

**UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT**

**DRAFT ENVIRONMENTAL ASSESSMENT
Competitive Processes, Terms, and Conditions for Leasing Public Lands for
Solar and Wind Energy Development and Technical Changes and Corrections
for 43 CFR Parts 2800 and 2880**

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300)
1849 C Street NW, Room 2134LM
Washington, DC 20240

DOI-BLM-WO-301-2013-0001-EA

September 2014

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U.S. Department of the Interior
Bureau of Land Management

I. Introduction

The Bureau of Land Management (BLM) is developing a proposed rule to: amend portions of 43 CFR Part 2800, *Rights-of-Way under the Federal Land Policy Management Act*; develop a revised subpart 2809 for a competitive process for leasing public lands for solar and wind energy development; and amend portions of 43 CFR Part 2880, *Rights-of-Way under the Mineral Leasing Act*. While the proposed regulatory amendments are eligible to be categorically excluded from the requirement to prepare an environmental assessment (EA) pursuant to the regulations at 43 CFR 46.205 and 46.210, the BLM Office of the Assistant Director, Minerals and Realty Management, elected to prepare this draft environmental assessment (EA) under the National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. 4321 *et seq.* This document will analyze and disclose the potential environmental impacts of the proposed rule to inform agency decision makers and the public. Based on the EA, the BLM will prepare a finding of no significant impact (FONSI) or, if the potential environmental impacts of the proposed rule are determined to be significant, a more detailed environmental impact statement (EIS) prior to deciding whether to issue a final rule based on the proposed rule.

(a) Background and Overview

The Department of the Interior's (DOI's) BLM administers over 245 million surface acres of public land, most of which is located in the 12 westernmost states, including Alaska. The Federal Land Policy and Management Act of 1976 (FLPMA) provides the framework for the administration, management, protection, development, and enhancement of public lands. The public lands are extremely diverse and they are a storehouse of natural and cultural resources. Among the many traditional uses of public lands is energy production, which has historically featured the development and production of oil, gas, and coal. Today, renewable resources—solar, wind, and geothermal—have taken their place alongside the traditional sources of energy as a growing use of the public lands.

Executive Order (EO) 13212, “Actions to Expedite Energy-Related Projects,” dated May 18, 2001, established a policy that Federal agencies should take appropriate actions, to the extent consistent with applicable law, to expedite projects to increase the production, transmission, or conservation of energy. Subsequently, a Memorandum of Understanding was developed among the Departments of Energy, the Interior, and Agriculture; the Environmental Protection Agency; the Council on Environmental Quality; and the members of the Western Governors’ Association to establish a framework for cooperation between the western states and the Federal

Government, to address energy problems facing the west, and to facilitate renewable energy production.

In response to EO 13212, in 2002 the BLM developed the Interim Wind Energy Policy to address immediate needs for responding to requests for wind energy development on public lands. Because of the need for a permanent policy, the BLM in 2003 began a comprehensive process of reviewing the potential of the public lands to support wind energy development. Utilizing a programmatic environmental impact statement (PEIS; in this case, the Wind PEIS) that analyzed alternatives and potential impacts of wind energy development,¹ the BLM in January of 2006 issued a Record of Decision² (ROD) that:

- (1) Established a comprehensive Wind Energy Development Program to administer the development of wind energy resources on BLM-administered public lands in 11 western states: Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming. A component of the program is the requirement for continued consultation with Indian Tribes at the project-specific level;
- (2) Provided that future project-specific environmental analyses for wind energy development would tier from the analysis in the Wind PEIS/ROD, thereby allowing the project-specific analyses to focus on critical, site-specific issues of concern;
- (3) Established policies and best management practices (BMPs) for the administration of wind energy development activities and established minimum requirements for mitigation measures;
- (4) Replaced the BLM Interim Wind Energy Policy with a new policy that incorporated the programmatic policies and BMPs evaluated in the PEIS; and
- (5) Amended 52 BLM land use plans in nine states: Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming. The land use plan amendments included the adoption of the Wind Energy Development Program policies and BMPs described in the Wind PEIS, as well as identification of specific areas where wind energy development will be excluded.

The Energy Policy Act of 2005 (the Act) (Public Law (P.L.) 109-58) encouraged the DOI and BLM to develop renewable resources on public lands. Section 211 of the Act states: “It is the sense of the Congress that the Secretary of the Interior should, before the end of the 10-year period beginning on the date of enactment of this Act, seek to have approved non-hydropower renewable energy projects located on the public lands with a generation capacity of at least 10,000 megawatts of electricity.”

¹ A summary table (Table A-1) displaying the types of environmental impacts of the adopted Wind Energy Program is provided in Appendix A. The Wind PEIS was not site-specific; consequently, the level of its environmental analysis was generic in nature. Potential impacts associated with each stage of a wind energy project are described in Table A-1. The requirement for additional, project-level environmental analysis is part of the adopted Wind Energy Program and will be required for individual wind energy development projects. The analysis of environmental impacts and comparison of alternatives are contained in Chapters 5 and 6 of the Wind PEIS found at <http://windeis.anl.gov>.

² Complete details about the BLM’s Wind Energy Program can be found in the Record of Decision (ROD) at <http://windeis.anl.gov>.

In 2012, the BLM met the goal established by Congress by approving over 12,000 MW of renewable energy. However, the development of renewable energy is a continuing Federal priority. On June 25, 2013, to emphasize the importance of the renewable energy goals of the nation, the President announced the release of a Climate Action Plan to reduced carbon pollution. The Climate Action Plan set a new goal for the Department of the Interior to approve a renewable energy capacity of at least 20,000 MW of electricity on the public lands by 2020.

In 2007, the BLM issued a Solar Energy Development Policy to address increased interest in solar energy development on BLM-administered public lands and to implement goals to construct renewable energy facilities on public lands. This policy established procedures for processing right-of-way (ROW) applications for solar energy development projects in accordance with FLPMA and the BLM's implementing regulations (43 CFR Part 2800). This policy was updated in 2010 by two more detailed policies that established a maximum term for authorizations, diligent development requirements, bond coverage, potential best management practices for solar energy development projects, and interim guidance on how to calculate rent for utility-scale solar energy facilities.

The BLM's practice at that time was to evaluate solar energy ROW applications on a project-by-project basis. In addition, many of the BLM's land use plans did not specifically address solar energy development; therefore, projects that were not in conformance with existing land use plans required individual land use plan amendments. Moreover, the BLM did not have a standard set of mitigation measures that could be applied consistently to all solar energy development projects. The need to develop mitigation measures case-by-case and amend land use plans added to the time needed to process ROW applications for solar energy projects.

On March 11, 2009, the Secretary of the Interior issued Secretarial Order 3285, which announced a policy goal of identifying and prioritizing specific locations best suited for the large-scale production of solar energy on public lands. The Secretarial Order required DOI agencies and bureaus to work collaboratively with each other and with other Federal agencies, individual states, Tribes, local governments, and other interested stakeholders, including renewable energy generators and transmission and distribution utilities, to encourage the timely and responsible development of renewable energy and associated transmission, while protecting and enhancing the nation's water, wildlife, and other natural resources; to identify appropriate areas for generation and transmission; to develop best management practices for renewable energy and transmission projects on public lands to ensure the most environmentally responsible development and delivery of renewable energy; and to establish clear policy direction for authorizing the development of solar energy on public lands. On February 22, 2010, Secretarial Order 3285 was amended to clarify Departmental roles and responsibilities in prioritizing development of renewable energy. The amended order is referred to as Secretarial Order 3285A1.

As an agency with a multiple-use mission, to comply with Secretarial Order 3285A1, the BLM must make land use decisions that are environmentally responsible and sustain the health and productivity of the public lands for the use and enjoyment of present and future generations. The BLM recognized that for solar energy development to be successful, it must be consistent with protection of other important resources and values, including units of the National Park System;

national wildlife refuges; other specially designated areas; wildlife; and cultural, historic, and paleontological values.

To comply with EO 13212 and the Energy Policy Act of 2005, and later with Secretarial Order 3285A1, and to replace elements of the 2007 Solar Energy Development Policy, the BLM began developing a comprehensive Solar Energy Program in much the same way as the BLM had developed the 2006 Wind Energy Policy. In May 2008, in conjunction with the DOE, the BLM initiated the *Programmatic Environmental Impact Statement for Solar Energy Development in the Six Southwestern States* (Solar PEIS) under NEPA. Through the NEPA process, the agencies engaged extensively with their cooperating agencies, key stakeholders, and the public to obtain input on the scope, objectives, and potential impacts of the proposed actions. On the basis of this input, the BLM incrementally refined its proposed actions, alternatives, and analyses. In December 2010, the BLM and DOE published the Draft PEIS. During the comment period, the public, as well as many cooperating agencies and key stakeholders, offered suggestions on how the BLM and DOE could increase the utility of the analysis, strengthen elements of the BLM's proposed Solar Energy Program, and increase certainty regarding solar energy development on BLM-administered lands. On October 28, 2011, the lead agencies published a Supplement to the Draft Solar PEIS, in which adjustments were made to elements of the proposed Solar Energy Program and to guidance for facilitating utility-scale solar energy development to better meet the BLM and DOE's solar energy objectives. The Final Solar PEIS was published in July 2012; after further deliberation and consultation, the ROD³ was signed by the Secretary in October 2012 that:

- (1) Established a comprehensive Solar Energy Program to administer the development of utility-scale solar energy resources on BLM-administered public lands in six southwestern states: Arizona, California, Colorado, Nevada, New Mexico, and Utah. A component of the program is the requirement for continued consultation with Tribes at the project-specific level;
- (2) Provided that future, project-specific environmental analyses for solar energy development would tier from the analysis in the Solar PEIS/ROD, thereby allowing the project-specific analyses to focus just on critical, site-specific issues of concern;
- (3) Established land use allocations and incorporated required programmatic and specific design features into 89 BLM land use plans in the six-state study area; and
- (4) In addition, the decision:
 - (a) Identified areas excluded from utility-scale solar energy ROWs;
 - (b) Established 17 Solar Energy Zones (SEZs), which are priority areas for utility-scale solar energy development ROWs, and identified a process to establish new SEZs; and
 - (c) Identified "variance areas," areas potentially available for utility-scale solar energy development outside of exclusion areas and SEZs.

