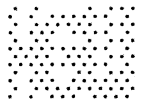


Howard G. Wilshire



5472

3727 Burnside Road, Sebastopol, CA

September 8, 2009

Solar Energy PEIS  
Argonne National Laboratory  
9700 S. Cass Avenue  
EVS/900  
Argonne, IL 60439

**RE: PEIS, Solar Energy Development**

Much of the public lands under consideration by this PEIS for solar development have been variously disturbed by prior human activities, which is used as an excuse to renew the disturbances. Many such lands are in the process of natural recovery from human impacts—for example, lands disturbed by Patton's military maneuvers in 1942-43 have been in process of recovery for nearly seven decades.

The actions considered will not only undo all of nature's efforts, but will be far worse than any prior damages. The current deplorable practices of the solar industries are scorched earth practices in which the land is completely stripped of vegetation, and much of the soil biota destroyed. Even armored divisions of Patton crunching across the desert did not accomplish such wholesale destruction.

Extreme modifications of the land as done for solar installations inevitably spread the damage to unused adjacent lands by wind and water erosion, and sediment deposition.

Solar panels for large centralized photovoltaic installations are getting cheaper, but are at best 10% efficient in converting solar to electrical energy. Solar thermal installations are comparably inefficient, and require even more water than photovoltaic plants. All grid-connected solar developments require conversion of DC to AC for transmission on the existing grid, entailing a 23% loss of energy—plus another 15-17% loss in transmission. Solar panels degrade over time, beginning with an almost instant loss of 2-3% of output, followed by anywhere from 0.5 to 3% annual degradation of energy output. For a 20% efficient panel, a 3%/year loss of output reduces the output to 11.5% in 20 years.

The materials for these installations will need to be replaced over relatively short periods of time. It is certain that some, if not many, such installations will be abandoned. Guaranteed (bonded) reclamation of such sites must be a front-end cost for approving any installation. This should include putting up the money, prior to development, sufficient to pay for restoration of the land to an ecologically functioning state. The lessons from inadequate bonding of mining and wind energy enterprises must be employed, and all routes of escape, like corporate bankruptcy, from the obligation to restore the land should be closed.

There is a more-than-ample supply of platforms for solar installations that do not require any additional land consumption, and have minimal transmission requirements: roof-top developments in urban areas. These avenues should be explored before any centralized power plants in remote areas are considered.

Sincerely,

A handwritten signature in cursive script that reads "Howard Wilshire". The signature is written in dark ink and is positioned above the typed name.

Howard Wilshire Ph.D. (Geology)  
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