Supplement to the Draft
Programmatic Environmental Impact Statement for
Solar Energy Development in Six Southwestern States
On the cover:
Typical Solar Fields for Various Technology Types (clockwise from upper left):
Solar Parabolic Trough (Source: NREL/SR-550-32282),
Solar Power Tower (Credit: Sandia National Laboratories. Source: NREL),
Photovoltaic (Credit: Arizona Public Service. Source: NREL), and
Dish Engine (Credit: R. Montoya. Source: Sandia National Laboratories).

Background photo: Parabolic trough facility from an elevated viewpoint
(Credit: Argonne National Laboratory)
In Reply Refer To:
1610 (300)

Dear Reader:

Attached for your review and comment is the Supplement to the Draft Programmatic Environmental Impact Statement (PEIS) for Solar Energy Development in Six Southwestern States (Supplement). This document was prepared by the Bureau of Land Management (BLM) and the Department of Energy (DOE) as co-lead agencies. The BLM and DOE prepared this document in consultation with cooperating agencies and in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended; the Council on Environmental Quality, DOE, and Department of the Interior regulations implementing NEPA (40 CFR Parts 1500-1508, 10 CFR Part 1021, 43 CFR Part 46); and the Federal Land Policy and Management Act of 1976, as amended.

On December 17, 2010, the lead agencies published a Draft PEIS for Solar Energy Development in Six Southwestern States. Public comments were accepted through May 2, 2011, and more than 80,500 comments were received. The lead agencies have thoroughly analyzed the comments and made numerous adjustments to the PEIS in response to this input. The Supplement focuses on modified and new components of the lead agencies’ proposed solar programs and incorporates by reference relevant portions of the Draft PEIS.

Development of this Supplement allows the public an opportunity to evaluate the modified and new elements of the proposed programs and provide input to assist the BLM and DOE decision-making processes. Based on input received on the Draft PEIS and this Supplement, the lead agencies will prepare a Final PEIS and Record(s) of Decision. All comments received on both documents will be responded to in the Final PEIS.

Through the Supplement, the BLM has modified its preferred alternative to emphasize its commitment to the concept of Solar Energy Zones (SEZ). Efforts have been made to ensure that SEZs are not located in high conflict areas, a protocol for establishing new SEZs has been provided, and incentives for projects within SEZs have been outlined. In addition, the BLM has revisited ongoing state-based planning efforts to assure that such efforts could result in the identification of new zones.

While the BLM’s preferred alternative emphasizes the use and creation of SEZs for utility-scale solar energy development, the BLM has also proposed a process that will accommodate responsible development outside of SEZs.
As described in the Draft PEIS, under DOE's proposed action (action alternative), DOE would develop and adopt programmatic environmental guidance that would be used by DOE to further integrate environmental considerations into its analysis and selection of proposed solar projects. DOE has since used the information about environmental impacts provided in the Draft PEIS and other information to develop draft programmatic guidance. DOE has included the draft programmatic guidance in the Supplement for public comment.

Your timely comments on the Supplement will help formulate the Final PEIS. Comments will be accepted for ninety (90) calendar days following the Environmental Protection Agency's publication of its Notice of Availability in the Federal Register. The BLM and DOE can best utilize your comments and resource information submissions if received within the review period. Comments received after the end of the review period will be considered to the extent practicable. We request that your comments be as specific as possible. Comments are more helpful if they reference a section or page number of the Supplement and include suggested changes, additional information sources, or alternative methodologies.

Comments may be submitted electronically using the online comment form available at the project Web site: http://solareis.anl.gov. To facilitate analysis of comments and information submitted, we strongly encourage you to submit comments through the project Web site. Comments may also be submitted by mail to Solar Energy Draft PEIS, Argonne National Laboratory, 9700 S. Cass Avenue—EVS/240, Argonne, Illinois 60439.

Before including your address, phone number, email address, or other personal, identifying information in your comment, be advised that your entire comment — including your personal identifying information — may be made publicly available at any time. While you can ask us in your comment to withhold your personal, identifying information from public review, we cannot guarantee that we will be able to do so.