³ The analysis of environmental impacts and the comparison of alternatives are contained in the Draft Solar PEIS, Supplement to the Draft Solar PEIS, and Final Solar PEIS. A summary table (Table B-1) comparing the impacts of the alternatives considered is attached in Appendix B. Complete details of the BLM's Solar Program are in the ROD. All of these documents are available at <http://solareis.anl.gov/>.

As the BLM's renewable energy program developed, the Office of the Inspector General (OIG) evaluated the BLM to assess the effectiveness of its renewable energy program. In its final report, the OIG found that the BLM was poised for a massive expansion of wind and solar projects. See report number CR-EV-BLM-0004-2010, dated June 12, 2012. Recommendations were made by the OIG to improve the long-term management of BLM's renewable energy program. Such recommendations by the OIG included rent, bond management, and the competitive processes for solar and wind energy developments on the BLM-administered lands. In its response to the OIG, the BLM agreed to implement actions necessary to effectively address the recommendations and maintain consistency in its management of the public lands.

II. Purpose and Need for Action and Decision to be Made

The purpose of the proposed action is to amend the BLM's ROW regulations in response to heightened priorities for and interest in wind and solar energy development on public lands. Specifically, the purpose is to amend 43 CFR Part 2800, *Rights-of-Way under the Federal Land Policy and Management Act*, to promote the use of preferred areas for solar and wind energy development (designated leasing areas), and establish competitive processes, terms, and conditions (including rents, fees, and bonding requirements) for solar and wind energy development rights-of-way both inside and outside designated leasing areas. In addition to setting forth competitive processes for solar and wind energy, the proposed rule would effectively respond to many of the recommendations made by the OIG.⁴ The purpose includes amending 43 CFR Part 2880, *Rights-of-Way under the Mineral Leasing Act* (MLA), in order to maintain consistency with the administrative procedures under 43 CFR Part 2800. Proposed adjustments to Part 2800 regulations are reflected under Part 2880 where possible. The decision to be made is whether the BLM should promulgate this rule for implementation.

The need for the action is to respond to changing demand for wind and solar energy development on public lands. Through the completed Wind and Solar PEISs, the BLM has identified wind and solar energy development on public lands as an important component for meeting the nation's energy goals and objectives, as well as complying with applicable orders and mandates. The BLM has also identified a need to respond efficiently and effectively to the high interest in wind energy development and utility-scale solar energy development on public lands and to ensure consistent application of measures to avoid, minimize, and mitigate the potential adverse impacts of such development.

FLPMA directs that the United States receive fair market value for the use of the public lands and their resources, unless otherwise provided for by statute. The BLM is proposing the competitive processes described in this proposed rule because of the potential size and magnitude of the BLM wind and solar energy programs, the level of interest in developing solar

⁴ The Solar Energy PEIS/ROD created designated leasing areas (these are the SEZs), but the Wind PEIS/ROD did not create similar areas. The BLM is beginning the process to establish wind energy priority development areas similar to SEZs that would be subject to the proposed competitive leasing process.

and wind energy facilities on public land, and the requirement to receive fair market value for the use of the public lands,

III. Issues

Secretarial Order 3285A1, “Renewable Energy Development by the Department of the Interior,” established the development of renewable energy on public lands as one of the Department’s highest priorities. One of the principal or major uses defined by the FLPMA includes the issuance of ROWs on public lands. FLPMA also mandates that “the United States receive fair market value for the use of the public lands and their resources unless otherwise provided for by statute” (43 U.S.C. 1701(a)(9)). The existing ROW regulations (43 CFR 2804.23) provide authority for conducting a competitive process, but only to resolve competing applications for the same facility or system. The competitive process in the proposed rule would modify those regulations for solar and wind energy development.

Several comments on both the Draft Wind PEIS and the Draft Solar PEIS expressed interest in a competitive leasing process with the goal of properly valuing the solar and wind resources on public land. In the Wind PEIS, the BLM indicated that competitive bidding would be conducted only on a case-by-case basis, mainly because interest in the approach was limited. Greater interest in establishing a competitive leasing process was expressed by the public at the time of preparation of the Solar PEIS. In response to increasing demand for both types of renewable energy development on BLM-administered lands and the mandate to receive fair market value for the use of the public lands, the BLM is now proposing to offer through a competitive process designated leasing areas that have been or will be identified as having high potential for wind or solar development and that have been assessed as having a minimum amount of conflict with other public land resources. For solar energy, the Solar Energy PEIS/ROD established solar energy zones (SEZs), which under the proposed action would be considered designated leasing areas. While the Wind Energy PEIS/ROD did not establish similar areas for wind energy facilities, the BLM is beginning a process to establish wind energy priority development areas that would be subject to the proposed competitive leasing process.

The BLM published an Advance Notice of Proposed Rulemaking (ANPR) on December 29, 2011 (76 FR 81908), stating that regulations would be developed to provide the authority to offer public lands inside designated solar or wind energy development leasing areas (e.g., SEZs for solar) through a nomination and competitive process instead of simply through an application process. In addition to the process that was emphasized in the ANPR, the proposed rule includes a different proposed competitive process for lands outside designated leasing areas and a number of amendments to other provisions of the rights-of-way regulations found at 43 CFR parts 2800 and 2880.

IV. Proposed Action

(a) Description of the Proposed Action

The proposed action is an administrative action to amend and revise portions of 43 CFR Part 2800, *Rights-of-Way under the Federal Land Policy Management Act* and portions of 43 CFR Part 2880, *Rights-of-Way under the Mineral Leasing Act*. The proposed regulations would implement decisions contained in the RODs for both the Wind and Solar energy PEISs, and would not in and of themselves authorize development of wind or solar projects. The action includes developing a revised subpart 2809 defining a competitive process for solar and wind energy development on designated areas of public lands. Under the proposed action, the BLM would have the authority to offer designated lands for wind or solar energy development through a competitive leasing process consistent with the FLPMA requirement that it receive fair market value for the use of public lands. The proposed action also would establish a competitive process for solar and wind energy outside designated lands, rental rates, fees, and administrative provisions for wind and solar energy ROW grants and leases, as well as other technical revisions for ROWs. The BLM is making several administrative changes to clarify the regulations and codify existing policies. The following summarizes, by existing or proposed subpart, the proposed amendments and revisions to 43 CFR Parts 2800 and 2880.

43 CFR Part 2800—Rights-of-Way under the FLPMA—Proposed Revisions

Subpart 2801, *General Information*, addresses the acronyms and definitions to be found in Part 2800, as well as other general information. Included within this subpart are the ROW program objectives, scope and the severability of the regulations, identification of when a grant is needed, and how to appeal a decision under the regulations in this part.

Proposed amendments to subpart 2801 include the addition of new terms and modification of existing terms that are necessary to facilitate the other substantive regulatory changes proposed in Part 2800. Other amendments to the subpart include the text that pertains to ROW grants held by Federal agencies and describes solar and wind energy development facilities and associated action authorizations.

Subpart 2802, *Lands Available for FLPMA Grants*, addresses those lands available for FLPMA authorizations and the BLM designation of ROW corridors. Proposed amendments to this subpart would add “designated leasing areas” to the existing regulatory text, where appropriate.

Subpart 2803, *Qualifications for Holding FLPMA Grants*, states that individuals and entities that have the technical and financial ability to use public lands may hold grants. There are no proposed amendments to this subpart.

Subpart 2804, *Applying for FLPMA Grants*, identifies pre-application actions, where to apply, and what to provide when submitting an application. In addition, this subpart identifies the financial obligations associated with an application and/or authorization, to include processing or

monitoring fees and the way in which the fees are determined. Further, this subpart addresses the circumstances in which the BLM may determine competition among applications and deny an application.

Proposed amendments to subpart 2804 provide clarity for the handling of applications for solar and wind energy development, any transmission line with a capacity of 100 kV or more, or any pipeline 10 inches or more in diameter, and include additions to the existing regulations for required pre-application meetings and their cost reimbursement, application filing fees, and the BLM's authority to collect processing fees on behalf of other Federal agencies. The proposed rule would establish a competitive process for solar and wind energy outside a designated leasing area. BLM also proposes environmental screening criteria, mandatory pre-application public meetings and due diligence requirements for solar and wind development applications. The BLM could offer lands competitively for all rights-of-way on its own initiative, instead of only where there are two or more competing applications.

Subpart 2805, *Terms and Conditions of Grants*, addresses topics such as how a grant is authorized, what is contained within a grant, the general and specific conditions that must be complied with, conveyed and retained rights of a grant, and the payment of monitoring fees.

Expansion of the general conditions includes record access, maintenance and repair, common use and bond determination criteria. Specific terms and conditions for solar and wind authorizations include maximum durations for grants, minimum bonding requirement, diligent development provisions, and project site repair and cleanliness.

Subpart 2806, *Rents*, describes the rules for an authorization's general administrative actions to include how the rent is established; when and where rent is to be paid; late rental payments; and the proration, exemption, and waiver of rent. Furthermore, subpart 2806 addresses the specific rental schedules for authorizations such as linear and communication site rents, and what to do when the specific schedules do not apply.

Proposed amendments to subpart 2806 include technical adjustments to incorporate proposed amendments to the regulations within this subpart and to remove outdated references to communication site rental and identify BLM's authority to retroactively collect rent. The solar and wind rental schedule is introduced and includes a description of the Acreage Rent, Megawatt Capacity Fee, and their adjustment and phase-in structure for solar and wind energy development.

