	SEDDsupp20036	3.7.18

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Name withheld upon request	SEDD10153	3.16.2, 3.17.1
Name withheld upon request	SEDDsupp20078	3.6.1
Name withheld upon request	SEDD10637	3.2.3
Name withheld upon request	SEDD10602	3.18.3
Name withheld upon request	SEDD11751	3.16.1
Name withheld upon request	SEDD11134	3.2.3
Name withheld upon request	SEDD10556	3.14.1, 3.1.7, 3.1.12, 3.1.21
Name withheld upon request	SEDD10281	3.2.5
Name withheld upon request	SEDD10506	3.2.3
Name withheld upon request	SEDD11415	3.16.1
Name withheld upon request	SEDD10608	3.2.5, 3.14.1, 3.1.7, 3.1.5, 3.1.12, 3.1.21
Name withheld upon request	SEDD11558	3.14.2
Name withheld upon request	SEDD11081	3.16.2
Name withheld upon request	SEDD10794	3.2.3
Name withheld upon request	SEDD10872	3.2.5
Name withheld upon request	SEDD10363	3.1.5, 3.1.7, 3.1.12, 3.2.5
Name withheld upon request	SEDD11479	3.2.5
Name withheld upon request	SEDD11860	3.7.2.1
Name withheld upon request	SEDD11595	3.2.5
Name withheld upon request	SEDD10284	3.16.1, 3.2.5, 3.1.5, 3.1.7, 3.1.12, 3.1.21, 3.14.1
Name withheld upon request	SEDD10062	3.17.1, 3.2.2.3, 3.14.1, 3.7.6, 3.17.5
Name withheld upon request	SEDD10216	3.2.5
Name withheld upon request	SEDD10776	3.2.5
Name withheld upon request	SEDD10675	3.2.3
Name withheld upon request	SEDD10699	3.2.5
Name withheld upon request	SEDDsupp20051	3.14.2
Name withheld upon request	SEDD10902	3.16.1
Name withheld upon request	SEDD11672	3.2.3
Name withheld upon request	SEDD11843	3.8
Name withheld upon request	SEDD11108	3.16.1
Name withheld upon request	SEDD10459	3.2.5, 3.1.5, 3.1.7, 3.1.12
Name withheld upon request	SEDD10060	3.2.3
Name withheld upon request	SEDD11391	3.2.3, 3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5
Name withheld upon request	SEDD11248	3.18.3
Name withheld upon request	SEDD10650	3.2.5
Name withheld upon request	SEDD10831	3.14.1, 3.18.3, 3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5
Name withheld upon request	SEDD11783	3.16.2, 3.17.1, 3.17.5
Name withheld upon request	SEDD11764	3.17.5
Name withheld upon request	SEDD11711	3.2.3
Name withheld upon request	SEDD11283	3.17.1, 3.1.7, 3.1.12, 3.2.5
Name withheld upon request	SEDD11599	3.1.7
Name withheld upon request	SEDD11671	3.2.5
Name withheld upon request	SEDD11006	3.2.3
Name withheld upon request	SEDD11061	3.2.5
Name withheld upon request	SEDD10616	3.16.1, 3.14.1, 3.2.5
Name withheld upon request	SEDD11319	3.2.5
Name withheld upon request	SEDD10813	3.2.5
Name withheld upon request	SEDD11547	3.2.5

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Name withheld Upon Request	SEDDsupp20149	3.14.1, 3.17.5
Name withheld Upon Request	SEDDsupp20150	3.14.1, 3.17.5
Name withheld upon request	SEDD10695	3.2.5, 3.14.1, 3.1.7, 3.1.5, 3.1.12, 3.1.21
Name withheld upon request	SEDD11227	3.2.5
Name withheld upon request	SEDD10895	3.16.1
Name withheld upon request	SEDD10136	3.16.2, 3.18.1
Name withheld upon request	SEDD11585	3.2.5
Name withheld upon request	SEDDsupp11909	3.16.1
Name withheld upon request	SEDD10927	3.17.5
Name withheld upon request	SEDD10549	3.2.5
Name withheld upon request	SEDD11062	3.2.5, 3.14.1, 3.1.7, 3.1.5, 3.1.12, 3.1.21
Name withheld upon request	SEDD11702	3.2.3
Name withheld upon request	SEDD10197	3.2.3, 3.17.1
Name withheld upon request	SEDD11540	3.2.3, 3.17.5
Name withheld upon request	SEDD11770	3.16.1
Name withheld upon request	SEDD10173	3.2.3
Name withheld upon request	SEDD11652	3.17.6
Name withheld upon request	SEDD11463	3.2.3
Name withheld upon request	SEDD10396	3.2.3
Name withheld upon request	SEDD11338	3.16.1
Name withheld upon request	SEDD10295	3.16.1
Name withheld upon request	SEDD10426	3.2.3
Name withheld upon request	SEDD10419	3.2.3
Name withheld upon request	SEDD11389	3.2.5
Name withheld upon request	SEDD11105	3.2.5
Name withheld upon request	SEDD10379	3.2.3
Name withheld upon request	SEDD10954	3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5
Name withheld upon request	SEDD10551	3.2.5, 3.1.7, 3.1.5, 3.1.12, 3.1.21
Name withheld upon request	SEDD10105	3.14.2, 3.3.2
Name withheld upon request	SEDD10025	3.16.1
Name withheld upon request	SEDDsupp20042	3.14.7
Name withheld upon request	SEDD10922	3.16.1
Name withheld upon request	SEDD10282	3.16.1, 3.17.1, 3.1.5, 3.1.7, 3.1.12, 3.1.21, 3.2.5
Name withheld upon request	SEDD11352	3.2.3, 3.16.3
Name withheld upon request	SEDD10736	3.2.5
Name withheld upon request	SEDD10546	3.16.1
Name withheld upon request	SEDD10547	3.16.1
Name withheld upon request	SEDD11784	3.2.2.2, 3.15.5.1, 3.1, 3.2.2, 3.4.1, 3.15.5.3
Naples, Jean	SEDD10731	3.2.5
Nasif, Maria	SEDD11644	3.16.1
National Park Conservation Association	SolarS_LV_13	3.16.1, 3.6.1, 3.17.1
National Park Conservation Association	SEDD10563	3.2.3
National Parks Conservation Association	Solar_PH_001	3.16.1, 3.14.1, 3.2.5, 3.17.5, 3.2.2, 3.14.2, 3.6.2
National Parks Conservation Association	Solar_TU_001	3.14.1, 3.2.2.1, 3.2.5, 3.8, 3.17.5

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
National Parks Conservation Association	SEDD11815	3.2.5, 3.1.12, 3.15.9.3, 3.15.9.7, 3.1.21, 3.8, 3.17.4, 3.7.5, 3.15.24.5, 3.6.3.1, 3.7.18, 3.14.2, 3.7.12, 3.15.24.9, 3.14.6, 3.14.1, 3.3.1, 3.7.3, 3.1.5, 3.1.7
National Parks Conservation Association	SEDDsupp20156	3.14.1, 3.2.5, 3.7.3, 3.2.2, 3.1.6, 3.1.12, 3.2.2.4, 3.7.22, 3.7.2, 3.15.24.8, 3.15.13.4, 3.3.1, 3.18.3, 3.16.1, 3.6.1, 3.8.2, 3.8.4, 3.8.5, 3.17.4, 3.17.5
National Parks Conservation Association Campaign	SolarS_PD_02	3.16.1, 3.17.5, 3.6.1, 3.1.7, 3.14.1, 3.15.20.4
National Parks Conservation Association Campaign	Solar_IW_004	3.2.1, 3.2.3, 3.7.18, 3.7.1, 3.15.24.6, 3.2.5, 3.15.11.11, 3.18.3
National Public Lands News	SEDD11853	3.18.3, 3.9, 3.15.19.10, 3.6.2, 3.7.18, 3.3.2, 3.15.22.4, 3.15.8.1, 3.6.1, 3.17.1, 3.6.4
National Renewable Energy Laboratory	Solar_022	3.6.3.2, 3.15.11.10, 3.15.7.6, 3.15.9.6, 3.6.5, 3.15.12.3, 3.15.13.4, 3.15.10.1, 3.15.2.2, 3.15.15.2, 3.15.11.2, 3.15.19.3, 3.15.3.4, 3.15.7.1
National Trust for Historic Preservation	SEDD11812	3.15.18.1
National Trust for Historic Preservation	SEDDsupp20076	3.6.1, 3.15.18.4, 3.2.2.2, 3.1.9, 3.15.15.8, 3.1.14, 3.15.18.10
National Wildlife Federation	SEDD11842	3.2.3, 3.6.2, 3.7.12, 3.7.14, 3.7.3, 3.3.1, 3.15.11.10, 3.2.1, 3.17.5, 3.15.13.2, 3.15.13.3, 3.15.13.4, 3.15.13.8, 3.15.11.6, 3.3.2, 3.15.24.2, 3.15.24.6, 3.15.18.7, 3.14.1, 3.15.19.6, 3.15.18.8, 3.15.24.1, 3.15.19.2, 3.1, 3.14.2, 3.8, 3.4.1, 3.6.4
National Wildlife Federation	SEDDsupp20125	3.6.1, 3.15.13.4, 3.7.23, 3.18.3, 3.14.1, 3.7.11, 3.3.2, 3.6.2, 3.15.18.9, 3.15.18.10, 3.2.2.3, 3.1.9, 3.1.17, 3.1.23, 3.15.13.5, 3.1.24
Natural Resources Defense Council	Solar_DC_002	3.6.1, 3.14.1, 3.2.2.4, 3.14.2
Natural Resources Defense Council	SEDD11863	3.11.2, 3.11.3, 3.8, 3.7.3
Natural Resources Defense Council	Solar_IW_007	3.14.1, 3.14.2, 3.1.5, 3.1.6, 3.8.4, 3.8.5
Natural Resources Defense Council	SEDDsupp20179	3.6.1, 3.2.6, 3.5.4, 3.14.2, , 3.4.1
Natural Resources Defense Council	Solar_SA_001	3.14.1, 3.8, 3.14.2, 3.2.2, 3.1.5, 3.1.6, 3.8.4, 3.8.5, 3.6.3.3
Natural Resources Defense Council	SolarS_PD_11	3.6.1, 3.14.1

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Natural Resources Defense Council, Audubon California, California Native Plant Society, Californians for Western Wilderness, California Wilderness Coalition, Defenders of Wildlife, National Parks Conservation Association, Point Reyes Bird Observatory Conservation Science, Sierra Club-California, The Wilderness Society, The Wildlands Conservancy,	SEDD11786	3.9, 3.6.3.3, 3.15.13.1, 3.15.13.4, 3.1, 3.15.11.6, 3.15.11.11, 3.15.18.10, 3.15.13.9, 3.15.10.6, 3.15.7.1, 3.15.7.3, 3.15.10.3, 3.15.10.4, 3.15.10.5, 3.15.10.8, 3.17.1, 3.4.2, 3.14.2, 3.1.6, 3.7.22, 3.2.2.1, 3.2.2.3, 3.15.13.3, 3.2.2.4, 3.14.1, 3.8.5, 3.1.4, 3.15.9.1, 3.15.9.3, 3.15.9.4, 3.15.13.2, 3.15.24.11, 3.1.7, 3.15.11.8, 3.15.13.6, 3.15.11.7, 3.15.11.10, 3.15.18.5, 3.8, 3.1.5, 3.8.4, 3.12, 3.2.2, 3.15.9.2
Nature Conservancy	Solar_SA_010	3.14.1, 3.14.2, 3.8
Nave, Barbara	SEDD10296	3.16.1
Navy Region Southwest, DoD Regional Environmental Coordinator, Region 9	SEDD11747	3.1.13, 3.1.15, 3.15.6.3
Navy Region Southwest, DoD Regional Environmental Coordinator, Region 9	SEDD11748	3.1.13, 3.1.15, 3.15.6.4, 3.1.14, 3.4.2, 3.15.16.4, 3.1.16, 3.15.6.1, 3.15.6.3, 3.15.24.1, 3.2.2
Navy Region Southwest, DoD Regional Environmental Coordinator, Region 9	SEDD11749	3.1.2, 3.1.21, 3.7.20, 3.6.3.1, 3.7.14, 3.7.3, 3.8, 3.15.6.3, 3.15.23.3, 3.5.1, 3.19, 3.14.1, 3.1, 3.3.1, 3.7.15, 3.1.19, 3.18.3, 3.2.1, 3.7.3, 3.6.3.2, 3.6.3.3, 3.15.20.7
Nay, Blaine	SEDD10126	3.14.2, 3.18.2, 3.7.13, 3.18.3, 3.2.3
Neidich, Michael	SEDD10077	3.16.1
Nelson, Jerry	SolarS_PH_06	3.17.1
Nemtusak, Robert	SEDD10410	3.18.3
Nettleton, John	SEDD11424	3.16.1
Neunzert, Martin	SEDD10155	3.14.2
Nevada Association of Counties	SEDDsupp20185	3.6.3.2
Nevada Department of Wildlife	SEDDsupp20171	3.6.1, 3.1.12, 3.15.13.9, 3.7.23, 3.15.13.5, 3.8, 3.7.5, 3.5.4, 3.15.9.1, 3.6.3.1, 3.14.1, 3.15.13.4, 3.7.3, 3.12
Nevada Department of Wildlife	SEDD11825	3.6.4, 3.15.11.11, 3.5.1, 3.1.12, 3.12, 3.11.1, 3.15.13.4, 3.15.11.4, 3.15.13.5, 3.15.11.2, 3.15.11.12, 3.15.13.8, 3.15.9.1, 3.15.9.5, 3.14.1
Nevada State Office of Energy	SEDD11861	3.5.1, 3.6.3.3, 3.11.2, 3.11.3, 3.8, 3.6.3.1
Nevada Wilderness Project, Nevada Conservation League	SEDD11789	3.14.1, 3.15.12.2, 3.15.9.3, 3.15.9.4, 3.15.13.4, 3.15.7.1, 3.15.10.3, 3.15.10.4, 3.15.10.5, 3.15.10.8, 3.15.14.5, 3.15.7.3, 3.15.23.1, 3.15.23.4, 3.15.11.11, 3.15.11.6, 3.15.12.1, 3.15.14.1, 3.2.2.1, 3.1.13, 3.1.14, 3.1.15, 3.2.3, 3.15.18.10, 3.15.19.8, 3.5.1, 3.8, 3.2.1, 3.17.5, 3.2.2.3, 3.15.13.5, 3.2.2.4, 3.1.12, 3.15.13.6, 3.15.24.14, 3.15.9.1, 3.15.9.7, 3.15.9.2, 3.15.13.9,