In addition to written comments, public meetings to take public comments will be announced through local media and Web sites. Public meetings are currently planned for the following locations:

   El Centro, California
   Palm Desert, California
   Phoenix, Arizona
   Las Vegas, Nevada

Copies of the Supplement have been sent to affected Federal, state, and local government agencies and applicable tribal governments. Requests for additional information on the Supplement, including requests for copies of the document, should be directed to Shannon Stewart, BLM Washington Office, by email at shannon_stewart@blm.gov, or by telephone at 202-912-7219; or Jane Summerson, DOE Solar PEIS Document Manager, by email at Jane.summerson@ee.doe.gov, or by telephone at 202-287-6188. You may also visit the Solar Energy Development PEIS Web site at http://solareis.anl.gov.
Thank you for your continued interest in the PEIS for Solar Energy Development in Six Southwestern States. We appreciate the information and suggestions you contribute to the NEPA and planning process.

Sincerely,

[Signature]

Michael D. Nedd
Assistant Director
Minerals and Realty Management
Supplement to the Draft
Programmatic Environmental Impact Statement for
Solar Energy Development in Six Southwestern States

October 2011

Bureau of Land Management
U.S. Department of Energy
## CONTENTS

NOTATION ........................................................................................................................ ix

ENGLISH/METRIC AND METRIC/ENGLISH EQUIVALENTS ................................. xiii

1 INTRODUCTION ..................................................................................................... 1-1

1.1 Overview ........................................................................................................... 1-1

1.2 Summary of Comments .................................................................................... 1-2

1.3 BLM’s Purpose and Need ................................................................................. 1-3

1.4 BLM Decisions To Be Made ............................................................................ 1-5

1.5 Scope of the Analysis ........................................................................................ 1-6

1.5.1 Program Analysis versus SEZ-Specific Analysis ........................................... 1-6

1.6 Status of Reasonably Foreseeable Development Scenario ............................... 1-7

1.7 Definition and Processing Approach for New, Pending, and Approved Solar Applications ........................................................................................ 1-9

1.7.1 New Applications .................................................................................. 1-9

1.7.2 Pending Applications ............................................................................ 1-10

1.7.3 Approved Applications ......................................................................... 1-12

1.8 Ongoing Rulemaking ........................................................................................ 1-14

1.8.1 Segregation Rule ................................................................................... 1-14

1.8.2 Competitive Process .............................................................................. 1-14

2 BLM ALTERNATIVES ............................................................................................ 2-1

2.1 No Action Alternative ............................................................................................. 2-1

2.2 Modified BLM Action Alternatives ...................................................................... 2-1

2.2.1 Program Components Common to All Action Alternatives ............................ 2-1

2.2.1.1 Right-of-Way Authorization Policies .............................................. 2-1

2.2.1.2 Adaptive Management and Monitoring ....................................... 2-13

2.2.1.3 Design Features ............................................................................ 2-14

2.2.2 Modified Solar Energy Development Program Alternative (BLM Preferred Alternative) ........................................................................ 2-14

2.2.2.1 Proposed Right-of-Way Exclusion Areas ..................................... 2-15

2.2.2.2 Proposed Solar Energy Zones ....................................................... 2-15

2.2.2.2.1 Authorization Process for Projects in SEZs .................. 2-19

2.2.2.2.2 Environmental Review for Projects in SEZs ........................... 2-19

2.2.2.2.3 Incentives for Projects in SEZs .................................................. 2-23

2.2.2.2.4 Proposed Withdrawal for SEZs ................................................. 2-26

2.2.2.2.5 Proposed Identification Protocol for New SEZs ....... 2-28

2.2.2.2.6 Ongoing Efforts to Analyze New SEZs .................................. 2-30

2.2.2.3 Proposed Variance Areas for Utility-Scale Solar Energy Development ............................................................. 2-33