Subpart 2807, *Grant Administration and Operation*, addresses requirements of operations for grant holders, including when they may begin activities, when they must contact the BLM, and their liabilities. In addition, the effects on grants if the lands are transferred from BLM ownership are discussed. The conditions under which the BLM may order a temporary suspension of activities or suspend or terminate a grant are specified. The requirements for amendment and reassignment of grants or leases are discussed, as well as renewal of grants or leases.

Proposed amendments to subpart 2807 include modifications to when grant holder must contact the BLM during operations, changes in terms and conditions for assigning grants and leases to a third party, and requirements for when the name of the grant holder is changed. Some adjustments to the conditions for grant or lease renewal are included, as well as the proposed change to include relocated regulatory text that pertains to ROW grants held by Federal agencies.

Subpart 2808, *Trespass*, defines trespass and discusses the BLM's actions when it determines trespass has occurred. There are no proposed amendments to this subpart.

Subpart 2809, *Competitive Process for Leasing Public Lands for Solar and Wind Energy Development*, is a completely revised subpart. The revised subpart addresses the competitive process within designated leasing areas, and includes the nomination and parcel selection processes, methods for conducting competitive offers, the bid and bonus bid, selection of the successful bidder, variable offsets, BLM's reserved rights in the competitive process, terms and conditions of a solar and wind energy lease, and applications within a designated leasing area.

43 CFR Part 2880—Rights-of-Way under the MLA—Proposed Revisions

Part 2880 follows the same general outline as Part 2800, but for Mineral Leasing Act (MLA) ROWs and temporary use permits (TUPs). The amendments to 43 CFR Part 2880 are proposed in order to maintain consistency with the proposed amendments to 43 CFR Part 2800. The proposed changes are in subpart 2884 regarding terms for applying for MLA grants or TUPs (such as application filing and pre-application meetings, POD submittals, processing fees, and cost reimbursement for other Federal agencies); subpart 2885 on terms and conditions of MLA Grants and TUPs (such as performance and reclamation bonding, rental payment terms, and monitoring fees); and subpart 2886 regarding operations on MLA grants and TUPs (including when the BLM must be contacted, conditions for assigning MLA grants and TUPs, and renewal of grants).

(b) No Action Alternative

Under the no action alternative, there would be no modifications or additions to 43 CFR Part 2800, *Rights-of-Way under the Federal Land Policy Management Act*, or 43 CFR Part 2880, *Rights-of-Way under the Mineral Leasing Act*, to create a new competitive leasing process. Competition for grants for solar or wind energy development would continue to be limited to instances where there are competing applications for the same facility or system; there would be no competitive leasing for solar and wind energy development in designated areas, except in certain circumstances where competition exists.

Rents for solar and wind energy ROW grants would continue to be established by the BLM based on current practices. The per-acre county rates for calculating acreage fees and the rates for calculating megawatt capacity fees proposed in the regulation would not go into effect.

V. Affected Environment

The 245 million acres of public lands in the United States that the BLM administers are extraordinarily diverse, and include desert mountain ranges, coastal areas, alpine tundra, evergreen forests, expanses of rangeland, and red rock canyons. These lands are managed for a variety of resource values and uses that include recreation, conservation, visual resources, rangeland resources, ROWs, and mineral development.

The proposed rule would apply to all BLM-administered lands. As noted above, some of the impacts associated with solar and wind energy development on public lands in six southwestern states – Arizona, California, Colorado, Nevada, New Mexico, and Utah – have been analyzed through the programmatic EISs

(a) Solar

The Solar PEIS/ROD established a Solar Energy Program that is applicable to all solar energy development on public lands in six southwestern states: Arizona, California, Colorado, Nevada, New Mexico, and Utah. The principal components of the Solar PEIS/ROD: (1) identified about 285,000 acres (1,153 km²) of public lands in the six states as priority areas for solar development (called SEZs in the PEIS); (2) in accordance with an established variance process,⁵ allowed for consideration of utility-scale solar development in variance areas outside of SEZs totaling approximately 19 million acres (82,964 km²); (3) identified types of lands that are excluded from development for the protection of ecological, cultural, recreational, and other resources⁶ and uses; and (4) amended 89 land use plans to incorporate the Solar Energy Program and the identified SEZs, variance areas, and exclusion areas. These items are described in the ROD for the Solar PEIS, which was published in October 2012.

The 17 SEZs identified in the ROD for the Solar PEIS are the designated solar energy development leasing areas for which competitive leasing procedures would be established in the proposed rule. The Affected Environment for the SEZs is discussed in chapter four and chapters 8-13 of the Draft and Final PEIS. If fully developed over the next 20 years, the SEZs would provide enough electricity to meet the projected need under the reasonably foreseeable development scenario (RFDS) presented in the PEIS.⁷ However, some restriction of the area of development within the SEZs is expected because of either technological limitations or resource conflicts. To ensure that solar development is not constrained by insufficient availability of SEZs, the Solar PEIS also included a protocol for the identification of new SEZs. There are ongoing efforts to identify new SEZs in Arizona and California through a process that includes requirements to amend applicable land use plans and to conduct the necessary environmental and public review processes to inform any land use plan amendments.

⁵ Described in pages 177–186 of the ROD.

⁶ Excluded areas are defined in Table A-2, pages 38–41, of the ROD.

⁷ The RFDS presented in the Solar PEIS was based on the requirements for electricity generation from renewable energy sources established in the Renewable Portfolio Standards in each of the six states. Under the RFDS, the estimated amount of solar energy generation on BLM-administered lands in the six-state study area over the 20-year study period is about 24,000 MW, with a corresponding dedicated use of about 214,000 acres (866 km²).

(b) Wind

The ROD for the Wind PEIS established a Wind Energy Development Program applicable to all wind energy development on public lands in 11 western states: Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming, and amended 52 land use plans to adopt the new program. The Affected Environment section of the Wind PEIS in chapter four describes the affected resource subject to this proposed rule. Specific wind energy development zones were not identified in the Wind PEIS, and no designated leasing areas were established. Wind energy development was excluded from certain areas protected by statutory or administrative controls (e.g., Wilderness Areas, National Monuments, and Wilderness Study Areas). The Wind PEIS did identify the total potentially developable land area over the time period 2005 through 2025; this area encompasses approximately 21 million acres (84,984 km²) in the 11-state study area. A model was used to estimate that the economically developable area for public lands in the 11 states was about 160,000 acres (this value is analogous to the projected dedicated use area for solar development, 214,000 acres, estimated under the RFDS for the Solar PEIS).

VI. Environmental Effects

The Council on Environmental Quality (CEQ) regulations found at 40 CFR 1508.8(a) define direct effects as “those effects which are caused by the action and occur at the same time and place.” CEQ regulations at 40 CFR 1508.8(b) define indirect effects as those effects “which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on water and air and other natural systems, including ecosystems.” The following discussion describes any direct and indirect effects that may result from implementation of the proposed rule.

(a) Proposed Action

Direct and Indirect Effects

The new requirements in this proposed rule are of an administrative or procedural nature and primarily pertain to establishing an efficient competitive process to obtain fair market value for the use of public lands for solar and wind energy, as FLPMA requires. A programmatic analysis of the environmental effects of the BLM’s Solar and Wind Energy Development Programs has already been completed in the Solar and Wind PEISs described above. These documents have analyzed, to the extent practicable, the environmental effects of the establishment of BLM’s Wind and Solar Energy Programs, establishing clear requirements for excluding sensitive areas, and providing for future site-specific analysis of impacts of particular projects. While the

proposed rule would be used to authorize both wind and solar energy projects, the proposed rule itself does not contribute to any direct or indirect effect associated with the development programs analyzed in the two PEISs.

The proposed rule contains provisions that outline how the BLM would comply with NEPA while processing solar and wind applications. This action would affect the project-specific environmental review process outside of designated leasing areas. Subpart 2804 of the proposed regulations would require the BLM, in coordination with other Federal, state, local agencies and Tribes, and the public to evaluate applications for solar or wind energy development before either denying the application or deciding to continue processing the application. Subsequently, the BLM would prioritize the application for processing based upon screening criteria. Prioritization of the applications is established after consideration of known environmental factors, national designations, and land use planning decisions of the application area. Early review of these criteria with a project application allows for their consideration in the application and development of a project through macro and micro siting changes and development of design features for specific resources such as endangered species or cultural and historic properties. A proposed project with fewer conflicts and a lesser degree of environmental impacts would be given priority over a project with more conflicts and greater environmental impacts. The prioritization of an application incentivizes the thoughtful and reasonable development of the public lands, establishing an agency emphasis on giving priority to applications that meet the appropriate prioritization category criteria. Like the existing regulations, the proposed regulations would then require the BLM either to complete a NEPA analysis or rely on a previously completed NEPA analysis before issuing a ROW grant.

The existing rules identify terms and conditions for rights-of-way issued by the BLM. The proposed rule would clarify existing regulations and codify existing policy requirements to remove procedural uncertainty. The proposed amendments to the terms and conditions are generally administrative in nature, such as common use of rights-of-way or maintenance and repair of facilities. Since the proposed rule would clarify existing regulations or codify existing policy, there is no change to existing requirements.

The existing rules identify rental requirements for use of the public land within the authority granted it by FLPMA. Through statutory policy in FLPMA, the BLM must receive fair market value for the use of the public lands and their resources. The BLM would establish a schedule for acreage rent specific for solar or wind rights-of-way and a fee per MW for generation of energy that captures the value for the increased industrial use of the right-of-way. The proposed amendments to the ROW rental structure are administrative in nature and will be used to help determine fair market value for the use of the public lands, as determined by the Secretary through the BLM.