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Nevada Wilderness Project, Nevada Conservation League (Cont.)		3.15.7.4, 3.15.14.7, 3.15.15.7, 3.14.2, 3.15.13.3, 3.15.24.15, 3.1.16, 3.12, 3.15.9.6, 3.1.18, 3.15.7.6, 3.15.7.8, 3.15.24.6, 3.1.17, 3.15.11.8, 3.15.9.5
New Mexico Department of Agriculture	SEDD10108	3.1.19, 3.1.2, 3.1.21, 3.15.3.2
New Mexico Department of Game and Fish	Solar_011	3.14.2, 3.19, 3.15.13.9, 3.17.5, 3.2.2.2, 3.1.2, 3.1.19, 3.1.21, 3.3.1, 3.4.2
New, Robert	SEDD11445	3.2.3
Newe Sogobia, Western Shoshone Nation	Solar_LV_001	3.18.3, 3.15.19.10, 3.15.11.11, 3.15.11.12
Newlon, Mark	SEDD10937	3.16.1
Newton, Carol	SEDD10953	3.2.3
Nextek Power Systems, Inc.	SEDD10009	3.18.3
Nezgoda, Dianne	SEDD11170	3.2.5
Nichols, MaryAnn	SEDD10527	3.2.5
Nieberg, Pamela	SEDDsupp20080	3.2.2, 3.14.2, 3.14.1
Nolan, Ruth	Solar_IW_003	3.16.2, 3.2.3, 3.18.3, 3.15.23.4
Nolan, Ruth	SolarS_PD_09	3.2.3, 3.18.3, 3.15.9.1, 3.15.23.4, 3.15.25
Norden, Michael	SEDD11206	3.2.5
Norruis, Enid	SEDD10536	3.16.1
North, Linda	SEDD11608	3.16.1
Note, Kathryn	Solar_AL_016	3.16.3, 3.17.1
Nutini, Michael	SEDD10689	3.2.5
Nye County	SEDD10039	3.19, 3.12, 3.1.12,
Nye County Board of County Commissioners	SEDDsupp20053	3.16.1, 3.9, 3.2.1, 3.7.23, 3.15.9.4, 3.6.3.2, 3.7.21, 3.8, 3.5.4, 3.2.2, 3.6.1, 3.14.6, 3.5.5, 3.4.1, 3.19, 3.7.11, 3.7.5, 3.6.3.3, 3.7.14, 3.3.2, 3.5.6, 3.7.13, 3.1.12, 3.17.5, 3.6.4, 3.7.16, 3.7.3, 3.8.2, 3.8.3, 3.14.1, 3.14.2, 3.15.9.2, 3.19, 3.7.1, 3.15.11.7, 3.15.13.3, 3.15.17.1, 3.15.18.7, 3.15.22.5, 3.11.2, 3.7.15, 3.7.7, 3.2.3, 3.6.5, 3.14.5, 3.15.20.1, 3.15.21.3, 3.14.3, 3.7.9, 3.15.6.2, 3.18.3, 3.15.15.4, 3.15.18.6
Oberheide, Margery	SEDD10636	3.2.5
O'Brien, Mary	SEDD11229	3.14.1, 3.2.5
Odonnell, Dawn	SEDD11092	3.18.1
Odry, Susanna	SEDD10364	3.2.3
Ogas, Daniel	SEDD11619	3.17.1
Ogas, Daniel	SEDD11620	3.2.5, 3.17.1
Ogella, Edith	SEDD11313	3.17.1
Oggiono, Nanette	SEDD10850	3.2.5
Ohland, Andreas	SEDD10711	3.18.3
O'Kiersey, Mary	SEDD10446	3.2.3
Oliver, Ann	SEDD10325	3.2.5
Oliver, Nancy	SEDD10169	3.2.5
Orawczyk, Joe	SEDDsupp20052	3.18.1, 3.17.1, 3.15.23.3, 3.14.7
Orcholski, Gerald	SEDD11515	3.2.2.3

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Orlinski, Patricia	SEDD11107	3.2.5
Orr, Helene	SEDD10079	3.17.1
Orr, Mark	Solar_008	3.15.9.3, 3.15.25, 3.18.3, 3.15.11.2, 3.15.9.1, 3.15.14.11
Ortega, Maria	SEDD11594	3.1.7
Orzechowski, Larry	SEDD11586	3.17.1, 3.18.3
Oser, Wendy	SEDD11384	3.16.1
O'shaughnessy, Patricia	SEDD10425	3.16.1
Ostrander, Helen	SEDD11166	3.2.5
O'Sullivan, Katherine	SEDD11729	3.16.1
O'Sullivan, Katherine	SEDD11730	3.2.3
Ottenberg, Marjorie	SEDD11692	3.2.3, 3.17.1
Overstreet, Annette	SEDD11576	3.16.1
Pacey-Field, Susan	SEDD11090	3.16.1
Pacific Gas and Electric Company	SEDDsupp20176	3.6.1, 3.7.14, 3.7.11, 3.2.2, 3.7.22, 3.1.4, 3.1.7, 3.16.1, 3.18.3, 3.14.2, 3.8.2, 3.8.5, 3.5.4, 3.3.2, 3.11.2, 3.11.3
Packer, Patti	SEDD10543	3.2.5
Pahrump Paiute Tribe	SEDD11879	3.15.19.1
Pahrump Paiute Tribe	SolarS_LV_15	3.6.1, 3.3.2, 3.15.18.10, 3.15.19.8, 3.2.3, 3.1.12, 3.5.4, 3.15.21.2, 3.15.24.14, 3.6.2
Paisley, Lorna	SEDD11649	3.16.1
Paleias, Linda	SEDD10826	3.2.5
Palladine, Michelle	SEDD10707	3.2.5
Palmer, Francis	SEDD11635	3.2.2
Palmer, Jennifer	SEDD10561	3.2.5
Paluzzi, Jeanna	SolarS_AL_13	3.4.2, 3.7.2, 3.15.9.1
Panorama Environmental, Inc. on behalf of the applicant for the Soda Mountain Solar Project	SEDDsupp20155	3.11.2, 3.15.13.3, 3.7.22
Parker, Andrew	SEDD10116	3.17.1, 3.16.3, 3.18.2, 3.14.2, 3.1.24, 3.2.1, 3.17.5, 3.7.13
Parker, Doug and Jan	SEDD11214	3.2.5
Parker, Judith	SEDD11292	3.2.5
Parshall, Sharon	SEDD11269	3.16.1
Partnership for the National Trails System	SEDD11814	3.2.3, 3.1.9, 3.15.18.2, 3.1.19, 3.1.21, 3.8, 3.15.18.10, 3.14.2, 3.15.18.3, 3.6.3.1, 3.5.1, 3.7.14, 3.2.2, 3.17.1, 3.17.2, 3.15.18.7, 3.15.24.1, 3.3.1, 3.15.18.8, 3.15.18.4, 3.2.2.2, 3.15.15.1, 3.15.5.3, 3.3.2, 3.6.2, 3.14.1, 3.15.18.6, 3.1.14, 3.1.1, 3.1.7
Partnership for the National Trails System	SEDDsupp20124	3.6.1, 3.15.18.10, 3.17.2, 3.17.1, 3.2.2, 3.15.18.4, 3.2.2.2, 3.15.15.8, 3.1.14
Patsis, Eli	SEDD11367	3.16.1, 3.18.3

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Paul, Hastings, Janofsky & Walter, LLP, Large-Scale Solar Association, center for Energy Efficiency and Renewable Technologies, Solar Energy Industries Association	SEDD11823	3.11.2, 3.11.3, 3.15.13.3, 3.15.13.2, 3.15.13.4, 3.15.10.1, 3.15.11.5, 3.15.11.10, 3.15.14.5, 3.8, 3.2.1, 3.15.15.2, 3.2.2, 3.15.13.1, 3.15.13.5, 3.15.13.7, 3.15.15.3, 3.15.16.2, 3.15.18.8, 3.3.1, 3.6.2, 3.15.18.10, 3.15.9.3, 3.15.9.6, 3.15.9.7, 3.1.7, 3.15.15.5, 3.17.4, 3.5.1, 3.14.1, 3.1.5, 3.1.6, 3.8.4, 3.8.5, 3.8.3, 3.15.6.2, 3.15.7.7, 3.15.9.1, 3.7.15, 3.6.3.2, 3.6.3.3, 3.7.11, 3.14.2, 3.14.8, 3.7.14, 3.2.6, 3.7.9, 3.7.13, 3.6.3.1, 3.17.5, 3.17.6, 14.7, 3.7.12, 3.7.4, 3.7.3, 3.15.23.5, 3.15.1.1, 3.2.2.4, 3.15.2.2, 3.18.3, 3.15.1.2, 3.15.5.3, 3.15.7.6, 3.15.12.2, 3.15.9.2, 3.15.9.4
Pauly, Jeff	SEDD10027	3.1.17, 3.2.1
Pauly, Jeff	SEDDsupp20037	3.1.17, 3.15.9.1
Pauly, Jeffrey	SEDD10051	3.1.17, 3.15.15.9, 3.15.23.1
Pawnee Nation of Oklahoma	SEDD10117	3.6.2, 3.15.19.5
Peach, David	SEDDsupp20081	3.6.1
Peariso, Sharon	SEDD10869	3.2.5
Peipert, Jacqueline	SEDD10465	3.16.1
Peralta, Sharon	SEDD11058	3.2.3
Perez, Ralph	Solar_015	3.17.1, 3.12
Perry, Anna	SEDD11771	3.16.1
Perry, Janna	SEDDsupp20071	3.6.1
Peterson, Joel	SEDD11761	3.2.3
Peterson, Richard	SEDD10587	3.2.5
Peterson, Susan	SEDD11545	3.2.5
Peterson, Terry	SEDD11426	3.16.1
Petitpas, Bethanie	SEDD11303	3.2.5
Petlock, Eric	Solar_GF_003	3.7.2, 3.14.1, 3.6.1
Petrulias, Linda	SEDD11067	3.2.5
Petty, Carlene	SEDD10370	3.16.1, 3.2.5
Phelps, Dwight	SEDD11270	3.2.5
Phillips, Chet	Solar_TU_010	3.6.1, 3.2.3, 3.17.5, 3.18.3
Picking, Thomas	SEDD10005	3.17.1, 3.18.2
Pima County	SEDD11824	3.2.3, 3.14.8, 3.8.1, 3.6.3.2, 3.4.1, 3.5.1, 3.14.1, 3.8.3, 3.14.2, 3.2.1, 3.2.2.1
Pima County	SEDDsupp20056	3.6.1, 3.14.1, 3.13, 3.6.3.2, 3.2.2.1
Pintus, Susan	SEDDsupp20043	3.7.18
Pittenger, John	SEDD11408	3.16.1
Poleson, William	SEDD10110	3.18.1
Politzer, Andrew	SEDD10661	3.18.3
Politzer, Andrew	SEDD11427	3.16.1
Poncha Pass Gunnison Sage-grouse Local Working Group	SEDD11877	3.15.13.3, 3.2.2.1
Pope, Robert	SEDD11638	3.2.3
Porter, Ted	SEDD10781	3.2.3
Porter, Will	Solar_AL_022	3.2.1, 3.17.1

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Porterfield, Duane	SEDD10037	3.16.2
Potisk, Julie	SEDD10796	3.2.5
Poulos, Bonnie	SEDDsupp20044	3.5.6
Poulson, Thomas	SEDD10478	3.2.5
Powell, Fred	SEDD11041	3.18.3
Price, Elisabeth	SEDD10898	3.2.3
Pritchard, Geraldine	SEDD10270	3.2.5
Proett, Thomas	SEDD11647	3.17.6
Protect Our Communities Foundation, Backcountry Against Dumps, East County Community Action Coalition	SEDD11820	3.16.3, 3.3.2, 3.15.10.5, 3.6.4, 3.15.24.8, 3.7.1, 3.18.3, 3.17.1, 3.14.8, 3.14.7, 3.9, 3.18.2, 3.18.3
Protectors for the Ivanpah Valley	Solar_IW_022	3.18.3, 3.6.2, 3.16.2
Provencher, Lauri	SEDD10603	3.16.1
Provencio, Rick	SEDD11168	3.2.5, 3.14.1
Public Lands Foundation	SEDD10131	3.14.1, 3.7.10, 3.7.13, 3.7.11, 3.8, 3.17.5, 3.8.3, 3.4.1, 3.2.1, 3.12
Public Lands Foundation	SEDD10132	3.2.1, 3.18.3, 3.6.3.2, 3.17.4, 3.17.5, 3.17.1, 3.8, 3.7.6, 3.7.13
Q, Kathleen	SEDD10592	3.2.3, 3.17.1
Quechan Indian Nation - Culture Committee	SEDD11819	3.15.19.1, 3.2.2.1, 3.15.18.2, 3.6.2, 3.15.19.6, 3.15.19.3
Quinlan, Michael	SEDD11893	3.14.2, 3.14.1
Quinn, Emily	SEDD11757	3.16.1
Radcliff, Ruth-Ann	SEDD11132	3.17.1
Rafferty, Janet	SEDD11640	3.2.5
Raine, JoAnn	SEDD10492	3.2.5
Ralph, Trish	SEDD10673	3.2.5
Ramirez, Steve	SEDD10137	3.2.3, 3.17.1, 3.17.6
Rapp, Kathy	SEDD10242	3.2.5
Rash, John	SEDD11121	3.18.3
Rasmussen, Kelly	SEDD10256	3.2.5
Rawinski, John	Solar_029	3.2.3, 3.15.13.9, 3.1.11, 3.15.13.3
Ray, Sharon	SEDD10086	3.14.2, 3.14.1, 3.1, 3.14.3, 3.17.5, 3.6.3.3
Raymond, Judith	SEDD11212	3.2.5
Raymond, Mike	SEDD10842	3.2.2.3
Reback, Mark	SEDD10185	3.14.1, 3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5
Rechner, Diane	SEDD10795	3.16.1
Red Rock Audubon Society	Solar_026	3.14.2, 3.14.1, 3.15.13.9, 3.12, 3.15.9.1, 3.15.9.4, 3.15.24.6, 3.1.13, 3.15.7.8, 3.2.1, 3.3.1, 3.7.13
Red Rock Audubon Society	Solar_LV_016	3.14.2, 3.2.1, 3.1.13, 3.15.7.8, 3.7.6, 3.14.6, 3.3.2
Red Rock Audubon Society	SolarS_LV_11	3.4.1, 14.7, 3.14.1, 3.2.1, 3.1.12, 3.15.9.1, 3.2.2.3, 3.15.11.11
Reece, Elizabeth	SEDD10124	3.2.4, 3.1.7, 3.6.1
Reece, Roger, Lake Tamarisk Desert Resort	SEDD10125	3.1.7, 3.6.1
Reese, Elizabeth	SEDD10511	3.2.3
Reese, Toby	SEDD10693	3.16.1
Refes, Necia	SEDD10651	3.16.1, 3.2.5
Rehberger, Sally	SEDD11060	3.2.5