2.2.2.3.1 Variance Process ...................................................................... 2-33
<table>
<thead>
<tr>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2.2.3.2 Variance Process Determination</td>
</tr>
<tr>
<td>2.2.2.4 Land Use Plans To Be Amended</td>
</tr>
<tr>
<td>2.2.3 Modified SEZ Program Alternative</td>
</tr>
<tr>
<td>2.2.3.1 Proposed Right-of-Way Exclusion Areas</td>
</tr>
<tr>
<td>2.2.3.2 Proposed Solar Energy Zones</td>
</tr>
<tr>
<td>2.2.3.2.1 Solar Energy Zone Policies</td>
</tr>
<tr>
<td>2.2.3.3 Land Use Plans To Be Amended</td>
</tr>
<tr>
<td>2.3 Analysis of BLM’s Modified Action Alternatives</td>
</tr>
<tr>
<td>2.3.1 Impacts of the Modified Solar Energy Development Program Alternative</td>
</tr>
<tr>
<td>2.3.1.1 Facilitate Near-Term Solar Energy Development (Pace of Development)</td>
</tr>
<tr>
<td>2.3.1.2 Minimize Environmental Impacts</td>
</tr>
<tr>
<td>2.3.1.3 Minimize Social and Economic Impacts</td>
</tr>
<tr>
<td>2.3.1.4 Provide Flexibility to Solar Industry</td>
</tr>
<tr>
<td>2.3.1.5 Optimize Existing Transmission Infrastructure and Corridors</td>
</tr>
<tr>
<td>2.3.1.6 Standardize and Streamline the Authorization Process</td>
</tr>
<tr>
<td>2.3.1.7 Meet Projected Demand for Solar Energy Development</td>
</tr>
<tr>
<td>2.3.2.1 Impacts of the Modified SEZ Program Alternative</td>
</tr>
<tr>
<td>2.3.2.1.1 Facilitate Near-Term Solar Energy Development (Pace of Development)</td>
</tr>
<tr>
<td>2.3.2.2 Minimize Environmental Impacts</td>
</tr>
<tr>
<td>2.3.2.3 Minimize Social and Economic Impacts</td>
</tr>
<tr>
<td>2.3.2.4 Provide Flexibility to Solar Industry</td>
</tr>
<tr>
<td>2.3.2.5 Optimize Existing Transmission Infrastructure and Corridors</td>
</tr>
<tr>
<td>2.3.2.6 Standardize and Streamline the Authorization Process</td>
</tr>
<tr>
<td>2.3.2.7 Meet Projected Demand for Solar Energy Development</td>
</tr>
<tr>
<td>2.3.3 Impacts of the No Action Alternative</td>
</tr>
<tr>
<td>2.3.4 Comparison of Alternatives and Selection of Preferred Alternative</td>
</tr>
<tr>
<td>2.3.5 Cumulative Impacts</td>
</tr>
<tr>
<td>2.3.6 Other NEPA Considerations</td>
</tr>
<tr>
<td>2.4 Status of Consultation under Other Laws and Regulations</td>
</tr>
<tr>
<td>2.4.1 Endangered Species Consultation</td>
</tr>
<tr>
<td>2.4.2 National Historic Preservation Act</td>
</tr>
<tr>
<td>2.4.3 Tribal Consultation</td>
</tr>
<tr>
<td>3 3 DOE ALTERNATIVES</td>
</tr>
<tr>
<td>3.1 No Action Alternative</td>
</tr>
<tr>
<td>3.2 Action Alternative—DOE’s Programmatic Environmental Guidance</td>
</tr>
<tr>
<td>3.2.1 General Mitigation Measures</td>
</tr>
</tbody>
</table>
CONTENTS (Cont.)

3.2.2 Institutional and Public Outreach .......................................................... 3-2
3.2.3 Land Use ............................................................................................... 3-2
3.2.4 Water Resources and Erosion Control .................................................. 3-3
3.2.5 Biological Resources ............................................................................ 3-4
3.2.6 Air Quality ............................................................................................ 3-4
3.2.7 Cultural Resources and Native American Interactions ......................... 3-5
3.2.8 Visual Resources and Aesthetics .......................................................... 3-5
3.2.9 Socioeconomics .................................................................................... 3-6
3.2.10 Environmental Justice ........................................................................... 3-6
3.2.11 Safety and Health .................................................................................. 3-6
3.3 Analysis of DOE’s Action Alternative ............................................................. 3-7
3.3.1 Impacts of DOE’s Proposed Action ...................................................... 3-7
3.3.2 Impacts of the No Action Alternative ................................................... 3-8
3.3.3 Cumulative Impacts .............................................................................. 3-9
3.3.4 Other NEPA Considerations ................................................................. 3-9

4 REFERENCES .......................................................................................................... 4-1

5 LIST OF PREPARERS ............................................................................................. 5-1

APPENDIX A: Pending Solar Applications as of August 15, 2011 ......................... A-1
APPENDIX B: Solar Energy Zones Dropped from Further Consideration ............... B-1
APPENDIX C: Action Plans for Solar Energy Zones To Be Carried Forward .......... C-1
APPENDIX E: Update to Land Use Plan Amendments ............................................ E-1

FIGURES

2.2-1 Proposed SEZ Identification Protocol .......................................................... 2-29
2.2-2 Desert Tortoise Conservation Areas and Proposed Connectivity Areas ........... 2-36
2.3-1 BLM-Administered Lands in Arizona Available for Application for Solar Energy ROW Authorizations under the Modified BLM Alternatives Considered in this Supplement ........................................ 2-44
FIGURES (Cont.)