Existing regulatory authority requires the payment for use of the public land and resources. Within the proposed rule, the BLM clarifies how and when it may retroactively collect rent for the use of the public land. This proposed amendment to the rule is directed at providing administrative clarity for rent on the public land and does not affect rent outside the scope of the current regulatory authority of BLM.

Within the proposed rule the BLM clarifies performance and reclamation bonding requirements for all rights-of-way and for those specific to solar and wind. The existing rule describes the BLM's authority for collecting a bond for right-of-way authorizations, but leaves the bond as a discretionary action for BLM to require. The proposed rule clarifies what a right-of-way holder's bond is responsible for, what the BLM would consider in determining the bond amount that the BLM would collect for a right-of-way, and establishes minimum bond amounts specific for solar and wind.

The BLM would require a bond for each solar or wind right-of-way on the public lands. The Solar and Wind PEISs considered how the BLM might use a reclamation cost estimate to determine the amount of a performance and reclamation bond.

For the holder of a solar or wind right-of-way authorization, a bond would be required and held by the BLM in the event that a holder is unable or unwilling to remove the authorized facilities as required. The proposed rule would update and codify existing minimum bonding requirements set by policy for solar and wind energy development right-of-way grants and establish a standard bond for solar or wind energy development right-of-way leases. The BLM proposes to update minimum bond amounts for right-of-way grants after review of recent solar and wind energy project bonds and their reclamation cost estimates.

Based upon site-specific requirements, a right-of-way grant's bond may be higher than the minimum bond amount and would be determined based on the reclamation cost estimate. The bond amount for these grants, which would be issued outside of designated leasing areas, would be sufficient for the BLM to reclaim the land affected by the right-of-way if the holder were to default.

The standard bond for right-of-way leases would equal the proposed minimum bond amounts outside a designated leasing area for solar and wind energy development. The bond amount for these leases, which would be issued inside designated leasing areas, is based on an average of existing projects, so the standard bond amount is not expected to vary greatly from the final bond amounts of projects outside of designated leasing areas.

There is still the potential for the standard bond amount to be insufficient to fully reclaim areas of the public lands affected by a right-of-way. Right-of-way holders are liable for all costs associated with the right-of-way, including the costs of full reclamation. If the holder were to go bankrupt or for some other reason not be in a position to fully reclaim the land, then the BLM would rely on the bond to fund any necessary reclamation. If the bond amount were inadequate to fully reclaim the public lands affected by a right-of-way, then the BLM may not be able to remove the facilities from the affected lands or perform other reclamation activities to return the lands to a satisfactory condition. Though the environmental effects of this proposed standard bond requirement are too broad, speculative, and conjectural to assess for this proposed rulemaking, on a project-by-project basis it is possible that use of a standard bond, as described in the proposed rule, could adversely affect environmental and cultural resources on the land in the right-of-way or surrounding areas. For example, facilities not removed from the right-of-way could continue to impact visual resources, or the habitat for local wildlife may not be fully restored on the right-of-way and this may create stress on surrounding areas.

However, the BLM would only use standard bond amounts in designated leasing areas. Such areas would be identified in part because there is less potential for impacts to sensitive resources than in other BLM-managed lands.

Subpart 2809 of the proposed regulations would require the BLM to review nominations of lands for solar and wind energy development within designated leasing areas, identify parcels that are most suitable to be offered competitively, and to complete the work necessary—including NEPA and other required reviews—to prepare the selected parcels for a competitive offer.

The elements of the Solar Energy Development Program and the associated land use plan amendments were evaluated through the preparation of the *Final Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States*. The PEIS contained an environmental analysis of the anticipated types of impacts on natural and cultural resources on public lands that might result from the development of utility-scale solar facilities. For the 17 proposed SEZs, a much finer scale of impact analysis was conducted in order to streamline the process of authorizing projects within these areas. A summary of the detailed impact analysis can be found in Appendix B to this EA. Consideration of development proposals within the SEZs will require additional site-specific environmental analysis, but that analysis will incorporate the analyses from the PEIS; in other words, further environmental analysis of the SEZs will “tier” to the PEIS. The process for considering development in the variance areas will also tier to the PEIS to the extent practical and will fully consider site-specific conditions.

The Wind Energy Development Program and the associated land use plan amendments were evaluated through the preparation of the *Final Programmatic Environmental Impact Statement on Wind Energy Development on BLM-Administered Lands in the Western United States*. The PEIS contained an environmental analysis of the potential environmental impacts to natural and cultural resources on public lands that might result from the development of commercial wind energy facilities. A summary of the potential environmental impacts can be found in Appendix A to this EA. The PEIS assumes that additional site-specific analysis of proposed projects would be required under NEPA, but that additional NEPA analyses would be tiered to the PEIS.

The proposed rule would provide for project-specific NEPA analyses both inside and outside of designated leasing areas. The proposed rule is primarily administrative, legal and procedural in nature, because it would establish a new competitive process. The BLM has determined that the proposed rule, if adopted as a final rule, would have no indirect impacts.

Promulgating the proposed rule could have the positive economic impact of capturing the fair market value for the use of public lands through competitive processes that are more clearly identified than the existing competitive process.

Cumulative Effects

The CEQ regulations define cumulative effects as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably

foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions” (40 CFR 1508.7). Since there are no direct or indirect environmental effects of the proposed regulation, there are no cumulative environmental effects.

(b) No Action

Direct and Indirect Effects

The existing regulation is primarily administrative, legal, or procedural in nature with no direct or indirect effects on the environment.

Cumulative Effects

Because there are no direct or indirect environmental effects of the no action alternative, there are no cumulative environmental effects.

VII. Tribes, Individuals, Organizations, and Agencies Consulted

(a) Tribes Consulted

Tribes were consulted in the development of the *Final Programmatic Environmental Impact Statement on Wind Energy Development on BLM-Administered Lands in the Western United States* and the *Final Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States*. The summary of Tribal consultation for the Wind Energy Program is included in Chapter 7.3 of the Final Wind PEIS. While all Tribes located in or with interests in the 11-state study area were contacted by the BLM State Directors, only three Tribes indicated an interest in consultation.

For the Solar PEIS, in addition to public scoping, the BLM initiated government-to-government consultation with 316 Tribes, chapters, and bands with a potential interest in solar energy development on BLM-administered public lands in the six southwestern states. Consultation in the form of correspondence; telephone conversations; e-mails; and transmission of maps, documents, and reports has taken place with more than 65 Tribes. Face-to-face meetings occurred with 18 Tribes and 15 federally recognized Tribes commented on the Draft Solar PEIS and the Supplement to the Draft. A summary of consultation can be found in Appendix K of the Final PEIS.

Tribes were not directly contacted for the competitive lease rule for solar and wind energy development. The rule is a BLM administrative and procedural action and does not have any tribal implications. Tribes were consulted during the preparation of both the Wind and Solar Energy PEISs. Future Tribal consultation will occur when site-specific solar or wind energy

projects are proposed. The *Advance Notice of Proposed Rulemaking Regarding a Competitive Process for Leasing Public Lands for Solar and Wind Energy Development* (ANPR) was published in the *Federal Register* on December 29, 2012.⁸ No comments were received from a tribe for the ANPR. Further opportunity for tribal comments will be available when the proposed rule is published in the *Federal Register* for public comment.

(b) Others Consulted

As stated in Section III of the ANPR, the notice explained that the BLM believed a rulemaking allowing a competitive leasing process would enhance its ability to capture fair market value for the use of public lands. It also described how the Wind PEIS and Solar PEIS had identified areas with wind and solar energy development potential and fewer resource conflicts.

To facilitate public comments and suggestions on the scope of such competitive processes and guide development of such processes, the BLM posed the following questions:

- (1) How should a competitive process be structured for leasing lands within designated solar or wind energy development leasing areas?
- (2) Should a competitive leasing process be implemented for public lands outside of designated solar or wind energy development leasing areas? If so, how should such a competitive leasing process be structured?
- (3) What competitive bidding procedures should the BLM adopt?
- (4) What is the appropriate term for a competitive solar energy ROW lease?
- (5) What is the appropriate term for a competitive wind energy ROW lease?
- (6) Should nomination fees be established for the competitive process? If so, how should the fees be determined?
- (7) How should the bidding process for competitive solar and wind ROW leases be structured to ensure receipt of fair market value?
- (8) Should a standard performance bond be required for competitive solar and wind energy ROW leases and how should the bond amount be determined?
- (9) What diligent development requirements should be included in competitive solar and wind energy ROW leases?

The BLM received input from 76 industry representatives, environmental groups, individuals, and local and state governments who provided comments and suggestions, and the BLM used them to the extent possible in drafting the proposed rule. Commenters were generally supportive of a new competitive leasing process within wind and solar designated leasing areas and the existing competitive application process for lands outside these areas; the proposed rule adopts that approach. Comments on a bidding process included requests that the process be clearly defined, that fair market value be obtained, that competitive bidding should be used, and that the bid selection process take more into account than just the dollar amount of the highest bid. The proposed rule attempts to address these suggestions and contains a provision for the BLM to halt the competitive leasing process if there is insufficient interest in the process.

⁸ *Federal Register*, Vol. 76, No. 250, pages 81906–81908, Thursday, December 29, 2011.

The majority of commenters suggested a 25- to 30-year timeframe for grant or lease authorizations; the proposed rule includes a 30-year term for both. Most commenters suggested that a nomination fee be required to allow the BLM to recover its costs; this suggestion is incorporated in the proposed rule.

Some commenters, in response to the question of how to ensure receipt of fair market value, expressed their opposition to the competitive bidding process, whereas others proposed varying models for establishing a lease rate. There was general agreement, however, that performance bonds should be required; the proposed rule includes such provision. Commenters were also generally supportive of due diligence requirements in leases.