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Reid, Don	SolarS_LV_17	3.5.6
Reidy, Tom	SEDD11648	3.16.1
Reisman, Emil	SEDD10313	3.2.5
Renn, Melissa	SEDD10442	3.17.1
Renner, Aileen	SEDD11337	3.16.1
Renton, Barbara	SEDDsupp20191	3.6.1, 3.17.1
Reolofs, Hans	SEDD10122	3.7.2
Revesz, Mr. and Mrs. Bruce	SEDD10705	3.2.5
Reynolds, Kevin	SEDD11290	3.2.5
Rhoads, Angela	SEDD11222	3.17.1
Rice, Chris	SEDD10946	3.2.5
Richard Van Aken	SEDD10249	3.2.3
Richard, Nancy	SEDD11252	3.2.5
Riddle, Carolyn	SEDD11020	3.2.3
Riek, Taylor	SEDD11625	3.2.3
Rieve, Theresa	SEDD11079	3.17.1, 3.18.2
Riley, Russell	SEDD11186	3.18.3
Rincon, Faviola	SEDD11567	3.7.2
Rittenhouse, Calvin	SEDD10003	3.2.1, 3.17.1
Rivera, Cree	SEDDsupp20069	3.6.1, 3.16.2
Riverside County Planning Department	Solar_021	3.15.9.1, 3.15.9.5, 3.15.14.11, 3.15.12.2, 3.15.13.4, 3.15.11.4, 3.15.5.1, 3.15.23.2, 3.5.1, 3.15.15.1, 3.15.20.2, 3.15.20.6
Riverside County Planning Department	SolarS_012	3.6.1
Robert, Sheryl	SEDD10532	3.2.5
Roberts, Herb	Solar_GF_004	3.2.5, 3.1.18, 3.16.1, 3.2.4
Roberts, Katherine	SEDD10565	3.2.3, 3.7.19, 3.17.1
Roberts, Patricia	SEDD10337	3.16.1
Roberts, Ron	SEDD11423	3.16.1
Roberts, Sarah	SEDD10398	3.2.5, 3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.3
Robertson, Bruce	SEDD10021	3.15.11.2
Robinson, Janet	SEDD11044	3.2.5, 3.1.7, 3.1.5, 3.1.12, 3.1.21
Robinson, Laura	SEDD10441	3.2.3
Robinson, Marcia	SEDD10605	3.16.1
Robinson, Terry	Solar_SA_013	3.17.1, 3.17.4, 3.16.2, 3.16.3, 3.18.1
Rocca, Isabella	SEDD10486	3.2.5
Rocky Mountain Power	SEDDsupp20105	3.2.1, 3.5.4, 3.5.1, 3.5.6
Roddy, Sheila	SEDD10773	3.1.5, 3.1.7, 3.1.12, 3.1.21
Rodgers, Ron	SEDD10319	3.16.1
Roeder, Carol	SEDD11388	3.2.5
Rogers, Constance	SEDD11123	3.2.5
Rogers, Thomas	SEDD11501	3.2.5
Rogers, William	SEDD10785	3.2.5
Roland, Lorinda	SEDD11491	3.2.3
Romain, David	SEDD11309	3.2.5
Romanski, Eugene	SEDD10055	3.14.1, 3.14.2, 3.2.1, 3.8
Romero, Evangelina	SEDD11468	3.1.7, 3.15.25, 3.2.3
Romero, Evangelina	SEDD11469	3.7.2, 3.15.25, 3.1.7, 3.16.1
Romero, Freddie	SEDDsupp20119	3.2.3, 3.14.7
Rose, Amanda	SEDD10089	3.16.2, 3.17.1, 3.17.5

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Rose, Barbara	SEDD10061	3.17.1
Rose, Eric	SEDD10722	3.17.1
Rosenthal, Daniel	SEDD11153	3.2.5
Rosenzweig, Barbara	SEDD10721	3.2.5
Ross, Ellen	SEDD11024	3.17.1, 3.18.2, 3.2.4, 3.15.20.6, 3.15.15.1, 3.2.3
Ross, Robert	Solar_IW_011	3.4.1, 3.14.7, 3.14.1
Rossiter, Anne	SEDD11327	3.16.1
Ross-Leech, Diane Pacific Gas and Electric Company	SEDD11859	3.14.2, 3.7.14, 3.1.5, 3.1.6, 3.17.5, 3.7.12, 3.6.3.3, 3.5.1, 3.11.2, 3.3.1, 3.8, 3.19, 3.2.2, 3.11.3, 3.2.6, 3.2.2.3, 3.2.1, 3.2.2.2, 3.7.7, 3.7.3, 3.7.20, 3.15.1.1, 3.15.2.2, 3.15.5.3, 3.15.6.1, 3.15.7.6, 3.14.1, 3.15.9.6, 3.15.13.9, 3.15.13.3, 3.15.11.10, 3.12, 3.15.13.2, 3.15.10.1, 3.15.15.2, 3.15.16.2, 3.1.4, 3.1.7
Rougemont, Rachel	SEDD11422	3.16.1
Rowe, George	Solar_CL_005	3.1.15, 3.18.3, 3.2.2
Rubel, Scott	SEDD10349	3.2.5
Rush, Charlene	SEDD11533	3.18.1
Rush, Charlene	SEDD11698	3.18.3
Rusk, Bob	SEDD10540	3.16.1
Russell, Katherine	SEDD11251	3.1.5, 3.1.7, 3.1.12, 3.2.3, 3.17.6
Russo, Elizabeth	Solar_SA_011	3.15.18.1, 3.2.3, 3.1.5, 3.1.6, 3.1.4, 3.1.7
Ryan, Matt Coconino County Board of Supervisors	SolarS_037	3.6.1, 3.2.2, 3.14.2, 3.14.1, 3.8, 3.6.3.2
Ryan, Richard	SEDDsupp20021	3.17.6, 3.17.2
Safranek, Colin	SEDD11898	3.12, 3.16.3, 3.17.6, 3.18.2, 3.16.2
Saguache County	SEDD11829	3.14.2, 3.14.8, 3.6.3.1,
Saguache County	SEDDsupp20074	3.6.1, 3.6.3.2, 3.14.6
Saito, Donald	SEDD10804	3.16.2
Sall, Claudia	SEDDsupp20180	3.14.1, 3.14.2, 3.14.3
Sall, Frederick	SEDD11243	3.2.3
Salvato, Roland	SEDD10352	3.2.5
Sammons, Rita	SEDD10272	3.16.1
San Bernardino County	SEDDsupp20045	3.14.1, 3.15.9.1, 3.15.9.2, 3.15.9.3, 3.15.9.4, 3.15.9.6, 3.15.24.6, 3.14.8, 3.3.1, 3.15.13.4, 3.7.2, 3.3.2, 3.15.8.1, 3.16.1, 3.16.3, 3.6.3.2, 3.4.1
San Bernardino County Land Use Services Department	Solar_005	3.6.3.2, 3.14.8, 3.3.1, 3.15.9.1, 3.15.9.2, 3.15.9.6, 3.15.24.6, 3.1.6, 3.15.13.4, 3.15.22.2, 3.15.20.2, 3.15.20.4, 3.18.3, 3.15.11.10, 3.14.6, 3.3.2, 3.7.6, 3.15.5.1
San Bernardino County, California, Third District	SolarS_045	3.16.1, 3.6.1, 3.14.1, 3.2.5, 3.6.3.1, 3.15.20.4
San Juan County Commission	SolarS_031	3.6.1, 3.2.2, 3.14.2, 3.14.1, 3.8, 3.6.3.2
San Luis Rio Grande Railroad	SolarS_AL_07	3.16.1, 3.7.2.1, 3.1.8

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
San Luis Valley Ecosystem Counsel	SEDD11864	3.16.1, 3.15.24.13, 3.7.19, 3.7.2.1, 3.17.1, 3.7.5, 3.7.2, 3.4.1, 3.15.24.5, 3.17.4, 3.9, 3.2.3, 3.5.1, 3.14.8, 3.7.14, 3.7.10, 3.6.1, 3.1.8, 3.1.9, 3.1.1, 3.1.11, 3.6.4, 3.15.21.1, 3.15.21.4, 3.15.20.1, 3.15.20.2, 3.7.1, 3.17.5, 3.5.6, 3.15.10.1, 3.15.10.5, 3.15.9.1, 3.15.9.3, 3.15.11.10, 3.15.18.6, 3.15.14.5, 3.15.14.11, 3.15.15.8, 3.15.23.3, 3.15.24.6, 3.15.24.2, 3.15.11.7
San Luis Valley Ecosystem Counsel	SEDDsupp20188	3.18.3, 3.7.2.1, 3.2.1, 3.1.8, 3.1.1, 3.17.4, 3.17.1, 3.19, 3.5.4, 3.16.3, 3.7.15, 3.7.10, 3.1.9, 3.1.11, 3.4.1, 3.15.21.1, 3.15.21.4, 3.15.20.1, 3.15.20.8, 3.7.2, 3.7.19, 3.15.21.2, 3.15.9.1, 3.15.9.3, 3.15.9.4, 3.6.1, 3.15.11.2, 3.15.11.11, 3.15.18.2, 3.15.14.5, 3.15.23.3
San Luis Valley Ecosystem Counsel	SEDDsupp20190	3.18.3, 3.3.1, 3.7.2, 3.7.2.1, 3.5.6, 3.17.1, 3.16.1, 3.2.2, 3.17.4, 3.5.4
San Luis Valley Renewable Communities Alliance	SEDD11882	3.17.1, 3.17.2, 3.17.6, 3.17.3, 3.15.18.10, 3.18.2, 3.11.1, 3.14.2, 3.16.2, 3.9, 3.14.8, 3.16.3, 3.6.4, 3.17.5, 3.14.7, 3.15.9.1, 3.15.9.4, 3.15.9.5, 3.15.24.6, 3.15.7.1, 3.15.10.5, 3.15.14.13, 3.15.10.2, 3.15.10.3, 3.15.10.6, 3.15.9.3, 3.15.14.12, 3.15.11.11, 3.2.2.1, 3.15.13.3, 3.15.13.4, 3.1.9, 3.15.13.9, 3.15.18.4, 3.15.11.6, 3.12, 3.18.3
San Luis Valley Renewable Communities Alliance	SEDDsupp20172	3.17.2, 3.1.8, 3.15.2.4, 3.1.11, 3.15.13.5, 3.15.24.2, 3.14.7, 3.14.8, 3.17.1, 3.17.5, 3.15.21.2, 3.15.21.4, 3.15.20.1, 3.15.20.2, 3.7.2.1, 3.15.18.10, 3.1.1, 3.2.5, 3.1.9, 3.15.13.3
San Luis Valley Renewable Communities Alliance	SolarS_AL_04	3.6.1, 3.17.1, 3.17.5, 3.8.3, 3.16.2, 3.14.7, 3.17.4, 3.7.2
San Manuel Band of Mission Indians	Solar_BA_012	3.15.19.3, 3.15.19.6
San Manuel Band of Mission Indians	SEDD11897	3.15.18.5, 3.15.19.8, 3.6.2, 3.11.1, 3.15.19.6, 3.1.5, 3.1.6, 3.17.5, 3.15.19.4
Sanchez, Noah-D.M.	SEDD11462	3.2.3
Sanders, John	Solar_CL_006	3.1.13, 3.15.10.5, 3.15.20.5, 3.15.20.8, 3.17.4
Sandler, Brittany, on behalf of Senator Dean Heller	SolarS_LV_01	3.16.1
Sanford, Timothy	SEDD10273	3.16.1, 3.2.5
Sanitation Districts of Los Angeles County	SEDD10090	3.1.4, 3.1.5, 3.2.2.1
Sanni, Mike	SEDD11631	3.16.1
Santa Barbara County Board of Supervisors	SolarS_042	3.14.2, 3.6.3.2, 3.6.1

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Santa Cruz County Board of Supervisors	SolarS_025	3.6.1, 3.2.2, 3.14.2, 3.14.1, 3.8, 3.6.3.2
Santangelo, Stephen	SEDD10178	3.16.1
Santori, Nancy	SEDD10087	3.14.1
Satrun, Peter	SEDD10092	3.17.5
Sauer, Elizabeth	SEDD10395	3.2.5
Saway, Steve	SEDD11891	3.14.2, 3.2.2.1, 3.17.5, 3.8.3, 3.1.3, 3.15.9.1, 3.15.9.2, 3.15.14.7
Saway, Steve	SEDDsupp20143	3.8.3, 3.2.2.1, 3.1.3
Saway, Steve	Solar_009	3.1.3, 3.15.9.1, 3.15.9.2, 3.15.14.7
Sayas, Herb	SEDD10302	3.16.1, 3.2.5
Schierman, Mollie	SEDD11348	3.2.5
Schilling, Francis	SEDD10241	3.2.3
Schlein, Elizabeth	SEDD11636	3.16.1
Schmid, Christian	SEDD11555	3.5.1, 3.15.9.1, 3.2.3, 3.17.5
Schmidt, Linda	SEDD11318	3.2.5
Schmidt, Louis and Jerry	Solar_027	3.15.3.1, 3.6.1
Schneider, Frank	SEDD11451	3.15.20.1, 3.15.13.4, 3.15.13.5, 3.15.11.9, 3.2.1, 3.18.3, 3.17.1
Schoene, William	SEDD11656	3.2.3
Scholl, Susan and Tim	SEDD10534	3.2.3
Scholtz, Barbara	SEDD11535	3.2.5
Schrader, Susan	SEDD11658	3.16.1
Schrupp, Elizabeth	SEDD11766	3.16.1
Schue, Shirley	SEDD10765	3.2.5
Schultz, Arnold, Ph.D.	SEDD10367	3.16.1, 3.2.5
Schultz, Nancy	SolarS_039	3.2.3, 3.2.2.3, 3.14.1, 3.17.5, 3.2.1, 3.7.22
Schultz, Peter	SEDD10571	3.16.1, 3.2.5, 3.1.21, 3.1.12, 3.1.7, 3.1.5, 3.2.3
Schultz, Peter	SEDD10579	3.16.1, 3.2.5, 3.1.21, 3.1.12, 3.1.7, 3.1.5, 3.2.3
Schumacher, John	SEDD11687	3.18.3
Schwartz, Joyce	SEDD10538	3.16.1
Schwartz, Tamar	SEDD10366	3.16.1
Scott, Angela	SEDD11792	3.2.3
Scott, Kenna	SEDD10769	3.2.5, 3.1.7, 3.1.5, 3.1.12, 3.1.21
Scott, Pauline	SEDD11494	3.2.2.3
Sears, Steve	SEDD10505	3.16.1
Sears-Barker, Claire	SEDDsupp20109	3.17.1, 3.17.5, 3.7.2.1
Seff, Joshua	SEDD10998	3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5
Seibert, James	SEDD11109	3.16.1
Selbin, Susan	SEDD10883	3.16.1, 3.14.1, 3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5
Servis, Jeanne	SEDD11200	3.2.5
Seymour, Greg	Solar_LV_010	3.16.1, 3.14.1, 3.7.14, 3.2.2.2
Shaffer, Mary	SEDD10830	3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5
Shannon, Janice	SEDD10849	3.16.1
Sharp, Donald	Solar_014	3.16.1, 3.6.3.1, 3.6.1
Sharp-Garcia, Philip	SolarS_EC_06	3.17.5, 3.18.3, 3.1.4, 3.15.23.4
Shauinger, Lynn	SEDD10261	3.16.1
Shaver, Mark	Solar_LV_009	3.6.3.2

