

## BLM Solar Energy Program Design Features

### **Programmatic Design Features for Noise**

The following design features have been identified to avoid, minimize, and/or mitigate potential impacts on the acoustic environment from solar energy development that were identified and discussed in Sections 5.13.1 and 5.13.2 of the Draft and Final Solar PEIS.

#### ***General***

- N1-1** Project developers shall consult with the BLM in the early phases of project planning to assess and minimize the proposed project's noise impacts on sensitive noise receptors.
- (a) Assessing noise impacts shall include, but is not limited to, the following:
- Taking measurements to assess the existing background ambient sound levels both within and outside the project site and comparing these with the anticipated noise levels proposed at the facility. The ambient measurement protocols of all affected land management agencies shall be considered and utilized. Nearby residences and likely sensitive human and wildlife receptor locations shall be identified.
  - Conducting assessments for noise impacts by qualified individuals using appropriate and commonly accepted software, procedures, and past project examples.
  - Evaluating impacts from noise as part of the environmental impact analysis for the project and considering options to avoid, minimize, and/or mitigate adverse impacts in coordination with the BLM.

#### ***Site Characterization, Siting and Design, Construction***

- N2-1** The siting and design of solar facilities, structures, roads, and other project elements shall seek to minimize impacts on sensitive noise receptors.
- (a) Methods to minimize project impacts on sensitive noise receptors may include, but are not limited to, the following:
- Enclosing noisy equipment when located near sensitive receptors.

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- Posting warning signs at high-noise areas and implementing a hearing protection program for work areas with noise in excess of 85 dBA.
- Implementing a noise complaint process and hotline, including documentation, investigation, evaluation, and resolution of legitimate project-related noise complaints.
- Maintaining project equipment in accordance with manufacturers' specifications. For example, suitable mufflers and/or air-inlet silencers shall be installed on all internal combustion engines (ICEs) and certain compressor components.
- Limiting low-altitude (under 1,500 ft [457 m]) helicopter flights for installation of transmission lines near noise-sensitive receptors to locations where only helicopter activities can perform the installation.
- Scheduling construction activities to minimize disruption to nearby residents and existing operations surrounding the project areas.
- Planning noisy construction activities near sensitive receptors to take place during the least noise-sensitive times of day (i.e., daytime between 7 a.m. and 7 p.m.), and on weekdays.
- Coordinating individual noisy activities to occur at the same time to reduce the frequency of site boundary noise.
- Implementing noise control measures (e.g., erection of temporary wooden noise barriers) where activities are expected near sensitive receptors.
- Notifying nearby residents in advance of noisy activities, such as blasting or pile driving, before and during the construction period.
- Considering siting immobile construction equipment (e.g., compressors and generators) away from nearby residences and other sensitive receptors.
- Siting permanent sound-generating facilities (e.g., compressors, pumps) away from residences and other sensitive receptors. The use of acoustic screening may be required.

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- Incorporating low-noise systems (e.g., for ventilation systems, pumps, generators, compressors, and fans) and selecting equipment without prominent discrete tones.
- Siting louvered side(s) of wet cooling tower(s) away from sensitive receptors. Noise impacts may be further reduced by selecting quieter fans and fans that operate at a lower speed, particularly if they operate at night. Silencers on fan stacks may also be used.
- Including noise reduction measures such as siting noise sources to take advantage of existing topography and distances and constructing engineered sound barriers and/or berms or sound-insulated buildings to reduce potential noise impacts at the locations of nearby sensitive receptors.
- Incorporating environmental inspection and monitoring measures into PODs or other relevant plans to monitor and respond to impacts from noise during construction, operations, and decommissioning of a solar energy development, including adaptive management protocols.

### *Operations and Maintenance*

**N3-1** Compliance with the terms and conditions for noise shall be monitored by the project developer. Consultation with the BLM shall be maintained through operations and maintenance of the project, employing an adaptive management strategy and modifications as necessary and approved by the BLM.

- (a) Methods for maintaining compliance with the noise design elements during operations and maintenance may include, but are not limited to, the following:
- Managing noise levels from cooling systems and dish engine technology so that levels at the nearest residences and sensitive receptor areas near the facility boundary are kept within applicable guidelines.
  - Operating vehicles traveling within and around the project area in accordance with posted speed limits to reduce vehicle noise levels.
  - Scheduling activities to minimize disruption to nearby residents and existing operations surrounding the project areas.

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- Notifying nearby residents in advance of noisy activities, such as blasting or pile driving, before and during the reclamation and decommissioning activities.
- Monitoring and maintaining transformer noise levels.  
Considering installation of new transformers with reduced flux density, which generate noise levels as much as 10 to 20 dB lower than National Electrical Manufacturers Association (NEMA) standard values, or use of barrier walls, partial enclosures, or full enclosures to shield or contain the noise.

### *Reclamation and Decommissioning*

- N4-1** Reclamation of the construction site shall minimize the project's noise impacts on sensitive noise receptors.