The BLM, in its discretion, will make this EA and an unsigned FONSI available for public review on the BLM's website at blm.gov. These documents will be available to the public to better inform them of the proposed rule.

VIII. List of Preparers

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APPENDIX A

Wind Energy Development Program, Summary of Impact Assessment

A.1. Introduction

The Record of Decision (ROD) for the *Final Programmatic Environmental Impact Statement on Wind Energy Development on BLM-Administered Lands in the Western United States* (Final Wind PEIS) was published in December of 2005. The scope of the Final Wind PEIS analysis included an assessment of positive and negative environmental, social, and economic impacts; discussion of relevant mitigation measures to address these impacts; and identification of appropriate, programmatic policies and best management practices (BMPs) to be included in the proposed Wind Energy Development Program. The scope included all Bureau of Land Management-administered (BLM-administered) lands in the western United States, excluding Alaska. These lands are located in 11 states: Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming. A maximum potential development scenario (MPDS) was developed to help define the potential magnitude of future wind energy development activities on BLM-administered lands within these states. Additional modeling was conducted to consider the impact of various economic factors affecting wind energy development and to define how much wind power might be generated over the next 20 years within the 11-state study area.

The Final Wind PEIS also assessed the proposed amendment of 52 BLM land use plans. The proposed amendments included: (1) Adoption of the proposed programmatic policies and BMPs; and (2) Identification of specific areas where wind energy development would not be allowed. None of the proposed amendments addressed designation of lands for competitive right-of-way (ROW) bidding processes, although this was identified as a possibility in the Notice of Intent (NOI). Interest in competitive bidding processes was limited to two areas and was addressed in local BLM land use planning efforts.

As a programmatic evaluation, the Final Wind PEIS did not evaluate site-specific issues associated with individual wind energy development projects. A variety of location-specific factors (e.g., soil type, watershed, habitat, vegetation, viewshed, public sentiment, the presence of threatened and endangered species, and the presence of cultural resources) would vary considerably from site to site, especially over an 11-state region. In addition, the variations in project size and design would greatly determine the magnitude of the impacts from given projects. The combined effects of these location-specific and project-specific factors cannot be fully anticipated or addressed in a programmatic analysis; such effects must be evaluated at the project level.

Table A-1 was developed from the impact analysis included in Chapter 5 of the Final Wind PEIS¹ and is presented as a visual summary of the anticipated impacts of the proposed action

¹ The complete Final Wind PEIS and ROD, as well as other supporting documents, can be found at <http://windeis.anl.gov>.

disclosed in the Final Wind PEIS. The impact analysis looked at 20 resource areas or programs and analyzed potential impacts for the four stages of development in a typical wind energy project.

Following the table is a narrative summary of the three alternatives that were considered in the Final Wind PEIS. This narrative was excerpted from the Executive Summary in the Final Wind PEIS.

TABLE A-1 Potential Impacts of Wind Energy Development as Summarized from the Wind PEIS

Natural and Cultural Resources, and Land Uses	Monitoring and Testing Stage	Construction Stage		Operations Stage	Decommissioning Stage	Comments
Geologic Resources	No significant impact	Measurable impact requiring mitigation		No significant impact	No significant impact	Sand and gravel use during construction.
Soils	No significant impact	Minimal or short-term impact		No significant impact	Minimal or short-term impact	Most soil disturbance will be stabilized seeding.
Paleontological Resources	Other ^a	Other	Measurable impact requiring mitigation	Other	Other	Requires case-by-case assessment of non-renewable resource. Construction stage most likely to cause damage.
Water Resources/Quality	No significant impact	Minimal or short-term impact		No significant impact	Minimal or short-term impact	Water use for dust control and concrete production. Alteration of surface flow by roads.
Air Quality	No significant impact	Measurable impact requiring mitigation		No significant impact	Measurable impact requiring mitigation	Dust; employee, construction, and delivery vehicles; vegetation clearing; and batch plant emissions.
Noise	No significant impact	Minimal or short-term impact		No significant impact	Minimal or short-term impact	Localized, rural areas, construction machinery, and blasting.
Transportation	No significant impact	Measurable impact requiring mitigation		No significant impact	Measurable impact requiring mitigation	Overweight, oversize vehicles, increased traffic, road and bridge damage, access road construction.
Hazardous Materials, Waste Management	No significant impact	No significant impact		No significant impact	No significant impact	Standard practices greatly reduce the chance of spills, disposal of construction and demolition materials.

Health and Safety	No significant impact	Measurable impact requiring mitigation	Measurable impact requiring mitigation	Measurable impact requiring mitigation	Construction hazards, large vehicle traffic, impact on nearby homes – low-frequency noise, shadow flicker, aviation hazard.
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TABLE A-1 (Cont.)

Natural and Cultural Resources, and Land Uses	Monitoring and Testing Stage		Construction Stage		Operations Stage		Decommissioning Stage		Comments
	Other	Measurable impact requiring mitigation	Other	Measurable impact requiring mitigation	Other	Measurable impact requiring mitigation	Other	Measurable impact requiring mitigation	
Vegetation	No significant impact		Minimal or short-term impact		No significant impact		Minimal or short-term impact		5–10% of site permanently disturbed. Risk of introduction of invasive species, plant collection.
Wildlife	No significant impact		Other	Measurable impact requiring mitigation	Other	Measurable impact requiring mitigation	Other	Measurable impact requiring mitigation	Reduced habitat quality (foraging, migration, reproduction), human disturbance, impact on migratory birds/bats, invasive vegetation, roads and transmission lines.
Wetland and Aquatic Biota	No significant impact		Minimal or short-term impact		No significant impact		Minimal or short-term impact		Road impact to drainages, sediment deposition in streams and wetlands from construction.
Threatened and Endangered Species	Other	Measurable impact requiring mitigation	Other	Measurable impact requiring mitigation	Other	Measurable impact requiring mitigation	Other	Measurable impact requiring mitigation	Site-specific; likely avoidance of sensitive habitats. Construction and decommissioning stage sensitive for most species although operations also could adversely impact migratory birds/bats. Roads and transmission lines.

TABLE A-1 (Cont.)

Natural and Cultural Resources, and Land Uses	Monitoring and Testing Stage	Construction Stage		Operations Stage		Decommissioning Stage	Comments
Aviation	No significant impact	No significant impact		No significant impact		No significant impact	Federal Aviation Administration guidelines are clear about consultation on location of, and hazard marking of facilities.
Military Operations	No significant impact	Other		Other		No significant impact	Numerous military training routes in the west; needs close coordination with military to minimize impact to military training
Recreation	No significant impact	Other	Measurable impact requiring mitigation	Other	Measurable impact requiring mitigation	No significant impact	Wind and solar facilities largely incompatible with some recreation uses; impact on viewshed of sensitive recreation areas (wilderness parks, etc.) and recreation use.
Visual Resources	No significant impact	Other		Other		Other	Potential to adversely affect large areas, residences, and specially designated areas.
Cultural Resources	No significant impact	Other	Measurable impact requiring mitigation	Other	Measurable impact requiring mitigation	Minimal or short-term impact	Disturbance/loss of cultural sites, long-term monitoring, increased human access, tribal concerns; most impacts in early stages.
Economics	No significant impact	Minimal or short-term impact		Minimal or short-term impact		Minimal or short-term impact	There would be positive economic impacts, especially in California and Nevada; impacts would be small compared to state economies, but could be locally significant.

TABLE A-1 (Cont.)

Natural and Cultural Resources, and Land Uses	Monitoring and Testing Stage	Construction Stage	Operations Stage	Decommissioning Stage	Comments
Environmental Justice (EJ)	No significant impact	Other	Other	Other	There could be EJ concerns if any adverse effects were significantly high and if they would disproportionately affected minority and low-income populations.

^a Other = For example, site-specific analysis of individual projects required on a case-by-case basis.

A.2. Summary of Wind PEIS Alternatives

A.2 (a) Summary of Impacts

Potential adverse impacts on natural and cultural resources could occur during each stage of wind energy development (i.e., site monitoring and testing, construction, operation, and decommissioning) if effective mitigation measures are not implemented. The nature and magnitude of these impacts would vary by stage and would be determined by the project location and size. Potential direct impacts would include use of geologic and water resources; creation or increase of geologic hazards or soil erosion; water quality degradation; localized generation of airborne dust; generation of noise; alteration or degradation of wildlife habitat or sensitive or unique habitat; interference with resident or migratory fish or wildlife species, including protected species; alteration or degradation of plant communities, including the occurrence of invasive vegetation; land use changes; alteration of visual resources; release of hazardous materials or wastes; increased traffic; increased human health and safety hazards; and destruction or loss of paleontological or cultural resources. More limited, potential indirect impacts on cultural and ecological resources could also occur.

Effective mitigation measures could be implemented to address many of the direct and indirect adverse impacts that could occur. For some resources, minimum requirements could be established that would effectively mitigate impacts at all potential development sites. For other resources, however, such as ecological and visual resources, mitigation would be better defined at the project level to address site-specific and species-specific concerns.

The potential impacts of wind energy development on local and regional economies would be largely beneficial, depending upon the size of the project and the resultant wind power capacity.

The proposed action and its alternatives presented options for the management of wind energy development on BLM-administered lands. A brief summary of the effectiveness of each of the alternatives at mitigating potential adverse impacts and facilitating wind energy development is provided in the following sections.

Proposed Action: Implement the Wind Energy Development Program

The proposed Wind Energy Development Program policies and BMPs would establish a comprehensive mechanism for ensuring that the impacts of wind energy development on BLM-administered lands would be kept to a minimum. The proposed policies and BMPs were generated on the basis of an impact analysis conducted for the Wind PEIS and reviews of relevant mitigation measures; they would be applicable to all wind energy development projects. These elements of the program, along with the proposed amendment of BLM land use plans, would likely result in shorter timelines and reduced costs for wind energy projects, thereby facilitating development.