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Shaw, Dorothy	SEDD10959	3.16.1
Shaw, Sara	SEDD11076	3.17.5
Shawcroft, Brett	SEDD11838	3.1.11, 3.15.3.5
Sheets, David	SEDD10529	3.16.1, 3.18.3
Shelton, Donnie	SEDD10407	3.2.3, 3.17.1
Sher, Dena	SEDD11376	3.2.5
Sherback, Harvey	SEDDsupp20153	3.17.4
Sheridan, Marlene	SEDD10385	3.18.3
Sherry Olson, Ph.D.	SEDD10575	3.2.5
Shohan, Doug	SEDD10166	3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5
Shrader, Gregory	SEDD11762	3.16.1
Shrimplin, Charlie	Solar_BA_006	3.16.1, 3.2.3
Shult, Abby	SEDD11460	3.2.5
Sidelman, Raphael	SEDD10798	3.18.3
Sierra Club	Solar_DC_001	3.14.3, 3.14.2, 3.14.1
Sierra Club, Arizona	SolarS_PH_04	3.16.1, 3.2.2.4, 3.18.3, 3.17.5, 3.8.3, 3.6.1
Sierra Club, Arizona Chapter	Solar_PH_010	3.14.1, 3.8, 3.17.5, 3.8.3, 3.12, 3.1.3
Sierra Club, Toiyabe Chapter	SolarS_LV_10	3.6.1, 3.2.2.4, 3.3.2, 3.17.5
Sierra, Leon	Solar_TU_003	3.18.3, 3.7.2
Silva, Andrew	Solar_BA_013	3.3.2, 3.15.24.7, 3.1
Silvarahawk, Loreen	SEDD10749	3.14.1
Simkins, Connie	Solar_CC_005	3.1, 3.15.3.5, 3.15.10.5, 3.15.10.1, 3.1.16, 3.8.1, 3.15.24.15, 3.15.24.16
Simkins, Connie	Solar_CL_002	3.7.5, 3.18.3, 3.2.1, 3.6.3.2, 3.15.20.7, 3.15.24.14, 3.15.24.15, 3.15.24.16, 3.15.9.1, 3.15.3.5, 3.15.10.5, 3.1, 3.12, 3.15.19.2, 3.5.2, 3.6.3.1, 3.6.4, 3.2.2.3
Simmons, Kathleen	SEDD11066	3.16.1, 3.2.5
Simon, Martha	SEDD11128	3.16.1
Simon, Philip	SEDDsupp20068	3.14.2, 3.14.1, 3.2.2.3
Simons, Anita	SEDD10212	3.14.1, 3.2.5
Simpson, Rusty	SEDD10402	3.2.5
Sinacore, Paul	SEDD11080	3.18.3
Sircar, Subrata	SEDD10952	3.17.1
Sky Island Alliance	SEDD11809	3.14.2, 3.14.1, 3.2.2.4, 3.2.2.1, 3.8
Slawson, Diana	SEDD10287	3.2.5
Sleeper, Stephen	SEDD10523	3.14.1
Sloane, Jeanne	SEDD10413	3.2.3
Sloneker, Sam	SEDDsupp20084	3.6.1, 3.2.3
Small, Xochitl	Solar_LC_001	3.6.1
Smalling, Rita	SEDD10056	3.2.2.3
Smiley, Julie	SEDD10147	3.2.4, 3.15.13.4, 3.15.10.5, 3.15.10.8, 3.1.7, 3.14.2, 3.17.1, 3.17.5, 3.11.1
Smith, Adrian	SEDD10286	3.2.5
Smith, Ceal	Solar_AL_017	3.14.2, 3.12, 3.7.1, 3.16.3, 3.16.1, 3.14.7, 3.17.1, 3.17.5, 3.14.8
Smith, Jim	SEDD10617	3.2.5
Smith, Mary	SEDD11557	3.16.1
Smith, Nancy	SEDD11089	3.18.3
Smith, Rob	SEDD10071	3.14.1, 3.17.1, 3.17.5, 3.1.2

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Smith, Shirley	SEDD11429	3.2.5
Smith, Ted	Solar_AL_018	3.18.3
Smith, Terry	Solar_AL_013	3.18.3, 3.7.2.1
Smith, Wayne	Solar_LV_005	3.2.3, 3.15.9.3, 3.15.9.4, 3.15.9.5, 3.15.25, 3.12, 3.7.13, 3.18.2
Snyder, Robert	SEDD10217	3.2.3
Society for American Archaeology	SEDD11281	3.15.18.1, 3.8, 3.15.18.10, 3.17.5, 3.9, 3.17.1, 3.17.4, 3.7.20, 3.7.11, 3.3.1, 3.15.18.8, 3.6.2, 3.15.19.6
Society for the Protection and Care of Wildlife	SEDD10873	3.15.8.1, 3.7.18, 3.3.1, 3.18.3, 3.15.20.2, 3.15.20.6, 3.15.20.7, 3.15.20.8, 3.3.2
Society for the Protection and Care of Wildlife	Solar_040	3.7.11
Society for the Protection and Care of Wildlife	SEDD11848	3.6.4, 3.6.2, 3.7.17, 3.2.2.1, 3.1.6, 3.15.24.2, 3.15.11.11, 3.18.3, 3.15.20.2, 3.15.20.4, 3.15.20.8, 3.3.2, 3.15.11.10, 3.4.1, 3.15.11.6, 3.6.1, 3.16.3, 3.15.24.11, 3.13, 3.2.2, 3.7.9, 3.11.1, 3.7.18
Solar Done Right	SEDD10149	3.17.2, 3.11.1, 3.6.4, 3.15.7.4, 3.2.3, 3.15.14.1, 3.17.3, 3.15.10.5, 3.15.13.4, 3.15.10.3, 3.15.18.9, 3.18.2, 3.17.1, 3.14.2, 3.9, 3.16.2, 3.16.3, 3.17.5, 3.18.3, 3.6.1
Solar Done Right	SEDDsupp20073	3.17.2, 3.17.5, 3.6.4, 3.14.7, 3.17.1, 3.17.6, 3.14.2, 3.16.2, 3.9
Solar Done Right	SolarS_EC_03	3.6.1, 3.6.4, 3.14.7, 3.2.1, 3.17.5, 3.9, 3.17.1, 3.5.5, 3.1.4, 3.15.23.4, 3.15.7.8, 3.6.2, 3.15.18.9, 3.15.18.10
Solar Energy Industries Association	Solar_DC_004	3.16.1, 3.14.2, 3.8, 3.7.14
Solar Unlimited	Solar_CC_004	3.12, 3.6.1
SolarReserve	SEDD10118	3.11.1, 3.14.2, 3.7.20, 3.7.14, 3.15.15.5, 3.8, 3.5.2
SolarReserve	SEDDsupp20129	3.2.1, 3.8, 3.14.1, 3.11.2, 3.7.21
Solem, Richard	Solar_PH_008	3.14.1, 3.2.3, 3.7.3
Solution Strategies, Inc.	SEDD11880	3.1.6
Solution Strategies, Inc. on behalf of the Town of Apple Valley	SEDD11889	3.6.3.3, 3.11.2, 3.7.16
Somerville, Thane	SEDDsupp20057	3.6.1, 3.17.5, 3.15.19.5, 3.15.19.3, 3.15.19.4, 3.15.18.7, 3.15.18.9, 3.9, 3.14.3, 3.14.2, 3.14.1, 3.7.18, 3.11.2, 3.1.4, 3.15.19.1, 3.6.2
Sommers, Pacifica	Solar_TU_011	3.17.5
Sonoran Institute	SolarS_PH_05	3.14.1, 3.18.3, 3.17.1, 3.2.2.4
Sonoran Institute	Solar_PH_016	3.14.2, 3.8, 3.11.2, 3.11.3, 3.18.3, 3.6.1, 3.2.2.4, 3.15.20.1
Sorby, Jacquelyn	SEDD11403	3.2.5
Sorrells, James	SEDD11528	3.2.5
Southern California Edison	SEDDsupp20086	3.5.6, 3.7.20, 3.3.2, 3.6.3.3, 3.5.4, 3.15.24.8, 3.5.5, 3.2.2, 3.2.6, 3.8
Southern California Edison	Solar_025	3.7.12, 3.5.1, 3.5.6, 3.14.6, 3.3.1, 3.5.3, 3.8.2, 3.6.3.3

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Southern Nevada Water Authority	Solar_003	3.1.12, 3.1.14, 3.7.4, 3.1.13, 3.15.9.2, 3.19, 3.5.1, 3.15.24.15, 3.15.24.16, 3.1.16, 3.1.15, 3.6.3.1, 3.15.9.4
Southern Nevada Water Authority	SolarS_014	3.7.4, 3.18.3, 3.15.9.1, 3.15.9.2, 3.7.3, 3.1.12, 3.1.14
Southern Paiute Pahrump Tribe; Consolidated Group of Tribes	Solar_GF_001	3.6.2, 3.15.19.7, 3.15.18.7, 3.15.19.9, 3.6.3.1, 3.15.19.10, 3.15.19.6, 3.15.21.2, 3.6.1, 3.15.18.10
Southwest Consolidated Sportsmen	Solar_LC_003	3.18.3, 3.15.9.1, 3.15.9.7, 3.1.19, 3.1.2, 3.2.2, 3.6.3.2
Spacek, S.	SEDD10825	3.14.1, 3.1.7, 3.1.5
Speaker, Unidentified	SolarS_EC_09	3.7.1, 3.15.14.11
Spears, Ellen	SEDD10067	3.7.2, 3.1.13, 3.1.15, 3.15.9.1, 3.15.9.4, 3.15.10.2, 3.17.1, 3.12
Spears, Ellen	Solar_LV_012	3.7.9, 3.15.3.5, 3.15.10.2, 3.7.2, 3.17.1, 3.12, 3.18.3, 3.6.3.2, 3.6.3.3
Spitler, Craig	Solar_CC_009	3.15.8.1, 3.18.3
Spotleson, Vinny	Solar_LV_014	3.14.3, 3.14.2, 3.15.13.3, 3.15.9.1, 3.12, 3.5.6, 3.14.1
Spotts, James	SEDD11070	3.2.5, 3.1.5, 3.1.7, 3.1.12, 3.1.21
Spotts, Richard	SEDD11038	3.14.1, 3.7.3, 3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5, 3.2.3
Sprague, Scott	Solar_PH_019	3.7.5, 3.15.13.5, 3.15.11.5
Sprague, Tiffany	Solar_PH_011	3.12, 3.15.13.9, 3.14.1, 3.2.3, 3.2.2.3, 3.7.5, 3.17.5, 3.18.3
Sprayregen, Ann	SEDD10824	3.2.5
Squyres, Marianne	SEDD11272	3.2.5
Sr, J	SEDD10483	3.2.5
Stafford, Jennifer	SEDD10726	3.2.5
Stagner, Clyde	SEDD10072	3.18.1
Stambaugh, Ruth	SEDD10716	3.2.5
Stanback, Fred	SEDD10421	3.2.3, 3.17.1
Stanley, Norm	SEDD11051	3.18.3
Stanton, Sue	SEDD10999	3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5
Stark, Krystina	SEDD10812	3.2.5
State of Utah, Office of the Governor	SEDD11321	3.7.7, 3.15.2.2, 3.2.2, 3.15.15.5, 3.8.1
State of Utah, Office of the Governor	SolarS_038	3.16.1, 3.15.9.4, 3.6.3.3, 3.14.2, 3.8, 3.8.1, 3.7.9, 3.7.14, 3.4.1
Steelman, Steve	SEDD10134	3.16.1
Steelman, Steve	SEDD10135	3.16.1, 3.7.2
Stetler, David	SEDD10205	3.2.5
Stewart, Coulter	SEDD10030	3.14.2, 3.4.2, 3.6.2, 3.16.1
Stewart, Nancy	SEDD10714	3.2.5
Stewart, Sarah	SEDD10555	3.2.5, 3.14.1, 3.1.7, 3.1.5, 3.1.12, 3.1.21
Stickney, Karen	SEDD11421	3.18.3
Stober, Paula	SEDD10672	3.2.5
Stokes, Bill	SEDD11514	3.16.1
Stone, Ransom	SEDD10923	3.18.1
Stone-Meyer, Virginia	SEDD10422	3.16.1, 3.2.5
Stowe-Longchamp, Joyce	SEDD11017	3.16.1
Stratton, Sarah	SEDD10013	3.17.5

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Strauss, Mark	SEDD11164	3.2.5
Strickland, Rose	SEDD11302	3.6.4, 3.17.1, 3.17.3, 3.15.14.1, 3.3.2
Strom, Carmi	SEDD10929	3.2.5
Stuart, Joe	SEDD11634	3.16.1
Sturges, Dorothy	SEDD10164	3.16.1
Sullivan, Christine	SEDD10963	3.2.5
Summers, Jess	SEDD11763	3.16.1
Summit Lake Paiute Tribe	SEDD10120	3.6.2, 3.15.19.11
Sumners, Robyn	SEDD11628	3.2.5
Sun Edison	SolarS_PH_03	3.11.1, 3.2.1, 3.17.1, 3.7.19, 3.14.1, 3.17.4
Sundstrom, Karl	SEDD11351	3.18.3
Swinehart, Lorin	SEDD10453	3.2.5
Switzer, Sharon	SEDD10780	3.16.1
Swope, Brian	SEDD10053	3.2.3
Swope, Brian	SEDDsupp20016	3.16.2, 3.17.1, 3.17.5
Swyers, Matthew	SEDD10192	3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5
Syrene, Marc	SEDDsupp20041	3.1, 3.16.2, 3.17.1, 3.17.5, 3.18.2, 3.18.3
Tabin, Jean	SEDD11556	3.2.5
Taggart, Carol	SEDD11700	3.18.1
Taggart, Janet	SEDD10968	3.2.5, 3.14.1, 3.1.7, 3.1.5, 3.1.12, 3.1.21
Taylor, Joan	SEDD10381	3.16.1
Taylor, Joan	Solar_031	3.2.1
Taylor, Joan	Solar_IW_005	3.2.3, 3.2.1, 3.14.2, 3.4.1, 3.6.4, 3.1.5, 3.1.6
Taylor, Zelma	SEDD11197	3.16.1, 3.2.3
Temple, Glenn	SEDD10743	3.18.3
Temple, Robert	SEDD10304	3.2.3
Tendler, Marlene	SEDD10584	3.2.5
Tepper, William	SEDD11346	3.2.3
Thaler, Gary	SEDD11363	3.2.3
Tharisayi, George	SEDD10018	3.12
The California Desert Coalition	SEDDsupp20168	3.14.2, 3.14.1, 3.2.2, 3.7.21
The Hopi Tribe	SolarS_019	3.15.18.10, 3.6.2, 3.15.19.6, 3.2.2, 3.17.5
The Nature Conservancy	SolarS_LV_06	3.16.1, 3.6.1, 3.3.2, 3.18.3, 3.1.12, 3.15.9.3, 3.15.9.4

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
The Nature Conservancy	SEDD11828	3.15.11.1, 3.15.13.1, 3.15.13.6, 3.15.11.4, 3.15.11.7, 3.14.1, 3.14.2, 3.15.13.4, 3.2.1, 3.1.5, 3.1.6, 3.17.5, 3.17.4, 3.8, 3.2.2, 3.7.3, 3.7.14, 3.3.2, 3.5.1, 3.5.3, 3.5.6, 3.7.5, 3.3.1, 3.15.9.4, 3.15.9.6, 3.15.13.3, 3.15.11.11, 3.15.9.1, 3.15.9.2, 3.15.9.7, 3.11.2, 3.11.3, 3.2.2.1, 3.15.13.9, 3.15.11.3, 3.1.3, 3.1.7, 3.6.3.3, 3.15.12.3, 3.15.10.8, 3.1.12, 3.1.13, 3.1.14, 3.1.16, 3.15.11.6, 3.1.17, 3.1.19, 3.15.10.1, 3.15.10.6, 3.1.24
The Nature Conservancy	SEDDsupp20189	3.6.1, 3.3.2, 3.8, 3.2.2, 3.17.5, 3.7.14, 3.3.1, 3.15.9.6, 3.16.1, 3.1.12, 3.15.9.1, 3.15.9.2, 3.15.9.3, 3.15.9.4, 3.15.9.7, 3.15.24.6, 3.7.5, 3.2.2.1, 3.1.7, 3.11.2, 3.11.3, 3.14.1, 3.14.2, 3.2.2.4, 3.2.2.3, 3.15.13.3, 3.2.1, 3.7.3, 3.15.13.2, 3.15.13.4, 3.15.13.9, 3.4.1, 3.1.5, 3.1.6, 3.1.14, 3.1.17, 3.1.4, 3.19, 3.6.4
The Nature Conservancy, Association of Fish and Wildlife Agencies, Wildlife Management Institute, Boone & Crockett Club, Mule Deer Foundation, The Wilderness Society	SEDDsupp20151	3.3.2
The Nature Conservancy, Wildlife Management Institute, Mule Deer Foundation, Association of Fish and Wildlife Agencies, Boone & Crockett Club	SEDDsupp20174	3.3.2
The Wilderness Society	SEDDsupp20108	3.8, 3.7.14, 3.14.6, 3.18.3, 3.11.2
The Wilderness Society	SEDDsupp20130	3.6.1, 3.2.2.1, 3.2.2.3, 3.7.23, 3.1.1, 3.1.2, 3.1.3, 3.3.1, 3.8.3, 3.15.15.1, 3.15.24.2, 3.2.2.4, 3.2.2
The Wilderness Society	Solar_LV_006	3.14.1, 3.14.2, 3.8
The Wilderness Society	SolarS_AL_08	3.6.1, 3.14.1, 3.2.2
The Wilderness Society	SolarS_LV_02	3.16.1, 3.6.1, 3.14.1, 3.2.2.4, 3.7.7
The Wilderness Society	SolarS_PD_13	3.14.1, 3.6.1, 3.8.2, 3.2.2.4, 3.7.6
The Wilderness Society	Solar_DC_003	3.16.1, 3.2.2, 3.14.1, 3.8, 3.14.2, 3.2.2.4, 3.2.2.3, 3.15.13.3, 3.7.14
The Wilderness Society	SolarS_PH_01	3.6.1, 3.2.2.4, 3.18.3, 3.8, 3.14.1, 3.17.5, 3.8.3, 3.16.1
The Wilderness Society	Solar_PH_013	3.14.1, 3.8, 3.2.2, 3.17.5
The Wilderness Society		
The Wilderness Society, Audubon California, California Wilderness Coalition, Defenders of Wildlife, Natural Resources Defense Council, Sierra Club	SEDDsupp20106	3.8.2, 3.7.3, 3.1.7, 3.1.4, 3.15.13.3, 3.2.2, 3.2.2.4, 3.2.2.3, 3.15.13.9, 3.15.13.10, 3.2.2.1, 3.7.22, 3.7.5, 3.3.2, 3.18.3, 3.11.2, 3.15.24.2, 3.6.1, 3.7.18, 3.1.5, 3.1.6
The Wilderness Society, Defenders of Wildlife, New Mexico Wilderness Alliance, Western Environmental Law Center	SEDDsupp20132	3.6.1, 3.7.23, 3.15.15.1, 3.1.19, 3.15.24.2, 3.2.2, 3.14.1, 3.2.2.4, 3.2.2.3, 3.2.2.1