2.3-2 BLM-Administered Lands in California Available for Application for Solar Energy ROW Authorizations under the Modified BLM Alternatives Considered in this Supplement ................................................................. 2-45

2.3-3 BLM-Administered Lands in Colorado Available for Application for Solar Energy ROW Authorizations under the Modified BLM Alternatives Considered in this Supplement ................................................................. 2-46

2.3-4 BLM-Administered Lands in Nevada Available for Application for Solar Energy ROW Authorizations under the Modified BLM Alternatives Considered in this Supplement ................................................................. 2-47

2.3-5 BLM-Administered Lands in New Mexico Available for Application for Solar Energy ROW Authorizations under the Modified BLM Alternatives Considered in this Supplement ................................................................. 2-48

2.3-6 BLM-Administered Lands in Utah Available for Application for Solar Energy ROW Authorizations under the Modified BLM Alternatives Considered in this Supplement ................................................................. 2-49

TABLES

1.6-1 Projected Megawatts of Solar Power Development by 2030 and Corresponding Developed Acreage Estimates for Reasonably Foreseeable Development Scenario................................................................. 1-8

1.7-1 Processing Approach for New and Pending Applications........................................ 1-9

1.7-2 Approved Solar Projects on BLM-Administered Lands as of August 15, 2011 ........ 1-13

2.2-1 Revised Areas for Exclusion under the BLM’s Modified Solar Energy Development Program Alternative ................................................................. 2-16

2.3-1 Summary of Potentially Developable BLM-Administered Land under the No Action Alternative, the Modified Solar Energy Development Program Alternative, and the Modified SEZ Program Alternative ........................................... 2-43

2.3-2 Summary-Level Assessment of Potential Environmental Impacts by Alternative...... 2-51

2.3-3 Percentage of Available Lands Developed under BLM Modified Action Alternatives Based on Estimated Acres Developed under the RFDS......................... 2-71
<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.3-4</td>
<td>Comparison of the No Action Alternative and the Modified Action Alternatives with Respect to the BLM's Solar Energy Program Objectives</td>
</tr>
<tr>
<td>5-1</td>
<td>Agency Management Team</td>
</tr>
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<td>5-2</td>
<td>Preparers of the Supplement to the Draft Solar PEIS at Argonne National Laboratory</td>
</tr>
</tbody>
</table>
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NOTATION

The following is a list of acronyms, abbreviations, 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