In terms of facilitating wind energy development, implementation of the proposed action would be expected to minimize some of the delays that currently occur for wind energy development projects and reduce costs. In addition, the proposed program would ensure consistency in the way ROW applications and authorizations for wind energy development are managed. These benefits would be realized as a result of the emphasis on site-specific and species-specific concerns during the project-level environmental analyses, the amendment of numerous land use plans to address wind energy development, and the potential to tier future National Environmental Policy Act of 1969 (NEPA) analyses off of the Wind PEIS and decisions in the resultant ROD.

In terms of mitigating adverse environmental impacts, the proposed policies would identify specific lands on which wind energy development would not be allowed; establish requirements for public involvement, consultation with other Federal and state agencies, and government-to-government consultation; define the need for project-level environmental review; establish requirements for the scope and content of the project Plan of Development (POD); and incorporate adaptive management strategies. The proposed BMPs would establish environmentally sound and economically feasible mechanisms to protect and enhance natural and cultural resources. They would identify the issues and concerns that must be addressed by project-specific plans, programs, and stipulations during each stage of development. Mitigation measures protecting these resources would be required to be incorporated into project PODs; this would include incorporation of specific programmatic BMPs as well as the incorporation of additional mitigation measures contained in other existing and relevant BLM guidance, or developed to address site-specific or species-specific concerns.

Implementation of the proposed program would ensure that potential adverse impacts on most of the natural and cultural resources present at wind energy development sites, except wildlife and visual resources would be minimal to negligible. This includes potential impacts on soils and geologic resources, paleontological resources, water resources, air quality, noise, land use, and cultural resources not having a visual component. Potential impacts on wildlife would be considerably reduced by the programmatic BMPs and by the requirement that site-specific and species-specific concerns be addressed comprehensively at the project level. While it is possible that adverse impacts on wildlife could occur at some of the future wind energy development sites, the magnitude of these impacts and the degree to which they could be successfully mitigated would vary from site to site. Similarly, the proposed program would reduce potential impacts on visual resources, although the degree to which this could be achieved would be site-specific; this includes cultural resources that have a visual component (e.g., sacred landscapes). The proposed program would require that the public be involved in and informed regarding potential visual impacts of a specific project during the project approval process. Minimum requirements regarding project design would be incorporated into individual project plans. Ultimately, determinations regarding the magnitude of potential visual impacts would be made by local stakeholders.

Finally, with respect to potential environmental impacts, the proposed requirement for the BLM and operators to adopt adaptive management strategies would further ensure that potential environmental impacts would be kept to a minimum. This includes requirements for periodic review and revision of programmatic policies and BMPs; comprehensive site monitoring

programs, including metrics for measuring impacts; and protocols for incorporating monitoring observations and new mitigation measures into standard operating procedures and project-specific BMPs.

The potential economic impacts of the proposed action would generally be beneficial to local and regional economies. The projected development would result in new jobs and increased income, gross state product, sales tax, and income tax in each of the 11 states during both construction and operation. Impacts on residential property values associated with proximity to wind energy projects were not calculated in the Wind PEIS; however, other studies of these impacts suggest that there would not be any measurable negative impacts.

In terms of cumulative impacts under the proposed action, the potential for wind energy development on BLM-administered lands, as projected by the MPDS, is relatively small compared both with other commercial uses of BLM-administered lands and with projected levels of wind energy development on non-BLM-administered lands. Under the proposed action, potential environmental impacts would be mitigated to the maximum extent possible by the programmatic policies and BMPs. Provided that the level of development falls within the MPDS projections for the next 20 years and that the proposed policies and BMPs are implemented, the cumulative impacts of the proposed action are unlikely to be significant. Individual site-specific wind energy projects on BLM-administered lands that are within the scope of this cumulative analysis and in accordance with the Wind Energy Development Program described by the proposed action are considered to have been adequately addressed by the Wind PEIS.

No Action Alternative

Under this alternative, wind energy development would be subject to the terms and conditions of the Interim Wind Energy Development Policy. The interim policy establishes some restrictions on lands that can be developed and includes requirements for environmental review of individual projects in accordance with NEPA. Comprehensive guidance regarding mitigation of potential adverse impacts is not included in the interim policy. In addition, under this alternative, land use plan amendments to address wind energy development would occur only on a plan-by-plan basis.

In terms of facilitating development, the absence of a BLM Wind Energy Development Program would likely cause wind energy development on BLM-administered lands to occur at a slower pace than under the proposed action. The anticipated benefits of the Wind Energy Development Program, in terms of the availability of comprehensive BMP requirements, land use plan amendments, and tiered NEPA analyses, would not be realized under the no action alternative. One can predict that without these benefits, the length of time needed to review, process, and approve ROW applications for wind energy projects would increase. Extended timelines usually translate into increased costs, and the cost per unit of wind power developed would likely be greater under the no action alternative than under the proposed action. This could result in delays in establishing necessary project financing and power market contracts. Furthermore, developers may elect to avoid delay and uncertainty by shifting their projects to state, Tribal, and private land with potentially less Federal environmental oversight.

In terms of mitigating adverse environmental impacts, implementation of the interim policy requirements for project-specific environmental reviews would likely result in the development of effective mitigation measures for individual wind energy projects. In that event, the potential adverse impacts on natural and cultural resources would be similar to those of the proposed action. The absence of a Wind Energy Development Program, however, could result in inconsistencies in the type and degree of mitigation required for individual projects.

Economic benefits also would be realized locally and regionally under the no action alternative. However, if the amount of wind energy development was reduced as a result of real or perceived impediments to development on BLM-administered lands, the economic benefits to local communities adjacent to BLM-administered lands in the west could be reduced.

Limited Wind Energy Development Alternative

Under this alternative, the amount of wind energy development would be greatly restricted in comparison to both the proposed action and the no action alternative. Therefore, in terms of facilitating wind energy development, this alternative would be the least effective of the three alternatives considered. In terms of mitigating potential environmental impacts, the required project-specific reviews, including NEPA analyses, would likely result in effective mitigation so that local impacts would be reduced to the greatest extent possible. Potential regional impacts, including beneficial economic impacts, would be lower under this alternative because of the limited level of development on BLM-administered lands.

A.2 (b) Conclusions

The Wind PEIS is consistent with the requirements promulgated by the Federal Land Policy and Management Act of 1976 (FLPMA); NEPA (42 U.S.C. 4321), as amended; and Council on Environmental Quality regulations (Code of Federal Regulations, Title 40, Parts 1500–1508 (40 CFR Parts 1500–1508)). A scoping process was conducted to obtain input from individuals, public interest organizations, and governmental agencies, and this input was used to develop the alternatives and issues considered in the Wind PEIS. The Draft Wind PEIS was made available for public review, and comments received during that review were considered and incorporated into the Final Wind PEIS as appropriate. The Final Wind PEIS met all administrative and procedural requirements.

On the basis of the impact analyses presented in the Wind PEIS, the proposed action was identified as presenting the best approach for managing wind energy development on BLM-administered lands. The Wind Energy Development Program was identified as likely to result in the greatest amount of wind energy development over the next 20 years, at the lowest potential cost to industry. Simultaneously, the proposed action was identified as providing the most comprehensive approach for ensuring that potential adverse impacts would be minimized to the greatest extent possible. And, finally, the proposed action was identified as likely to provide the greatest economic benefits to local communities and the region as a whole. As a result, the

proposed action was identified as best meeting the objectives of the National Energy Policy recommendations to increase renewable energy production on Federal lands.

APPENDIX B

Solar Energy Program, Summary of Impact Assessment

B.1 Background

The Record of Decision (ROD) for the *Final Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States* (Final Solar PEIS) established a comprehensive Solar Energy Program and amended 89 Bureau of Land Management (BLM) land use plans to guide the processing of new utility-scale solar energy applications on BLM-administered land. The scope of the Final Solar PEIS analysis included an assessment of positive and negative environmental, social, and economic impacts; identification of required programmatic design features to address these impacts; and identification of appropriate, programmatic policies that were included in the Wind Energy Development Program. A reasonably foreseeable development scenario (RFDS) was developed to help define the potential magnitude of future solar energy development activities on BLM-administered lands within the six-state study area.

Through the Solar PEIS, the BLM evaluated three alternatives for managing utility-scale solar energy development on BLM-administered lands in the six-state study area. These alternatives included two action alternatives—a solar energy development program alternative and a Solar Energy Zone (SEZ) program alternative—and a no action alternative. The solar energy development program alternative was identified in the Final Solar PEIS as the BLM’s preferred alternative.

Under the solar energy development program alternative (referred to as the “program alternative”), the BLM proposed categories of lands to be excluded from utility-scale solar energy development (about 79 million acres [319,702 km²] proposed for exclusion) and identified specific locations well suited for utility-scale production of solar energy (i.e., SEZs) where the BLM proposed to prioritize development (about 285,000 acres [1,553 km²] in SEZs). The program alternative emphasized and incentivized development within SEZs and proposed a collaborative process to identify additional SEZs. To accommodate the flexibility described in the BLM’s program objectives, the program alternative allowed for responsible utility-scale solar energy development in variance areas outside of SEZs in accordance with a proposed variance process (about 19 million acres [82,964 km²] in variance areas). The program alternative also established programmatic design features for utility-scale solar energy development on BLM-administered lands.

Under the SEZ program alternative (referred to as the “SEZ alternative”), the BLM would restrict utility-scale solar energy development to SEZs only, and identify all other lands as exclusion areas for utility-scale solar energy development (approximately 98 million acres [396,600 km²]). Under the SEZ alternative, the same programmatic design features applicable to the program alternative would apply to utility-scale solar energy development in SEZs, and new or expanded SEZs would be identified in the future following the collaborative identification process mentioned above.