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
The Wilderness Society, Natural Resources Defense Council, Defenders of Wildlife, Sonoran Institute, Wild Utah Project, New Mexico Wilderness Alliance, Tucson Audubon Society, Audubon Wyoming, Friends of Ironwood Forest, Arizona Wilderness Coalition, Southern Utah Wilderness Alliance, California Wilderness Coalition, Nevada Conservation League and Education Fund, Nevada Wilderness Project, Audubon New Mexico, Soda Mountain Wilderness Council, Center for Native Ecosystems, Western Environmental Law Center, Californians for Western Wilderness, Gila Resources Information Project, National Audubon Society, San Luis Valley Ecosystem Council, Sierra Club-California, Gila Conservation Coalition	SEDD11811	3.14.1, 3.11.2, 3.8.1, 3.8.2, 3.8.5, 3.8, 3.8.3, 3.8.4, 3.11.3, 3.14.2, 3.15.13.1, 3.15.13.4, 3.15.13.7, 3.2.2, 3.12, 3.15.9.1, 3.15.9.2, 3.15.9.6, 3.6.4, 3.7.3, 3.15.24.5, 3.14.7, 3.14.8, 3.7.1, 3.17.5, 3.2.1, 3.2.2.4, 3.15.15.4, 3.15.9.3, 3.15.9.4, 3.15.9.5, 3.15.9.7, 3.15.23.3, 3.2.3, 3.15.12.1, 3.15.14.1, 3.15.14.12, 3.15.10.6, 3.15.11.7, 3.15.11.12, 3.4.1, 3.15.12.2, 3.15.24.2, 3.15.13.6, 3.15.24.6, 3.15.24.7, 3.15.11.6, 3.15.10.2, 3.15.10.8, 3.15.7.2, 3.15.10.5, 3.3.1, 3.3.2, 3.7.12, 3.7.5, 3.15.13.2, 3.15.18.10, 3.15.19.8, 3.1, 3.13, 3.1.6, 3.7.15, 3.7.11, 3.7.10, 3.7.14, 3.15.11.10, 3.7.7, 3.18.1
The Wilderness Society, Natural Resources Defense Council, Defenders of Wildlife, Sonoran Institute, Wild Utah Project, New Mexico Wilderness Alliance, Tucson Audubon Society, Audubon Wyoming, Friends of Ironwood Forest, Arizona Wilderness Coalition, Southern Utah Wilderness Alliance, California Wilderness Coalition, Nevada Conservation League and Education Fund, Nevada Wilderness Project, Audubon New Mexico, Soda Mountain Wilderness Council, Center for Native Ecosystems, Western Environmental Law Center, Californians for Western Wilderness, Gila Resources Information Project, National Audubon Society, San Luis Valley Ecosystem Council, Sierra Club-California, Gila Conservation Coalition	SEDD11811b	3.14.6, 3.4.1, 3.12, 3.8, 3.2.1, 3.2.2, 3.17.4, 3.17.5, 3.17.6, 3.5.1, 3.13, 3.18.3, 3.7.10, 3.7.12, 3.7.15, 3.7.16, 3.7.14, 3.7.3, 3.7.17, 3.7.4, 3.19, 3.4.2, 3.6.3.1, 3.15.15.5, 3.14.1, 3.14.2, 3.7.9, 3.7.13, 3.15.13.4, 3.7.5, 3.7.6, 3.7.1, 3.18.1
The Wilderness Society, Nevada Wilderness Project, Defenders of Wildlife, Sierra Club	SEDDsupp20138	3.6.1, 3.15.11.10, 3.1.12, 3.15.9.2, 3.15.9.4, 3.1.14, 3.1.15, 3.15.13.9, 3.1.17, 3.1.18, 3.15.11.5, 3.7.21, 3.15.24.2, 3.8, 3.14.1, 3.7.23, 3.6.3.3, 3.2.2.1, 3.15.13.2, 3.7.22
The Wilderness Society, Rocky Mountain Wild, Colorado Environmental Coalition, Rocky Mountain Recreation Institute, Audubon Colorado, High Country Citizen's Alliance	SEDDsupp20131	3.6.1, 3.14.1, 3.15.13.5, 3.15.15.1, 3.15.24.2, 3.8, 3.2.2.4, 3.2.2, 3.2.2.1, 3.2.2.3, 3.15.13.3, 3.7.23
The Wilderness Society, Southern Utah Wilderness Alliance, Wild Utah Project, Grand Canyon Trust	SEDDsupp20134	3.6.1, 3.7.3, 14.7, 3.1.22, 3.15.13.4, 3.15.10.4, 3.2.3, 3.1.23, 3.1.24, 3.15.24.2, 3.16.1, 3.2.2.4, 3.2.2, 3.2.2.1, 3.2.2.3

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
The Wildlands Conservancy	SEDDsupp20164	3.14.1, 3.17.1, 3.17.5, 3.14.6, 3.15.13.3, 3.14.2, 3.2.2.3, 3.6.4, 3.17.4, 3.17.6, 3.2.2, 3.2.2.4, 3.2.5, 3.11.2, 3.2.2.1, 3.7.15, 3.8.2
The Wildlands Conservancy	SEDD11775	3.16.1, 3.14.2, 3.2.1, 3.17.4, 3.17.5, 3.17.6, 3.2.2, 3.9, 3.2.2.1, 3.14.1, 3.11.2, 3.15.24.2, 3.8, 3.7.3, 3.11.1, 3.17.1
The Wildlands Conservancy	SEDD11778	3.16.1, 3.17.1, 3.17.5, 3.14.2, 3.2.1, 3.17.4, 3.17.6, 3.2.2, 3.9, 3.2.2.1, 3.6.1, 3.6.4, 3.14.1, 3.11.2, 3.15.24.2, 3.7.3, 3.11.1
The Wildlands Conservancy	Solar_032	3.6.4, 3.15.14.1, 3.6.1
The Wildlands Conservancy	Solar_IW_006	3.7.18, 3.4.2, 3.14.8, 3.17.4, 3.14.2, 3.1.5, 3.1.6, 3.1.7, 3.15.24.7, 3.2.2, 3.17.1
The Wildlands Conservancy	SolarS_PD_08	3.14.5, 3.17.5, 3.1.5, 3.14.2, 3.14.1, 3.8.5, 3.7.19
Thea, Kaz	SEDD10247	3.2.5, 3.1.5, 3.1.7, 3.1.12
Theodore Roosevelt Conservation Partnership	SEDD11745	3.14.1, 3.14.2, 3.7.11, 3.15.5.1
Theodore Roosevelt Conservation Partnership	Solar_SL_001	3.14.1, 3.7.15, 3.16.1, 3.6.1, 3.2.2, 3.17.5, 3.6.3.3, 3.1, 3.15.24.9, 3.7.5, 3.13
Theodore Roosevelt Conservation Partnership, National Wildlife Federation, Trout Unlimited, Sportsmen Conservation Project, Sportsmen for Responsible Energy Development	SEDDsupp20181	3.6.1, 3.11.2, 3.12, 3.3.2, 3.2.2, 3.2.2.1, 3.2.2.3, 3.14.1, 3.7.3, 3.7.5, 3.15.11.5, 3.8, 3.7.12, 3.18.3, 3.15.11.1, 3.15.13.4, 3.1, 3.15.24.8, 3.7.11, 3.15.20.4, 3.15.5.1, 3.15.9.1, 3.1.5, 3.8.2, 3.17.4, 3.7.7, 3.11.3, 3.1.15, 3.1.16
Wilderness Society, Sonoran Institute, Sierra Club, Grand Canyon Chapter, Arizona Wilderness Coalition, Tucson Audubon Society, Friends of Ironwood Forest, Defenders of Wildlife, Sky Island Alliance, Grand Canyon Wildlands Council, Natural Resources Defense Council, Soda Mountain Wilderness Council, Sierra Treks	SEDD11715	3.2.3, 3.15.9.1, 3.15.9.2, 3.15.24.6, 3.15.9.5, 3.15.7.1, 3.15.10.4, 3.15.14.5, 3.15.10.5, 3.15.10.3, 3.15.10.6, 3.15.10.8, 3.15.9.3, 3.15.7.3, 3.15.23.4, 3.2.1, 3.17.5, 3.15.23.1, 3.15.14.12, 3.15.11.11, 3.15.7.6, 3.15.12.1, 3.15.13.4, 3.15.13.8, 3.5.1, 3.14.2, 3.2.2, 3.7.18, 3.2.2.4, 3.8, 3.7.3, 3.2.2.3, 3.15.13.3, 3.15.11.6, 3.7.22, 3.7.16, 3.2.2.1, 3.15.18.2, 3.1.1, 3.1.2, 3.1.3, 3.14.1, 3.15.14.7, 3.15.9.4, 3.15.10.2, 3.19, 3.15.13.9, 3.12, 3.15.9.6, 3.3.1

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Wilderness Society, Wild Utah Project, Southern Utah Wilderness Alliance, Grand Canyon Trust, Center for Native Ecosystems, Sierra Club, Natural Resources Defense Council, Soda Mountain Wilderness Council, Sierra Treks	SEDD11719	3.2.3, 3.15.9.5, 3.15.7.1, 3.15.10.4, 3.15.10.5, 3.15.14.5, 3.15.10.3, 3.15.9.3, 3.15.7.3, 3.15.23.4, 3.15.7.5, 3.15.23.1, 3.15.14.12, 3.15.11.1, 3.15.13.3, 3.15.13.4, 3.15.7.6, 3.15.12.1, 3.15.13.8, 3.2.1, 3.17.5, 3.5.1, 3.13, 3.15.14.13, 3.2.2, 3.7.18, 3.2.2.4, 3.1.22, 3.1.23, 3.1.24, 3.15.9.1, 3.15.24.6, 3.15.7.8, 3.8, 3.7.3, 3.15.9.2, 3.5.3, 3.15.22.1, 3.15.11.10, 3.14.1, 3.15.7.2, 3.15.13.9, 3.15.9.4, 3.14.2, 3.12, 3.15.9.6
The Wilderness Society, Western Environmental Law Center, Nevada Wilderness Project, Southern Utah Wilderness Alliance, WildEarth Guardians, Soda Mountain Wilderness Council, Colorado Environmental Coalition, Rocky Mountain Wild, Audubon Colorado, Sierra Club, Defenders of Wildlife, Sonoran Institute, Arizona Wilderness Coalition, Natural Resources Defense Council, National Audubon Society	SEDDsupp20111	3.6.1, 3.2.2.4, 3.7.12, 3.2.2.3, 3.7.22, 3.7.7, 3.7.14, 3.7.20, 3.3.2, 3.7.3, 3.15.13.1
Wilderness Society, Center for Native Ecosystems, Biodiversity Conservation Alliance, Rocky Mountain Recreation Initiative, Colorado Wild, Wild Connections, High County Citizens' Alliance, Colorado Environmental Coalition, Audubon Colorado, Natural Resources Defense Council, Sierra Club, Soda Mountain Wilderness Council, Sierra Treks	SEDD11716	3.2.3, 3.15.9.5, 3.15.7.1, 3.15.10.4, 3.15.10.5, 3.15.10.3, 3.15.9.3, 3.15.24.6, 3.18.3, 3.15.23.1, 3.15.14.5, 3.15.11.11, 3.15.11.6, 3.5.1, 3.2.1, 3.17.5, 3.2.2, 3.2.2.4, 3.2.2.3, 3.15.13.3, 3.1.8, 3.1.9, 3.1.1, 3.1.11, 3.15.13.4, 3.15.13.9, 3.8, 3.7.3, 3.15.18.4, 3.15.11.10, 3.15.13.5, 3.14.1, 3.15.2.4, 3.14.2, 3.8.3, 3.12, 3.15.9.1, 3.15.9.2, 3.15.9.4, 3.15.9.6, 3.15.24.13
Wilderness Society, The Center for Biological Diversity, Defenders of Wildlife, Sierra Club, Toiyabe Chapter, National Parks Conservation Association, Natural Resources Defense Council, Soda Mountain Wilderness Council, Sierra Treks	SEDD11717	3.2.3, 3.15.9.5, 3.5.1, 3.1.18, 3.15.13.9, 3.15.12.2, 3.15.9.3, 3.15.9.4, 3.15.7.1, 3.15.10.4, 3.15.10.5, 3.15.10.3, 3.15.7.3, 3.15.23.4, 3.15.23.1, 3.15.11.11, 3.15.7.6, 3.15.12.1, 3.15.13.4, 3.2.1, 3.17.5, 3.2.2, 3.7.18, 3.2.2.4, 3.15.11.6, 3.2.2.1, 3.1.13, 3.15.18.2, 3.1.12, 3.15.24.14, 3.15.9.7, 3.8, 3.7.3, 3.15.9.1, 3.15.9.2, 3.15.9.6, 3.15.13.3, 3.15.13.5, 3.15.11.5, 3.15.7.4, 3.15.15.7, 3.14.1, 3.1.14, 3.15.24.15, 3.15.11.3, 3.1.15, 3.14.2, 3.12, 3.7.5, 3.5.3, 3.15.24.16, 3.1.16, 3.1.17, 3.15.11.8, 3.15.10.8, 3.15.11.10, 3.15.7.8