1. AC  alternating current
2. ACEC  Area of Critical Environmental Concern
3. ACHP  Advisory Council on Historic Preservation
4. ADEQ  Arizona Department of Environmental Quality
5. ADWR  Arizona Department of Water Resources
6. AGL  above ground level
7. AUM  animal unit month
8. AZGFD  Arizona Game and Fish Department
9. BLM  Bureau of Land Management
10. BLM-CA  Bureau of Land Management, California
11. BOR  U.S. Bureau of Reclamation
12. CAReGAP  California Regional Gap Analysis Project
13. CDCA  California Desert Conservation Area
14. CDFG  California Department of Fish and Game
15. CDOW  Colorado Division of Wildlife
16. CDWR  Colorado Division of Water Resources
17. CEC  California Energy Commission
18. CFR  Code of Federal Regulations
19. CIMIS  California Irrigation Management Information System
20. CNPS  California Native Plant Society
21. CSP  concentrating solar power
22. CWA  Clean Water Act
23. DLT  dedicated-line transmission
24. DoD  U.S. Department of Defense
25. DOE  U.S. Department of Energy
26. DOT  U.S. Department of Transportation
27. DRECP  Desert Renewable Energy Conservation Plan
28. DSRP  Decommissioning and Site Reclamation Plan
29. DWMA  Desert Wildlife Management Area
30. EA  environmental assessment
31. EIS  environmental impact statement
32. E.O.  Executive Order
EPA U.S. Environmental Protection Agency
EPRI Electric Power Research Institute
ESA Endangered Species Act of 1973
FAA Federal Aviation Administration
FEMA Federal Emergency Management Agency
FERC Federal Energy Regulatory Commission
FLPMA Federal Land Policy and Management Act of 1976
FONSI Finding of No Significant Impact
FR Federal Register
FRCC Florida Reliability Coordinating Council
GHG greenhouse gas
HMA Herd Management Area
HUC8 8-digit hydrologic unit code
I Interstate
IBLA Interior Board of Land Appeals
IID Imperial Irrigation District
IM Instruction Memorandum
ISO independent system operator
ITFR Interim Temporary Final Rule
KGRA known geothermal resource area
KOP key observation point
LTVA long-term visitor area
MILP mixed-integer linear programming
MOA Military Operating Area
MTR military training route
NAHC Native American Heritage Commission (California)
NCA National Conservation Area
NDOW Nevada Department of Wildlife
NEPA National Environmental Policy Act of 1969
NHD National Hydrology Dataset
NHPA National Historic Preservation Act
NLCS National Landscape Conservation System
NMDGF New Mexico Department of Game and Fish
NMED New Mexico Environment Department
NNHP Nevada Natural Heritage Program
NP National Park
NPS National Park Service
NPV  net present value
NRCS  Natural Resources Conservation Service
NRDC  Natural Resources Defense Council
NREL  National Renewable Energy Laboratory
NRHP  National Register of Historic Places
NRS  Nevada Revised Statutes
NTTR  Nevada Test and Training Range
NWI  National Wetlands Inventory
NWIS  National Water Information System
NWR  National Wildlife Refuge
OHV  off-highway vehicle
PCA  Potential Conservation Area
PEIS  programmatic environmental impact statement
PFYC  potential fossil yield classification
PITU  Paiute Indian Tribe of Utah
P.L.  Public Law
PM  particulate matter
PM$_{2.5}$ particulate matter with an aerodynamic diameter of 2.5 μm or less
PM$_{10}$ particulate matter with an aerodynamic diameter of 10 μm or less
PPA  Power Purchase Agreement
P-P-D  population-to-power density
POD  Plan of Development
PSD  prevention of significant deterioration
PV  photovoltaic
REA  Rural Electrification Act of 1936
RCE  Reclamation Cost Estimate
RDEP  Restoration Design Energy Project
REAT  Renewable Energy Action Team
REDA  Renewable Energy Development Area
REEA  Renewable Energy Evaluation Area
REPG  Renewable Energy Policy Group
RFDS  reasonably foreseeable development scenario
RMP  Resource Management Plan
ROD  Record of Decision
ROW  right-of-way
RPS  Renewable Portfolio Standard
RSI  Renewable Systems Interconnection
RTO  regional transmission organization
SEZ  solar energy zone
SHPO  State Historic Preservation Office(r)
SLT  shared-line transmission
SLVRCA  San Luis Valley Renewable Communities Alliance
SNWA Southern Nevada Water Authority
SRMA Special Recreation Management Area
SUA special use airspace
SVL sensitive viewing location
SVRA sensitive visual resource area
SWReGAP Southwest Regional Gap Analysis Project
TDS total dissolved solids
TEPPC Transmission Expansion Planning Policy Committee
UDWR Utah Division of Wildlife Resources
USC United States Code
USACE U.S. Army Corps of Engineers
USDA U.S. Department of Agriculture
USFS U.S. Forest Service
USFWS U.S. Fish and Wildlife Service
USGS U.S. Geological Survey
UTTR Utah Test and Training Range
VRI Visual Resource Inventory
VRM Visual Resource Management
WA Wilderness Area
WECC Western Electricity Coordinating Council
WHMA Wildlife Habitat Management Area
WIU Wilderness Inventory Unit
WRCC Western Regional Climate Center
WSA Wilderness Study Area
WWP Western Watersheds Project

UNITES OF MEASURE

ft foot (feet) m² square meter(s)
ft² square foot (feet) mi mile(s)
km kilometer(s) mi² square mile(s)
km² square kilometer(s) mm millimeter(s)
kV kilovolt(s) MW megawatt(s)
kWh kilowatt-hour(s) MWh megawatt-hour(s)
m meter(s) μm micrometer(s)
ENGLISH/METRIC AND METRIC/ENGLISH EQUIVALENTS

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

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<td>acre-feet (ac-ft)</td>
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| **Metric/English Equivalents** |    |                             |
| centimeters (cm) | 0.3937 | inches (in.) |
| cubic meters (m³) | 0.00081 | acre-feet (ac-ft) |
| cubic meters (m³) | 35.31 | cubic feet (ft³) |
| cubic meters (m³) | 1.308 | cubic yards (yd³) |
| cubic meters (m³) | 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 (km²) | 247.1 | acres |
| square kilometers (km²) | 0.3861 | square miles (mi²) |
| square meters (m²) | 10.76 | square feet (ft²) |
| square meters (m²) | 1.196 | square yards (yd²) |