Under the no action alternative, the BLM would continue the issuance of ROW authorizations for utility-scale solar energy development on BLM-administered lands by implementing the requirements of the BLM's existing solar energy policies on a project-by-project basis. Lands available for solar energy development would include those areas currently allowable under existing applicable laws and statutes (approximately 98 million acres [396,600 km²] in the six-state study area) and in conformance with the approved land use plans. The BLM would not implement any of the proposed elements of the Solar Energy Program described in the two action alternatives.

Table B-1 was included in the Final Solar PEIS as Table 6.1-2. The in-depth analyses of potential impacts of development in the proposed SEZs, as presented in Chapters 8 through 13 of the Draft and Final Solar PEIS, provided part of the basis for the summary of impacts of the SEZ alternative that is provided in Table B-1. The SEZ analyses included an assessment of cumulative impacts, considering ongoing and reasonably foreseeable actions specifically for the vicinity of each SEZ.

The impacts of solar development itself were largely similar across the program alternatives presented in the Final Solar PEIS. However, because the alternatives represent planning-level decisions (i.e., allocation and exclusion decisions), differences between the alternatives were found in the location, pace, and concentration of solar energy development.

TABLE B-1 Summary-Level Assessment of Potential Environmental Impacts of Utility-Scale Solar Energy Development by Alternative

Resource	Program Alternative (approximately 285,000 acres ^b in priority areas, and approximately 19 million acres subject to variance process)	SEZ Alternative (approximately 285,000 acres in priority areas)	No Action Alternative (approximately 98 million acres available for application)
Lands and Realty	<p>Solar energy development would preclude other land uses within the project footprint and could alter the character of largely rural areas. Development of supporting infrastructure (e.g., new transmission lines and roads) would also locally affect land use. These impacts potentially could be dispersed across the 19 million acres of variance areas; however, impacts would be minimized due to the required variance process.</p> <p>Design features could effectively avoid or minimize many impacts.</p>	<p>Same impacts as program alternative, except impacts would be concentrated into a smaller, known geographic area.</p>	<p>Same impacts as program alternative, except impacts could potentially be more dispersed. There would be no specific design features to reduce impacts.</p>
Specially Designated Areas and Lands with Wilderness Characteristics	<p>Specially designated areas and lands with wilderness characteristics could be significantly affected through direct and indirect impacts (e.g., visual impacts, reduced access, noise impacts, and fugitive dust) during both the construction and operations stages. Similar impacts potentially could be dispersed across the 19 million acres of variance areas; however, impacts would be minimized due to the required variance process.</p> <p>Design features could effectively avoid or minimize many impacts.</p> <p>All NLCS lands would be excluded. Also excluded would be ACECs; SRMAs (except in Nevada and portions of the Yuma East SRMA in Arizona); DWMAs; National Recreation Trails and National Backcountry Byways; National Historic and Scenic Trails; Wild, Scenic, and Recreational Rivers, and segments of rivers determined to be eligible or suitable for Wild and Scenic River status; and lands within the proposed Mojave Trails National Monument.</p> <p>All areas where there is an applicable land use plan decision to protect lands with wilderness characteristics would be excluded.</p>	<p>Same impacts as program alternative, except impacts would be concentrated into a smaller, known geographic area. This concentration of development could increase the magnitude of potential impacts but affect a smaller number of areas.</p>	<p>Same impacts as program alternative, except that only most NLCS lands are excluded from solar energy development and other exclusions do not apply. There would be no specific design features to reduce impacts.</p> <p>Impacts could potentially be more dispersed and greater on specially designated lands and lands with wilderness characteristics due to few exclusions under the no action alternative.</p>

TABLE B-1 (Cont.)

Resource	Program Alternative (approximately 285,000 acres in priority areas) (approximately 19 million acres subject to variance process)	SEZ Alternative (approximately 285,000 acres in priority areas)	No Action Alternative (approximately 98 million acres available for application)
Rangeland Resources	<p>Some livestock grazing allotments may be affected by solar energy development through reductions in acreage and/or loss of AUMs.</p> <p>Wild horses and burros also could be affected, with animals displaced from the development area; the number of wild horse and burro HMAs overlapping with or in the vicinity of lands available for ROW application would be less than under the no action alternative.</p> <p>These impacts potentially could be dispersed across the 19 million acres of variance areas; however, impacts would be minimized due to the required variance process.</p> <p>Design features could effectively avoid or minimize many impacts.</p>	<p>Same impacts as program alternative, except impacts would be concentrated into a smaller geographic area within a known set of grazing allotments and HMAs (there is very little overlap of SEZs with wild horse and burro HMAs).</p>	<p>Same impacts as program alternative, except impacts could potentially be more dispersed, and there is less certainty about which grazing allotments and HMAs potentially could be affected. There would be no specific design features to reduce impacts.</p>
Recreation	<p>Recreational uses would be precluded within lands used for solar energy development. Recreational experiences could be adversely affected in areas proximate to solar energy projects and related transmission. These impacts potentially could be dispersed across the 19 million acres of variance areas; however, impacts would be minimized due to the required variance process.</p> <p>Design features could effectively avoid or minimize many impacts.</p> <p>All SRMAs are excluded from solar energy development (except in Nevada and portions of the Yuma East SRMA in Arizona). Also excluded are developed recreational facilities and special-use permit recreation sites.</p>	<p>Same impacts as program alternative, except impacts would be concentrated into a smaller, known geographic area. This could increase the magnitude of potential impacts but affect fewer recreational resources.</p>	<p>Same impacts as program alternative. There would be no explicit exclusions to avoid SRMAs, recreational facilities, and special-use permit recreation sites. There would be no specific design features to reduce impacts.</p> <p>Impacts could potentially be more dispersed and greater on those recreational areas that would be excluded under the action alternatives.</p>

TABLE B-1 (Cont.)

Resource	Program Alternative (approximately 285,000 acres in priority areas) (approximately 19 million acres subject to variance process)	SEZ Alternative (approximately 285,000 acres in priority areas)	No Action Alternative (approximately 98 million acres available for application)
Military and Civilian Aviation	Military and civilian aviation impacts would be identified and adequately avoided, minimized, and/or mitigated prior to the BLM's issuance of a ROW authorization.	Same impacts as program alternative, except impacts would be concentrated into a smaller, known geographic area.	Same impacts as program alternative, except impacts could potentially be more dispersed.
Soil Resources and Geologic Hazards	Development of large tracts of land up to several thousand acres for solar energy facilities and related infrastructure would result in impacts on soil resources in terms of soil compaction and erosion, although these impacts could be effectively avoided, minimized, and/or mitigated. Impacts on biological soil crusts would be long term and possibly irreversible. These impacts potentially could be dispersed across the 19 million acres of variance areas; however, impacts would be minimized due to the required variance process. Design features could effectively avoid or minimize many impacts.	Same impacts as program alternative, except impacts would be concentrated into a smaller, known geographic area.	Same impacts as program alternative, except impacts could potentially be more dispersed. There would be no specific design features to reduce impacts.
Mineral Resources	Mineral development within the project footprint for solar energy development would generally be an incompatible use; however, some resources underlying the project area might be developable (e.g., directional drilling for oil and gas or geothermal resources, underground mining). These impacts potentially could be dispersed across the 19 million acres of variance areas; however, impacts would be minimized due to the required variance process. Lands within SEZs may be withdrawn from location and entry under the mining laws.	Same impacts as program alternative, except impacts would be concentrated into a smaller, known geographic area. Lands within SEZs may be withdrawn from location and entry under the mining laws.	Same impacts as program alternative, except impacts could be potentially more dispersed. No SEZs would be identified or withdrawn.

TABLE B-1 (Cont.)

Resource	Program Alternative (approximately 285,000 acres in priority areas) (approximately 19 million acres subject to variance process)	SEZ Alternative (approximately 285,000 acres in priority areas)	No Action Alternative (approximately 98 million acres available for application)
Water Resources	<p>Solar thermal projects with wet-cooling systems require large volumes of water, with potentially significant environmental impacts. Solar thermal projects with dry-cooling systems need less than one-tenth of the amount of water required for wet-cooling systems. Projects would necessarily be limited to locations with sufficient groundwater supplies where water rights and the approval of water authorities could be obtained.</p> <p>All solar energy facilities require smaller volumes of water for mirror or panel washing and potable water uses, which would result in relatively minor impacts on water supplies.</p> <p>Other potential impacts, including modification of surface and groundwater flow systems, water contamination resulting from chemical leaks or spills, and water quality degradation by runoff or excessive withdrawals, can be effectively avoided, minimized, and/or mitigated.</p> <p>Design features could effectively avoid or minimize many impacts.</p>	<p>Same impacts as program alternative, except impacts would be concentrated into a smaller, known geographic area. This could increase the magnitude of potential impacts but affect fewer water resources.</p>	<p>Same impacts as program alternative, except impacts could be potentially more dispersed. There would be no specific design features to reduce impacts.</p>
Vegetation	<p>Solar development will typically require the total removal of vegetation at most facilities, which could result in significant direct impacts in terms of increased risk of invasive species introduction, changes in species composition and distribution, habitat loss (e.g., dune or riparian areas), and damage to biological soil crusts. Indirect impacts also likely in terms of dust deposition, altered drainage patterns, runoff, and sedimentation. Impacts potentially could be dispersed across the 19 million acres of variance areas; however, impacts would be minimized due to the required variance process.</p>	<p>Same impacts as program alternative, except impacts would be concentrated into a smaller, known geographic area. This could increase the magnitude of potential impacts but affect a smaller number of areas.</p>	<p>Same impacts as program alternative. There would be no explicit exclusions to avoid known sensitive vegetation resources and no specific design features to reduce impacts.</p>

TABLE B-1 (Cont.)