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Wilderness Society, New Mexico Wilderness Alliance, Defenders of Wildlife, Audubon New Mexico, Gila Resources Information Project, Gila Conservation Coalition, Western Environmental Law Center, Southwest Environmental Center, Upper Gila Watershed Alliance, Sierra Club, Natural Resources Defense Council, Soda Mountain Wilderness Council, Sierra Trek	SEDD11718	3.2.3, 3.15.9.5, 3.15.9.1, 3.15.7.1, 3.15.10.4, 3.15.10.5, 3.15.10.3, 3.15.9.3, 3.15.7.3, 3.15.23.4, 3.15.23.1, 3.15.13.3, 3.15.13.4, 3.15.11.11, 3.15.7.6, 3.15.12.1, 3.5.1, 3.2.1, 3.17.5, 3.2.2, 3.7.18, 3.2.2.4, 3.2.2.3, 3.1.2, 3.2.2.1, 3.15.18.2, 3.1.19, 3.1.21, 3.15.9.2, 3.15.9.6, 3.15.9.7, 3.19, 3.15.13.2, 3.15.18.8, 3.8, 3.7.3, 3.1.9, 3.14.1, 3.14.2, 3.12, 3.15.9.4, 3.15.24.6
Thomasian, Gary	SEDD11799	3.16.1, 3.2.3, 3.17.1
Thompson, Debra	SEDDsupp20167	3.6.1
Thompson, Matthew	SEDD11287	3.2.3
Thompson, Thurston	SEDD10909	3.2.5
Thomson, Jennifer	SEDD10094	3.16.2, 3.18.3, 3.17.1
Thoresen, James	SEDDsupp20121	3.16.1
Thorpe, Kristina	SEDD11436	3.2.5
Tidd, Barbara	SEDDsupp20026	3.17.1
Tidd, Charles	Solar_AL_002	3.16.3, 3.17.1, 3.18.3
Timin, Mitchell	SEDD10074	3.15.9.1
Tipps, Ronald	SEDD11660	3.16.1
Tocci, Carmine	SEDD10855	3.16.1
Todryk, Lawrence	SEDD11022	3.16.1
Toker, Rachel	SEDD10232	3.2.3, 3.14.1, 3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5
Tolley, Mark	SEDD10576	3.2.3
Tonopah Area Coalition	SEDD11884	3.14.1, 3.11.2, 3.11.3, 3.8, 3.5.1, 3.17.5, 3.8.3, 3.1.3, 3.12, 3.1.2, 3.1.1, 3.14.2, 3.2.2.1, 3.3.2, 3.2.2.4
Toscani, Olive	SEDDsupp20161	3.15.20.6, 3.17.1, 3.17.6, 3.15.21.2, 3.17.5, 3.2.2, 3.15.13.6, 3.15.10.4, 3.15.18.5, 3.6.2, 3.15.20.2, 3.2.3, 3.15.22.6, 3.18.3, 3.15.24.12, 3.7.2
Toto, Michael	SEDD11448	3.16.1
Tourism Economics Commission	SEDDsupp20096	3.15.20.4, 3.15.20.6, 3.17.1, 3.17.2, 3.17.5
Town of Saguache, Colorado	SEDD10121	3.7.2.1
Town of Springdale	SEDD11847	3.16.1, 3.2.5, 3.2.3, 3.17.5
Townsend, Cherie	SEDD11444	3.2.5
Travis, Donna	SEDD11159	3.16.1
Travis, Terence	SEDD10877	3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5
Trecartin, Judi	SEDD11083	3.16.1
Trejo, Trish	SEDD11064	3.2.3, 3.1.7, 3.1.5, 3.1.12, 3.1.21
Trembly, Dennis	SEDD11570	3.16.1
Trent, Bryan	SEDD10834	3.2.5
Tri-State Generation and Transmission Association	SEDD11739	3.14.2
Trout Unlimited	SEDD11817	3.2.3, 3.11.2, 3.11.3, 3.15.11.11, 3.15.5.3, 3.6.4, 3.14.8, 3.7.3, 3.14.1, 3.14.2, 3.17.5, 3.15.9.1, 3.15.9.2, 3.15.9.4, 3.15.9.5, 3.8

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Troutman, Russell	SEDD10106	3.14.2
Trujillo, Janette	SolarS_017	3.17.4
Trujillo, Michele	SolarS_AL_16	3.15.20.7, 3.15.21.2, 3.15.18.10
Trujillo, Mike	SEDDsupp20182	3.1.8, 3.6.3.2, 3.15.22.2, 3.15.9.1, 3.15.9.2, 3.15.23.3, 3.15.20.2, 3.15.20.1, 3.17.1, 3.7.2, 3.7.2.1
Turner, Michael	Solar_IW_025	3.18.3
Turner, Phoebe	SEDD10851	3.18.3
Turnquist, Martha	SEDD10083	3.16.1
Tusinac, Michele	SEDD10783	3.16.1
Twerdochlib, Orysia	SEDD11175	3.2.5
Twohig, John	SEDD10828	3.18.3
Tyler, William	SEDD11852	3.16.2
U.S. Army Corps of Engineers	SEDD11785	3.15.9.3, 3.19
U.S. DOI, Fish and Wildlife Service	Solar_057	3.15.13.4, 3.15.13.7, 3.19, 3.15.24.2, 3.14.6, 3.3.2, 3.15.11.1, 3.14.1, 3.7.14, 3.7.3, 3.7.5, 3.2.2.1, 3.15.13.1, 3.7.22, 3.1.4, 3.19, 3.2.5, 3.15.13.8, 3.1.5, 3.1.6, 3.1.7, 3.11.1, 3.5.3, 3.5.1, 3.15.10.6, 3.15.13.9, 3.5.6, 3.1.8, 3.1.9, 3.1.1, 3.1.11, 3.15.13.3, 3.1.17, 3.1.23, 3.7.7, 3.3.1, 3.2.2, 3.15.10.1, 3.15.13.2, 3.2.2.3, 3.15.7.6, 3.8.2, 3.18.3, 3.1.12, 3.7.15, 3.17.5, 3.8, 3.15.11.4, 3.15.10.5, 3.6.4
U.S. DOI, National Park Service	Solar_056a	3.1.5, 3.1.6, 3.1.21, 3.1.22, 3.1.23, 3.1.24, 3.15.13.3, 3.15.9.4, 3.19, 3.15.9.2, 3.15.24.6, 3.13, 3.15.16.3, 3.15.16.2, 3.7.12, 3.2.5, 3.19, 3.7.15, 3.3.1, 3.15.2.2, 3.15.5.3, 3.15.9.6, 3.1.7, 3.5.1, 3.15.15.10, 3.15.7.1, 3.15.7.8, 3.15.9.1, 3.15.14.5, 3.15.16.5, 3.15.16.1, 3.15.24.12, 3.18.3, 3.15.15.3, 3.12, 3.1.1, 3.15.2.4, 3.7.21, 3.15.15.8, 3.1.12, 3.15.15.2, 3.7.14, 3.15.16.6, 3.1.13, 3.1.14, 3.1.15, 3.1.16, 3.1.17, 3.15.15.9
U.S. DOI, National Park Service	Solar_056b	3.3.1, 3.15.10.6, 3.15.15.6, 3.15.24.2, 3.15.24.5, 3.19, 3.15.5.1, 3.15.15.3, 3.6.4, 3.15.13.2, 3.15.15.4, 3.2.5, 3.7.5, 3.15.14.9, 3.15.16.4, 3.15.16.2, 3.15.20.4, 3.15.22.6, 3.1.7, 3.7.3
U.S. DOI, National Park Service	SolarS_047	3.6.1, 3.2.2.1, 3.14.1, 3.2.5, 3.7.22, 3.2.2.2, 3.7.3, 3.6.4, 3.3.2

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
U.S. Environmental Protection Agency	SEDD11862	3.6.4, 3.2.1, 3.2.2, 3.8.5, 3.8.3, 3.6.3.1, 3.6.3.2, 3.17.5, 3.6.1, 3.11.2, 3.11.3, 3.14.8, 3.8, 3.17.1, 3.17.2, 3.7.3, 3.5.1, 3.7.14, 3.4.2, 3.15.24.2, 3.15.24.7, 3.15.9.2, 3.15.9.4, 3.15.9.7, 3.15.24.6, 3.15.13.3, 3.15.13.4, 3.15.13.8, 3.3.1, 3.15.9.3, 3.15.12.3, 3.15.7.7, 3.15.10.6, 3.15.10.8, 3.1.9, 3.12, 3.15.9.1, 3.1.12, 3.15.14.2, 3.15.14.4, 3.15.14.5, 3.15.14.12, 3.6.3.3, 3.7.6, 3.6.2, 3.15.19.6, 3.14.6, 3.15.19.11, 3.15.21.2, 3.15.21.1, 3.15.21.3, 3.15.20.2, 3.15.20.5, 3.15.20.9, 3.17.4, 3.2.2.1, 3.14.2
U.S. Environmental Protection Agency, Region 9	SEDDsupp20144	3.2.1, 3.7.11, 3.8, 3.15.9.3, 3.2.2.2, 3.5.4, 3.15.9.4, 3.1.12, 3.15.9.7, 3.15.14.5, 3.6.1, 3.2.2.1, 3.15.23.1, 3.15.14.10, 3.15.21.2, 3.15.21.3, 3.15.24.2, 3.14.6, 3.17.5, 3.6.2, 3.7.3, 3.1.14, 3.19, 3.11.2, 3.11.3
Ulmer, Vic	SEDD10847	3.2.1
Ultican, Lanna	SEDD10335	3.16.1
US DOI, Fish and Wildlife Service	SolarS_046	3.7.22, 3.19, 3.7.13, 3.3.1, 3.7.3, 3.2.2.3, 3.15.13.3, 3.15.13.9, 3.2.2, 3.7.14, 3.3.2, 3.8, 3.7.18, 3.8.2, 3.1.7, 3.19, 3.15.13.8, 3.15.13.4, 3.7.23, 3.6.1, 3.15.13.5, 3.1.3, 3.1.4, 3.1.15, 3.1.22, 3.11.2, 3.11.3, 3.7.11, 3.7.15
U.S. DOI, National Park Service	SolarS_050	3.14.1, 3.7.3, 3.6.3.1, 3.15.15.4, 3.15.24.2, 3.17.1, 3.17.5, 3.7.19, 3.2.2.1, 3.11.2, 3.19, 3.7.15, 3.3.1, 3.15.15.3, 3.7.5, 3.7.21, 3.15.14.9, 3.14.2, 3.2.5, 3.8, 3.2.2.2, 3.15.16.4, 3.2.2, 3.7.7, 3.7.23, 3.7.14, 3.6.4, 3.7.22, 3.1.7, 3.1.9, 3.1.1, 3.1.12, 3.1.17, 3.15.13.9, 3.15.14.12, 3.2.1, 3.15.23.1, 3.15.14.5, 3.15.14.11, 3.2.3, 3.15.24.5, 3.15.24.14, 3.14.6, 3.1.5, 3.1.21, 3.15.16.3, 3.15.9.4, 3.15.24.6, 3.15.9.2
Utah Clean Energy	SEDD11840	3.2.3, 3.2.2.4, 3.17.5, 3.14.8, 3.2.6, 3.8, 3.7.14, 3.2.1, 3.12, 3.2.2
Utah State Energy Program	SEDD10007	3.7.2
Vaaler, Jim	Solar_PH_014	3.2.2, 3.1.2
Vaccaro, Terry	SEDD11370	3.16.1
Valdez, Anne	SEDD10641	3.16.2
Valdez, Demetrio	Solar_AL_008	3.1.8
Valdez, Demetrio	SolarS_AL_02	3.16.1, 3.2.2
Valdez, Israel	SEDD10888	3.2.5
Valdez, Olive	Solar_AL_007	3.1.8, 3.16.1
Valdez, Olive	SolarS_AL_03	3.16.1

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Valdez, Olive; Valdez, Demetrio; Valdez, Joseph; Duran, Dora P; Sandoval, Prexedes; Madril, Illegible; Madril, Nasario; Blea, Vicki; Blea, Illegible; Atencio, Candelaria; Illegible; Illegible	Solar_024	3.1.8
Vanderhill, Margo	SEDD11329	3.2.5
Vanderhorst, Michael	SEDD10948	3.18.3
Varner-Sheaves, Donna	SEDD10184	3.2.3
Vasily, Karen	SEDD10598	3.14.1, 3.2.5
Vater, Herbert	SEDD11538	3.16.1
Vatterott, Melissa	SEDD11774	3.16.1, 3.18.3, 3.2.2, 3.14.1, 3.14.3, 3.14.2, 3.2.3
Venable, Gil	Solar_PH_003	3.2.2, 3.14.2, 3.15.15.1, 3.15.11.11, 3.15.13.3, 3.15.11.12, 3.17.3, 3.7.13, 3.5.1, 3.17.4, 3.17.5
Verhelst, Ray	Solar_LV_008	3.16.1, 3.18.3
Vesperman, Gary Blue Energy Corporation	SEDD10041	3.18.1
Vesperman, Gary Blue Energy Corporation	SEDD10042	3.18.1
Vesperman, Gary Blue Energy Corporation	SEDD10043	3.18.1
Vesperman, Gary Blue Energy Corporation	SEDD10044	3.18.1
Vesperman, Gary Blue Energy Corporation	SEDD10045	3.18.1
Vesperman, Gary Blue Energy Corporation	SEDD10046	3.18.1
Vesperman, Gary Blue Energy Corporation	SEDD10047	3.18.1
Vesperman, Gary Blue Energy Corporation	SEDD10048	3.18.1
Vesperman, Gary Blue Energy Corporation	SEDD10049	3.18.1
Vesperman, Gary Blue Energy Corporation	SEDD10050	3.18.1
Vesperman, Gary Blue Energy Corporation	SEDDsupp20009	3.18.1
Vesperman, Gary Blue Energy Corporation	SEDDsupp20010	3.18.1
Vesperman, Gary Blue Energy Corporation	SEDDsupp20011	3.18.1
Vesperman, Gary Blue Energy Corporation	SEDDsupp20012	3.18.1
Vesperman, Gary Blue Energy Corporation	SEDDsupp20013	3.18.1
Vesperman, Gary Blue Energy Corporation	SEDDsupp20039	3.16.2, 3.18.1
Vesperman, Gary Blue Energy Corporation	SolarS_LV_07	3.18.1, 3.16.2
Vincent, Joseph	SEDD10950	3.2.3
Vingo, Patrick	SEDD10665	3.2.3
Vinje, Avonna	SEDD11759	3.2.3
Viviane, Nervo	SEDD11366	3.16.1
Vlasopolos, Anca	SEDD10435	3.2.5
Volk, Karl	SEDD10774	3.2.3
Voorhies, Marilyn	SEDD10518	3.16.1
Vuillemot, Joanne	SEDD10059	3.14.2, 3.14.1
W, Suzanne	SEDD10328	3.18.3
Wade, James	Solar_CC_001	3.1.16, 3.2.1
Wade, Patricia	SEDD10936	3.2.5
Walker, Annie	SEDDsupp20046	3.16.2, 3.14.3, 3.14.1, 3.17.5
Walker, Dan	SEDD10568	3.16.1
Walsh, Christopher	SEDD10623	3.2.2.3
Walsh, John	SEDD11566	3.16.1
Walters, Robyn	SEDD10896	3.16.1
Walters, Sandra	SEDD10189	3.2.3
Walturz, Christine	SEDD11008	3.2.5
Wang, Nancy	SEDD11381	3.14.1, 3.2.3

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Washoe Tribe of NV and CA	SEDD11650	3.6.2, 3.15.19.11, 3.15.15.5, 3.15.19.9, 3.11.1, 3.15.19.10, 3.15.18.6, 3.15.19.3
Watkins, Kevin	SEDD10491	3.2.5, 3.1.7, 3.1.5, 3.1.12, 3.1.21
Watrous, Frank	SEDD10947	3.2.5
Watson, John	SEDD10297	3.2.5, 3.1.5, 3.1.7, 3.1.12, 3.1.21
Watson, Larry	SEDD10717	3.2.5
Watts, Elmer	SolarS_008	3.18.3
Webb, Elizabeth	SEDD10076	3.6.1
Webb, Marie	SEDD10347	3.2.5
Webster, Earlene	SEDD10976	3.2.5
Weeks, Chris	SEDD10790	3.16.1
Weihofen, Susan	SEDD11144	3.2.5
Weinstock, Jerry	SEDD10380	3.16.1
Welke, James	SEDD10098	3.17.1, 3.14.2, 3.18.3
Wellman, Tennyson	SEDD10246	3.2.5
Welsh, Frank	Solar_PH_015	3.17.5, 3.8.1, 3.15.9.2, 3.18.3, 3.18.3, 3.2.2, 3.15.11.5, 3.17.1, 3.12
Western Lands Project	SEDD11844	3.18.3
Western Watersheds Project	SEDD11806	3.17.4, 3.17.5, 3.3.2, 3.17.3, 3.15.14.5, 3.6.4, 3.15.14.3, 3.15.13.3, 3.15.13.4, 3.15.13.6, 3.15.24.7, 3.15.13.7, 3.15.13.9, 3.15.12.2, 3.15.24.6, 3.16.2, 3.15.3.3, 3.15.9.1, 3.15.9.3, 3.15.9.6, 3.9, 3.1.4, 3.15.18.8, 3.1.5, 3.17.1, 3.1.6, 3.1.7, 3.4.1, 3.15.9.4, 3.7.5, 3.15.10.8, 3.1, 3.13, 3.3.1, 3.15.16.1, 3.15.10.5, 3.15.25, 3.15.11.9, 3.15.24.10, 3.1.2, 3.1.3, 3.15.9.2, 3.15.18.7, 3.1.12, 3.1.13, 3.1.14, 3.1.15, 3.1.16, 3.1.17, 3.1.18, 3.15.13.5, 3.15.24.14, 3.14.8, 3.18.3, 3.1.22, 3.15.18.10, 3.1.23, 3.5.3, 3.19, 3.5.1, 3.1.24, 3.2.2.3, 3.7.22
Western Watersheds Project	SEDDsupp20099	3.9, 3.2.2.3, 3.14.7, 3.17.4, 3.14.8, 3.6.4, 3.15.13.4, 3.2.1, 3.7.22, 3.15.13.9, 3.15.13.3, 3.3.2
Western Watersheds Project	SEDDsupp20100	3.18.3
Western Watersheds Project	SEDDsupp20101	3.18.3
Westfall, Rick, Westfall Industries	Solar_TU_006	3.6.1, 3.2.4, 3.7.2
Whitacre, D.A.	SolarS_016	3.2.2.1, 3.7.18
Whitcomb, Paulette	SEDD10657	3.2.3
White, Dave	SEDD10504	3.14.1
Whitman, Lee	SEDD10036	3.17.1
Wible, Karen	SEDD11093	3.2.5
Wild Utah Project	Solar_SL_003	3.1.23, 3.17.5, 3.17.1, 3.1.22, 3.1.24, 3.15.9.1, 3.15.9.2, 3.14.2, 3.14.1, 3.2.2.4
Wiley, Carol	Solar_BA_005	3.11.2, 3.1.5, 3.14.1, 3.1.6, 3.2.1
Wilhems, Carol	SEDD10424	3.2.5
Wilkinson, Patricia	SEDD10713	3.2.3

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Williams, Angie	SEDD10772	3.18.3
Williams, Debbie	SEDD10340	3.16.1
Williams, Marylin	SEDD10097	3.14.2
Williamson, Jeff	SEDD10017	3.6.1
Wilp, Ludger	SEDD11368	3.18.3
Wilshire, Howard	SEDD11836	3.12, 3.19, 3.7.1
Wilson, Jane	SEDD10800	3.2.5, 3.17.1
Wilson, Polly	SEDD10701	3.2.3, 3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5
Winchell, Joan	SEDD10193	3.2.3
Winfrey, Harley	SEDD10799	3.2.3
Winkler, Linda	SEDD11347	3.16.1
Winston, Yvette	SEDD11800	3.2.5
Wintch, Mark	SEDDsupp20061	3.1.24, 3.19, 3.15.3.5
Winter, Blake	SEDD10900	3.2.3
Wittman, Charles	SEDD11795	3.2.3
Wolfe, Charles	SEDD10995	3.2.3
Wolfhart, Jake	SEDD10194	3.16.1
Wolfhart, Jake	SEDD11438	3.16.1
Wollman, Isaac	SEDD10607	3.16.1
Womack, Joyce	SEDD10628	3.2.5, 3.17.1, 3.18.3
Wood, Erik	SEDD10802	3.18.3, 3.16.1
Wood, Joyce	SEDD11726	3.6.1, 3.2.5
Woodall, Sandra	SEDD11127	3.17.1
Woods, Daniel	SEDD11482	3.16.1
Woolman, Marcia	SEDD11261	3.2.5
Woolsey, Genevieve	SEDD10490	3.2.5
Wright, Donald	SEDD11245	3.14.1
Wurts, Teresa	SEDD11417	3.2.5
Wynne, Diane	SEDD10889	3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5
Yang, Lily	SEDD11142	3.2.5
Yorkowitz, Allan	SEDD11407	3.18.3
Young, Alan	SEDD10887	3.2.3
Young, Irwin	Solar_AL_023	3.15.20.1, 3.15.20.2, 3.18.3, 3.18.3, 3.16.1, 3.7.2, 3.15.15.1
Young, Jessica	SEDD10222	3.2.3
Young, JoEllen	SEDD10209	3.14.1
Young, Nikki	SEDD11682	3.2.3
Ysleta del Sur Pueblo	SolarS_005	3.18.3, 3.15.19.6
Yung, Jill, of Paul Hastings LLP on behalf of Solar Energy Industries Association and the Large-Scale Solar Association	SEDDsupp20178	3.6.1, 3.5.4, 3.14.3, 3.11.2, 3.18.3, 3.7.3, 3.2.1, 3.14.1, 3.7.22, 3.15.9.6, 3.15.18.10, 3.7.21, 3.2.6, 3.2.2, 3.15.13.3, 3.15.18.2, 3.8, 3.8.2, 3.8.3, 3.8.5, 3.5.6, 3.7.11, 3.7.15, 3.14.6, 3.15.21.2, 3.1.7, 3.15.9.1, 3.7.4, 3.1.3, 3.15.18.7, 3.15.1.2, 3.15.19.2, 3.15.19.3, 3.15.15.10, 3.1.8, 3.15.15.2, 3.1.9, 3.1.12, 3.1.19
Yurchuck, Alan and Ruth	SEDD10283	3.14.1, 3.1.5, 3.1.7, 3.1.12, 3.1.21, 3.2.5
Zarate, Juan	Solar_EC_004	3.7.2
Zausner, Tobi	SEDD10941	3.16.1

TABLE 3-1 (Cont.)

Organization(s)/Commentor(s)	Comment Document ID Number ^a	Comment Response ID Number(s)
Zehring, LaVerne	SEDD11432	3.2.3
Ziller-Caritey, Barbara	SEDD10443	3.2.3
Zion National Park	SEDD11822	3.2.5
Zissu, Thomas	SEDD11234	3.2.3
Zizelis, Nicholas	SEDD10760	3.18.3
Zorn, Gretta	SEDD11308	3.2.5
Zuberi, Parvez	SEDD11489	3.16.1
Zucchi, Carlo	SEDD11199	3.17.5
Zucker, Marguery	SEDD10712	3.2.5
Zurcher, Naomi	SEDD11512	3.16.1, 3.2.3

^a See Table 1-1 for an explanation of the scheme used to catalog and identify comment documents.

1
2
3

4 CAMPAIGNS

Twelve organizations held campaigns regarding solar energy development through which their constituents were able to submit standardized letters. Some campaign letters were submitted as a single form letter, with signatures attached indicating support for the campaign. For other campaigns, individuals modified a standard letter provided by the organization. Table 4-1 lists the separate organizations whose members submitted campaign letters on the Draft Solar PEIS and the Supplement to the Draft Solar PEIS, along with the comment response numbers assigning applicable responses for the concerns raised in each campaign.

Some commentors submitted a form letter through the Solar PEIS Project Web site but did not identify themselves with a particular organization. In Table 4-1, this campaign is listed under Organization not identified. Each of the campaign letters is reproduced below.

4.1 CAMPAIGN LETTERS SUBMITTED FOR THE DRAFT SOLAR PEIS³

4.1.1 National Wildlife Federation Action Fund, Comment Document Numbers 11509 and 11510

Make Solar “Smart from the Start” to Protect Wildlife Habitat. The recently released Solar Energy Draft Programmatic Environmental Impact Statement is an important step forward for solar energy development in the U.S. because it encourages renewable energy development while protecting wildlife. The designation of 24 Solar Energy Zones is one important way that the Solar Energy Draft PEIS accomplishes this goal. The Solar Energy Draft PEIS can be made even stronger by limiting solar energy development to only the 24 Solar Energy Zones. While a process should be established to formally identify and review additional solar zones, until then additional public land outside the 24 zones should not be developed because: (1) the need for additional space for development has not been demonstrated and (2) the additional land has not been thoroughly examined for possible wildlife conflicts. I also encourage the Department of the Interior to make sure that in cases where crucial wildlife habitats for big game and sage grouse overlap with Solar Energy Zones, these critical habitat areas are also placed off-limits to development. I believe that solar energy must be developed quickly in the United States; however, the best way to get solar energy projects built quickly is to plan them responsibly from the start. Please take these steps to make sure that America's solar industry is wildlife-friendly. With a strong Solar Energy PEIS, we can ensure that we set the best precedent for solar energy development in our country. See Attachment.

³ Some individuals modified the template campaign letters to reflect or emphasize various concerns. These modifications were reviewed, and additional comment responses were assigned for the campaign if applicable.

1 **TABLE 4-1 Organizations Whose Members Submitted Campaign Letters on the Draft Solar PEIS**
 2 **or the Supplement to the Draft Solar PEIS**

Organization	Comment Document ID Number ^a	Number of Participants in Campaign	Comment Response ID Number(s)
<i>Campaign Letters Submitted for Draft Solar PEIS</i>			
National Wildlife Federation Action Fund	11509 11510	10,600	3.14.1, 3.8, 3.2.2.3, 3.2.3
The Wilderness Society	Solar_034	16,000	3.16.1, 3.18.3, 3.2.1, 3.8, 3.6.1
Sierra Club	Solar_053	2,800	3.16.1, 3.14.1, 3.8, 3.3.1
National Resources Defense Council (NRDC)	Solar_054	10,300	3.16.1, 3.2.3, 3.14.2, 3.4.1, 3.14.1, 3.1.5, 3.2.2.1, 3.1.6, 3.8
Defenders of Wildlife	Solar_055	39,300	3.2.3, 3.16.1, 3.14.1, 3.8, 3.1.5, 3.2.2.1, 3.1.6, 3.15.11.1, 3.15.13.1, 3.15.13.3, 3.3.2, 3.15.9.1, 3.2.2.3
National Parks Conservation Association (NPCA)	Solar_058	11,400	3.2.3, 3.2.5, 3.14.1, 3.1.5, 3.1.7, 3.1.12
Organization not identified	Submitted through the Web site as multiple form letters	508	3.14.1, 3.1.7, 3.1.5, 3.1.12, 3.1.21, 3.2.5
<i>Campaign Letters Submitted for Supplement to Draft Solar PEIS</i>			
National Wildlife Federation	20122	15,000	3.6.1, 3.8
Defenders of Wildlife	20135	35,600	3.6.1, 3.1.5, 3.1.6, 3.14.1, 3.2.2.3, 3.17.5, 3.15.11.10
Sierra Club	SolarS_022	8,900	3.16.1, 3.11.2, 3.11.3, 3.14.1, 3.6.1, 3.2.2.3, 3.7.22
National Parks Conservation Association	SolarS_023	32,700	3.2.5, 3.2.3
National Resources Defense Council	SolarS_024	12,500	3.16.1, 3.14.2
The Wilderness Society	SolarS_028	26,300	3.16.1, 3.17.1, 3.6.1, 3.14.2, 3.2.2.4

^a See Table 1-1 for an explanation of the scheme used to catalog and identify comment documents.

1 **4.1.2 The Wilderness Society, Comment Document Number Solar_034**
2

3 As part of a clean energy future that includes energy efficiency, conservation, and rooftop
4 solar panels, I support environmentally responsible solar projects on our public lands. If done
5 right, renewable energy development on public lands can both meet our climate and clean energy
6 needs and protect our beloved wildlands and crucial wildlife habitat.
7

8 We have an historic opportunity to get solar development right on public lands, and the
9 long-term plan for solar now under development will play a critical role. We zone uses in our
10 towns and neighborhoods, and we should do the same for our public lands. To ensure that solar
11 development on public lands is really smart from the start, I recommend that:
12

- 13 • The BLM focus on siting projects properly in areas with the least amount of
14 conflict or potential impacts on sensitive lands and wildlife. Science should
15 guide the agencies decisions. Projects should be limited to these designated
16 “zones;”
17
- 18 • The BLM should NOT open up an additional 21 million acres to development,
19 including wildlands and important wildlife habitat. We simply do not need to
20 develop such large areas and can reevaluate additional lands through a future
21 process;
22
- 23 • The BLM should strongly consider recommendations from local stakeholders
24 to eliminate proposed development areas in sensitive areas from the get-go.
25

26 By moving to a truly smart from the start process, the BLM can ensure that solar development
27 avoids the many conflicts, controversies and impacts that have plagued oil and gas development
28 on public lands. I urge you to take this common-sense approach of focusing on zones that will
29 allow solar development that is faster, cheaper and better for the environment and consumers.
30
31

32 **4.1.3 Sierra Club, Comment Document Number Solar_053**
33

34 I strongly support our nation's need to transition from dirty coal and fossil fuels to clean
35 renewable energy. I also strongly support protection of our public lands. We can do both!
36

37 Please choose the “zones only” alternative for developing solar energy on public lands.
38 This will ensure that we focus solar in places with the fewest possible environmental impacts,
39 and prevent fragmentation of important wildlife habitat and movement corridors.
40

41 Please do not open an additional 22 million acres to solar applications. This will fragment
42 wildlife habitat and put ecosystems and endangered species at risk. Instead, allow careful
43 consideration of new solar zones in the right places by using a location-specific Environmental
44 Impact Statement (EIS) for each proposed new zone.
45

1 Finally, make sure that strong monitoring of wildlife impacts and full mitigation of all
2 environmental impacts are included system-wide.
3
4

5 **4.1.4 Natural Resources Defense Council, Comment Document Number Solar_054** 6

7 Like you, I support a rapid transition for our nation from an economy based on fossil
8 fuels to one that is based on clean energy, and I understand that our public lands will play an
9 important role in making that transition. But if not properly sited and operated, large-scale solar
10 power plants can seriously harm wildlife, wildlands, water supplies and other highly valued
11 resources on our public lands.
12

13 Solar plants must be built in appropriate places, rather than scattered across the landscape
14 if we are to avoid such harms and generate clean energy at a pace and scale necessary to
15 significantly reduce pollution, create new jobs and address the global climate challenge.
16

17 The draft solar programmatic environmental impact statement (PEIS) released by your
18 Department and the Bureau of Land Management will lay the foundation for a long-term
19 program to manage the solar resources of a huge six-state area of the desert Southwest. The
20 preferred alternative identified in the draft statement would allow solar development on over
21 22 million acres. Included in this acreage are extensive areas of the public's lands that are simply
22 inappropriate for solar development, such as more than 1.5 million acres of lands that qualify for
23 designation as part of the National Wilderness Preservation System as well as important wildlife
24 habitats and corridors and other unique and sensitive resources. What's more, the PEIS reveals
25 that this acreage amounts to nearly one hundred times more land than is necessary to meet the
26 region's reasonably foreseeable needs for renewable energy from the sun.
27

28 I urge you to reject the preferred alternative and instead to adopt the solar energy zones
29 alternative analyzed in the PEIS. This alternative would restrict solar power plants to zones
30 designated by the BLM as appropriate for development based on criteria that take into account
31 not just the technological needs of the solar industry, but also the need to direct solar projects to
32 places that have fewer environmental conflicts as well as needed roads and transmission lines.
33 By focusing on places with the best chances for successful projects, the zones alternative would
34 lead to solar development that is faster, cheaper and better for the environment, consumers and
35 project developers. I also urge you to improve this alternative first by excluding inappropriate
36 proposed zones, such as California's proposed Pisgah and Iron Mountain zones. The new
37 program should also include a process for developing additional zones in the future if needed,
38 together with measures that will conserve the already limited water resources of the region and
39 ensure that unavoidable impacts of these projects are fully and permanently mitigated.
40

41 Please choose the solar energy zones alternative to govern future solar development on
42 our public lands so that these very large projects are guided to the most appropriate locations and
43 precious public resources are not sacrificed.
44
45

1 **4.1.5 Defenders of Wildlife, Comment Document Number Solar_055**

2
3 As a supporter of Defenders of Wildlife, I recognize the potential impacts that climate
4 change poses to wildlife worldwide. I also understand the growing energy demand our nation
5 faces. But while I support BLM's attempt to develop renewable energy on our public lands, BLM
6 must work to ensure these projects are developed "smart from the start." Renewable energy
7 development on our public lands should be focused on areas that minimize impacts on wildlife
8 and wildlands so that we can develop this vital energy source quickly and still protect treasured
9 lands and wildlife. The best way for BLM to ensure the protection of wildlife and wild lands—
10 and streamline the approval of new solar-energy projects— is for the agency to adopt a modified
11 solar energy zones alternative in the final Solar Programmatic Environmental Impact Statement
12 (PEIS). BLM should modify the solar energy zones alternative to:

- 13
14 • Include a process to modify, drop, or add zones, as necessary, but only from
15 appropriate areas. It should exclude the Pisgah and Iron Mountain zones
16 California.
17
18 • Ensure compliance with existing BLM wildlife policies, and ensure no net
19 loss of wildlife and improvement in threatened and endangered species habitat
20 where possible.
21
22 • Require proper mitigation for impacts on wildlife, both permanent and
23 temporary, including compensatory mitigation for unavoidable impacts.
24
25 • Promote proper conservation of limited water resources in present and future
26 zones.
27
28 • Ensure that projects that will have a high conflict with wildlife resources do
29 not go forward.
30

31 By modifying the solar energy zones alternative with these critical elements, BLM can
32 ensure that solar energy development on our public lands has a minimal impact on wildlife and
33 that it also helps to streamline approvals for new solar projects. This not only presents a win-win
34 situation for both wildlife and solar energy, but also moves our nation closer to a more secure,
35 energy-independent future. I encourage you to strongly consider adopting a modified version of
36 the solar energy zones alternative in the PEIS. Thank you for your consideration.
37
38

39 **4.1.6 National Parks Conservation Association, Comment Document Number Solar_058**

40
41 We need your help to protect desert tortoises, desert bighorn sheep, and iconic National
42 Parks like Joshua Tree, Death Valley, and Mojave National Preserve in the California Desert.
43

44 We can all agree that we must break our addiction to foreign oil and move to clean,
45 renewable energy. However, many of the solar energy projects being developed and proposed in
46 the California desert are inappropriately sited next to our cherished National Parks and in critical

1 habitat vital to endangered species. The government is preparing an environmental review that
2 will determine which locations on public land in 6 Western states are appropriate for renewable
3 development. The best alternative identified in the review is the zone-only alternative that will
4 restrict development to within specific areas that do not damage our national parks.
5

6 Take action today to encourage responsible energy development and protections for these
7 important places and species!
8

- 9 • Tell Secretary Salazar and Secretary Chu to support renewable energy
10 development in places that DO NOT compromise our National Parks and our
11 efforts to protect threatened and endangered species, such as the desert
12 tortoise.
- 13
- 14 • Let the Secretaries know that you support the Zone-only alternative to balance
15 development and protections for National Parks and natural communities.
- 16
- 17 • Share your voice by stating that solar energy study areas should not negatively
18 impact National Parks, and that areas such as Riverside East, Iron Mountain,
19 and Amargosa Valley should be reconfigured or removed to protect our
20 National Parks and their protected resources.
21

22

23 **4.1.7 Unidentified Organization**

24

25 Once amended, I strongly support the Solar Energy Zone alternative, which would
26 concentrate solar development within parcels of land that avoid needless future conflicts with
27 national park resources and sensitive desert ecology. There are four proposed Solar Energy
28 Zones (SEZ) that threaten our national parks.
29

- 30 • The Riverside East SEZ must be reconfigured to reduce impact on Joshua
31 Tree National Park's wilderness and wildlife corridors.
32
- 33 • The Iron Mountain SEZ must be removed to prevent impacts on Joshua Tree
34 National Park's remarkable scenery and wildlife.
35
- 36 • The Amargosa Valley SEZ must be reduced or reconfigured to reduce
37 negative impact on Death Valley's wilderness and precious water resources,
38 including desert wetlands home to endangered species such as the Devil's
39 Hole Pupfish.
40
- 41 • Similarly, the Red Sands SEZ threatens water resources critical to wildlife and
42 the formation of desert dunes at White Sands National Monument.
43

44 Any proposed solar projects sited within 15 miles of a national park boundary should
45 trigger a consultation with the National Park Service to determine whether the project
46 unacceptably impacts or diminishes national park resources or visitor enjoyment. Finally, it is

1 vital that the BLM include proposed national parks, wilderness areas, and national monuments
2 as high conflict areas for industrial solar development.
3

4 5 **4.2 CAMPAIGN LETTERS SUBMITTED FOR THE SUPPLEMENT TO THE DRAFT** 6 **SOLAR PEIS**

7 8 9 **4.2.1 National Wildlife Federation, Comment Document Number 20122**

10
11 Thank you for supplementing the Bureau of Land Management's draft proposal for siting
12 new large-scale solar projects on public lands in the West. Please improve and finalize this
13 much-needed program and continue to work to establish wildlife-friendly and consistent rules for
14 developing solar energy on our public lands. The Supplement clearly draws on the input received
15 from conservationists and others. Significant improvements to the draft include the commitment
16 to do more research on wildlife impacts, the pledge to make more sensitive areas off limits to
17 development, and the inclusion of additional incentives to drive development to low-conflict
18 solar energy zones. With some additional work to limit development outside the designated
19 zones and provide adequate mitigation for habitat losses, the proposed solar zoning framework
20 will serve as an effective, strategic roadmap to developing the most appropriate solar resources
21 on public lands. The best path going forward will guide solar development to lands with the
22 highest quality solar resource, where the power generated can be delivered easily to consumers,
23 and where there is the lowest potential for conflict with fish, wildlife, access, and other values
24 and uses.
25

26 27 **4.2.2 Defenders of Wildlife, Comment Document Number 20135**

28
29 As a supporter of Defenders of Wildlife and someone who wishes to make solar energy
30 development in the U.S. “smart from the start,” I encourage you to strengthen protections for
31 wildlife and natural resources in the Draft Solar PEIS. First, I commend you for putting a
32 stronger emphasis on solar energy zones—areas identified with few if any wildlife and natural
33 resource conflicts. I encourage you to ensure that projects located in solar energy zones will be
34 prioritized for development. Although the Bureau of Land Management did the right thing by
35 removing some highly sensitive areas from further consideration as zones (the Pisgah and Iron
36 Mountain Zones in California), the agency has left open the possibility that solar development
37 on some of these lands might still occur through the “variance process.” But variances should
38 be extremely limited so that they are only used in rare instances where the conservation benefits
39 are clear and can be documented. Variances should be the exception, not the rule. To protect
40 imperiled species like desert tortoises and bighorn sheep, the agency should exclude areas that
41 have already been deemed unsuitable because of likely wildlife and resource conflicts. America's
42 degraded lands, like brownfields and old mining sites are not now included in most solar zones.
43 They should be. Such areas are appropriate additional lands that should be available for
44 development. By developing degraded areas such as these—rather than more sensitive and
45 ecologically rich sites—we can preserve important wildlife habitat and protect valuable natural
46 resources. America is transitioning from a society reliant on fossil fuels to one built on clean,

1 renewable energy. But to make sure this is truly wildlife-friendly energy development, we must
2 make sure the process is smart from the start by: 1. Supporting solar development in designated
3 solar energy zones--areas where conflicts with wildlife and other important natural resources can
4 be avoided or minimized; 2. Limiting variances for projects outside of zones. Make them the
5 exception, not the rule; and 3. Requiring developers to avoid, minimize and effectively mitigate
6 any unavoidable effects on wildlife by promoting “wildlife-friendly” solar development. I
7 believe the changes listed above will greatly enhance your proposal and better protect America's
8 rich natural heritage. Thank you for considering my comments. ----- Please accept these
9 individuals’ comments with regard to the U.S. Fish and Wildlife Service’s proposed plan and our
10 thanks for your agency’s collaboration in ensuring that the voices of these concerned citizens are
11 heard.

12
13

14 **4.2.3 Sierra Club, Comment Document Number SolarS_022**

15

16 Thank you for the opportunity to comment on the Supplement to the Draft Programmatic
17 Environmental Impact Statement for Solar Energy Development in Six Southwestern States. I
18 am submitting these comments as someone with a strong commitment to developing renewable
19 energy. I believe it is critical we halt climate change and end our dependence on fossil fuels as
20 quickly as possible. However, I also care deeply about preserving our precious Western
21 ecosystems and wild lands.

22

23 I strongly support developing rules to guide solar energy projects on the most appropriate
24 locations on public lands to minimize impacts on wildlife and ecosystems. These rules should be
25 applied to all solar energy applications on public lands, not just those filed after October 28,
26 2011. Your proposal to allow additional projects outside zones (the “Variance Process”) could
27 undermine this entire solar energy program if it is not limited to places with low environmental
28 value. These proposals should meet strict environmental criteria.

29

30 I also commend the BLM for excluding fragile and ecologically important areas from
31 solar development in response to environmental concerns (“Exclusion Areas”). Please expand
32 the Exclusion Areas to include environmentally sensitive areas important to the survival of
33 wildlife species such as: wildlife habitat management areas, desert tortoise connectivity areas,
34 and the entire Ivanpah Valley in both Nevada and California. Thank you for working to balance
35 our need for solar energy with protecting wildlife and habitats on public land.

36

37

38 **4.2.4 National Parks Conservation Association, Comment Document Number SolarS_023**

39

40 I support solar development, but not at the expense of our national parks and
41 conservation heritage. To help ensure parks are protected, I ask that you exclude new solar
42 development on lands within 15 miles of national park units unless the National Park Service
43 determines these lands are suitable for consideration under the ‘variance’ process and can be
44 developed without damaging park resources.

45

1 This precautionary ‘smart from the start’ approach is justified because these lands are
2 critical to the ecological health of park resources and the experience of park visitors.

3
4 Without strong safeguards in place, vast solar energy facilities could potentially be built
5 under the variance process and present the following threats:

- 6
7 • Fragmentation of wildlife corridors crucial to wide-ranging species. Examples
8 include lands on Joshua Tree's north and northeast boundaries that are utilized
9 by Desert Tortoises and connect the park to nearby wilderness areas. Also,
10 allowing solar development in old-growth Joshua Tree woodlands, such as
11 what could happen north of Mojave National Preserve's Clark Mountains and
12 east of the Preserve's New York Mountains should be avoided.
- 13
14 • Harming scenic vistas. By placing solar projects on our national parks'
15 doorsteps, we will negatively affect the experience so many Americans
16 cherish. For instance, industrializing Death Valley's eastern boundary could
17 negatively affect the parks stunning wide open vistas, as well as reduce habitat
18 and water resources for rare and endangered species.

19
20 I thank you for considering my comments and for working to ensure America's national
21 parks and surrounding sensitive lands are protected.

22 23 24 **4.2.5 Natural Resources Defense Council, Comment Document Number SolarS_024**

25
26 Our nation must transition from a dirty fossil fuel-based economy to one that runs on
27 clean energy. But we must ensure that the development of large-scale renewable power plants
28 on our public lands is done right—by protecting our wildlife, wildlands and water resources.

29
30 The Supplement to the draft Solar Energy Development Programmatic Environmental
31 Impact Statement is a step in the right direction and I urge you to follow through on your
32 commitment to zone-based development of large-scale solar projects on the deserts of the
33 Southwest. Guiding solar development to appropriate places is the best way to ensure that the
34 benefits of solar energy are realized while also safeguarding our public wildlands.

35
36 Currently, the solar resources of our public lands are being managed on the same
37 antiquated project-by-project basis that oil and gas resources have been managed. Continuing
38 this scatter-shot approach and permitting these very large projects to be dotted across our public
39 lands is certain to harm sensitive wildlife species and diverse recreational opportunities, and will
40 also lead to costly conflicts, delays and litigation at a time when solar energy is needed to
41 improve our energy security and provide much-needed jobs.

42
43 I commend you for recognizing the need for a better way to develop solar projects, by
44 designating zones that minimize conflicts with wildlife and other resources and providing
45 incentives for projects located in these zones. I also appreciate your recognition of the need to
46 provide limited flexibility to the solar industry for well-sited projects outside zones. Adoption

1 of these and other proposed program components will help protect the unique and sensitive
2 resources of our public lands while providing more certainty to all stakeholders.
3

4 By focusing on the places that have the best chances for success and having a clear plan
5 to deal with potential impacts before they occur, we will be able to move quickly to develop our
6 solar resources. This will enable America to better meet our clean energy demands while also
7 preserving our nation's wildlife, wild lands and other natural treasures. Please continue on the
8 path to finalize a comprehensive and environmentally sound framework for developing solar
9 energy on our public lands in an environmentally sensitive way—as promptly as possible.
10

11 12 **4.2.6 The Wilderness Society, Comment Document Number SolarS_028** 13

14 As part of a clean energy future that includes robust commitments to energy efficiency
15 and conservation, and widespread use of rooftop solar panels, I support environmentally
16 responsible solar projects on our public lands. If done smart from the start, renewable energy
17 development on public lands can both help meet our climate and clean energy needs and protect
18 our beloved wildlands and crucial wildlife habitat.
19

20 We have a historic opportunity to get solar development right on public lands, and the
21 long-term plan for solar now under development, the Supplement to the Draft Solar
22 Programmatic Environmental Impact Statement (PEIS), will play a critical role. I applaud the
23 BLM in responding to recommendations from the public to focus development in pre-screened,
24 low-conflict zones. Overall, the Supplement is a step in the right direction, and most of the
25 elements should be carried through the final plan. However, I am seriously concerned that the
26 revised plan still leaves some wilderness quality lands open for development. To ensure that
27 solar development on public lands is smart from the start, I recommend that:
28

- 29 • The BLM should carry forward most of the revised plan;
- 30
- 31 • The BLM should exclude all Citizens' Wilderness Proposal lands (wilderness
32 quality lands) from development;
- 33 • The BLM should ensure that these large solar projects are built primarily in
34 the zones;
- 35
- 36 • The BLM should provide a 60 day comment period on the final plan to allow
37 public response to additional information in the final plan.
38

39 By focusing on low-conflict zones, the BLM can ensure that solar development avoids
40 the many conflicts, controversies and impacts that have plagued oil and gas development on
41 public lands. I urge you to take this common-sense approach that will allow solar development
42 that is faster, cheaper and better for the environment and consumers.