Resource	Program Alternative (approximately 285,000 acres in priority areas) (approximately 19 million acres subject to variance process)	SEZ Alternative (approximately 285,000 acres in priority areas)	No Action Alternative (approximately 98 million acres available for application)
Vegetation (Cont.)	Design features could effectively avoid or minimize many impacts.		Impacts could potentially be more dispersed and greater on those vegetation resources excluded under the action alternatives.
	Less than 14% each of the Central Basin and Range and Chihuahuan Deserts Ecoregions, and less than 7% each of the Madrean Archipelago, Mojave Basin and Range, and Sonoran Basin and Range Ecoregions are located within the lands that would be available for application. Other ecoregions coincide with these lands at levels below 5%.	Of the five ecoregions that coincide with SEZs, less than 1% of each ecoregion would be available for ROW application.	Lands available for ROW application span 22 ecoregions. More than 50% of 2 ecoregions (Central Basin and Range, Northern Basin and Range) would be available for application.
	The land cover types for the following example species overlap with variance areas available for ROW application by the percentages shown: Joshua tree – less than 7% Saguaro – less than 7%	Less than 1% of the land cover type for Joshua tree and saguaro species is located within the SEZs.	The land cover types for the following example species overlap with the lands that would be available for ROW application by the percentages shown: Joshua tree – about 31% Saguaro – about 26%

TABLE B-1 (Cont.)

Resource	Program Alternative (approximately 285,000 acres in priority areas) (approximately 19 million acres subject to variance process)	SEZ Alternative (approximately 285,000 acres in priority areas)	No Action Alternative (approximately 98 million acres available for application)
Wildlife and Aquatic Biota	<p>Numerous wildlife species would be adversely affected by loss of habitat, disturbance, loss of food and prey species, loss of breeding areas, effects on movement and migration, introduction of new species, habitat fragmentation, and changes in water availability. Impacts potentially could be dispersed across the 19 million acres of variance areas; however, impacts would be minimized due to the required variance process.</p> <p>Design features could effectively avoid or minimize many impacts.</p> <p>Exclusion of ACECs, Research Natural Areas, big game migratory corridors and winter ranges, and lands with seasonal restrictions as identified in applicable land use plans would avoid impacts on wildlife in specific areas</p> <p>The following example species' habitats overlap with variance areas available for ROW application by the percentages shown:</p> <ul style="list-style-type: none"> Western rattlesnake – less than 6% Golden eagle – less than 6% Black-tailed jackrabbit – less than 6% Pronghorn – less than 5% Mule deer – less than 6% Mountain lion – less than 5% 	<p>Same impacts as program alternative, except the potential area of impact would be limited to a smaller, known geographic area.</p> <p>Less than 1% of the habitats for western rattlesnake, golden eagle, black-tailed jackrabbit, pronghorn, mule deer, and mountain lion are located within the SEZs.</p>	<p>Same impacts as program alternative. There would be no explicit exclusions to avoid known sensitive wildlife resources, and no specific design features to reduce impacts.</p> <p>Impacts could potentially be more dispersed and greater on those wildlife resources excluded under the action alternatives.</p> <p>The following example species' habitats overlap with the lands that would be available for ROW application by the percentages shown:</p> <ul style="list-style-type: none"> Western rattlesnake – about 27% Golden eagle – about 23% Black-tailed jackrabbit – about 24% Pronghorn – about 22% Mule deer – about 22% Mountain lion – about 21%

TABLE B-1 (Cont.)

Resource	Program Alternative (approximately 285,000 acres in priority areas) (approximately 19 million acres subject to variance process)	SEZ Alternative (approximately 285,000 acres in priority areas)	No Action Alternative (approximately 98 million acres available for application)
Special Status Species	<p>Special status species and critical habitats would be protected in accordance with ESA requirements either through avoidance, translocation (plants), or acquisition and protection of compensatory habitat. Impacts potentially could be dispersed across the 19 million acres of variance areas; however, impacts would be minimized due to the required variance process.</p> <p>Design features could effectively avoid or minimize many impacts.</p> <p>Critical habitat designated or proposed by the USFWS would be excluded. All ACECs designated for habitat would be excluded along with identified desert tortoise translocation sites and other areas where the BLM has made a commitment to protect sensitive species (including Mohave ground squirrel and flat-tailed horned lizard habitat in California, greater sage-grouse habitat in California, Nevada, and Utah, and Gunnison’s sage-grouse habitat in Utah).</p> <p>Variance areas for ROW application include areas of potentially suitable habitat for special status species (see Appendix J of the Final Solar PEIS). For example, the following species’ habitats overlap by the percentages shown:</p>	<p>Special status species and critical habitats would be protected as under program alternative.</p> <p>Lands available for ROW application within SEZs include areas of potentially suitable habitat for special status species (see Appendix J of this Final Solar PEIS).</p>	<p>Special status species and critical habitats would be protected as under program alternative. There would be no specific design features to reduce impacts.</p> <p>In some cases, habitat identified by state fish and game agencies would be excluded, as identified through applicable land use plan decisions. Critical habitat, ACECs designated for habitat value, and other areas where the BLM has made a commitment to protect sensitive species would not be excluded.</p> <p>Lands available for ROW application include areas of potentially suitable habitat for special status species (see Appendix J). For example, the following species’ habitats overlap by the percentages shown:</p>

TABLE B-1 (Cont.)

Resource	Program Alternative (approximately 285,000 acres in priority areas) (approximately 19 million acres subject to variance process)	SEZ Alternative (approximately 285,000 acres in priority areas)	No Action Alternative (approximately 98 million acres available for application)
Special Status Species (Cont.)	<p>Plants:</p> <ul style="list-style-type: none"> Nevada dune beardtongue – less than 61% White-margined beardtongue – less than 8% Munz’s cholla – less than 16% <p>Animals:</p> <ul style="list-style-type: none"> Desert tortoise – less than 12% Western burrowing owl – less than 8% Greater sage-grouse – less than 7% Gunnison prairie dog – less than 3% Gunnison sage-grouse – less than 1% Northern aplomado falcon – less than 11% Southwestern willow flycatcher – less than 1% Townsend’s big-eared bat – less than 6% Utah prairie dog – less than 11% 	<p>For example, about 1% or less of the habitat for two plant species (Nevada dune beardtongue, white-margined beard tongue) and nine animal species (desert tortoise, western burrowing owl, greater sage-grouse, Gunnison prairie dog, Gunnison sage-grouse, northern aplomado falcon, and southwestern willow flycatcher, Townsend’s big-eared bat, and Utah prairie dog) are located within the SEZs; less than 4% of Munz’s cholla habitat is located within the SEZs.</p>	<p>Plants:</p> <ul style="list-style-type: none"> Nevada dune beardtongue – 66% White-margined beardtongue – 34% Munz’s cholla – 45% <p>Animals:</p> <ul style="list-style-type: none"> Desert tortoise – 29% Western burrowing owl – 27% Greater sage-grouse – 54% Gunnison prairie dog – 15% Gunnison sage-grouse – 24% Northern aplomado falcon – 26% Southwestern willow flycatcher – 7% Townsend’s big-eared bat – 23% Utah prairie dog – 36%

TABLE B-1 (Cont.)

Resource	Program Alternative (approximately 285,000 acres in priority areas) (approximately 19 million acres subject to variance process)	SEZ Alternative (approximately 285,000 acres in priority areas)	No Action Alternative (approximately 98 million acres available for application)
Air Quality and Climate	<p>Air quality would be adversely affected locally and temporarily during construction by fugitive dust and vehicle emissions, although impacts would be relatively minor and could be mitigated (e.g., dust control measures, emissions control devices, and vehicle maintenance). Operations would result in few air quality impacts. Impacts potentially could be dispersed across the 19 million acres of variance areas; however, impacts would be minimized due to the required variance process.</p> <p>Design features could effectively avoid or minimize many impacts.</p> <p>Climate Change: Relatively minor CO₂ emissions would be generated by the use of heavy equipment, vehicles, and backup generators. Overall, CO₂ emissions could be reduced if solar energy production avoids fossil fuel energy production.</p>	<p>Same impacts as program alternative, except impacts would be concentrated into a smaller, known geographic area. This could increase the magnitude of potential impacts, particularly during construction, but affect a smaller number of areas.</p> <p>Climate Change: Same impacts as program alternative, assuming level of development is the same.</p>	<p>Same impacts as program alternative, except impacts could be potentially more dispersed and of smaller magnitude locally. There would be no specific design features to reduce impacts.</p> <p>Climate Change: Same impacts as program alternative, assuming level of development is the same.</p>
Visual Resources	<p>Solar energy projects and associated infrastructure introduce strong contrasts in forms, line, colors, and textures of the existing landscape, which may be perceived as negative visual impacts. Suitable development sites typically located in basin flats surrounded by elevated lands where sensitive viewing locations exist. Impacts potentially could be dispersed across the 19 million acres of variance areas; however, impacts would be minimized due to the required variance process.</p> <p>Various potentially sensitive visual resource areas, including National Historic and Scenic Trails, National Historic and Natural Landmarks, properties designated or eligible for the <i>National Register of Historic Places</i>, and areas with important cultural resources that possess historical vistas may be impacted.</p>	<p>Same impacts as program alternative, except the impacts would be concentrated into a smaller, known geographic area. This could increase the magnitude of potential impacts, particularly during construction, but affect a smaller number of areas.</p> <p>SEZs are visible from approximately</p>	<p>Same impacts as program alternative. Some NLCS lands are excluded from solar energy development under the no action alternative. There would be no specific design features to reduce impacts.</p> <p>Impacts could be potentially more dispersed and greater on those areas excluded under the action alternatives.</p>

TABLE B-1 (Cont.)

Resource	Program Alternative (approximately 285,000 acres in priority areas) (approximately 19 million acres subject to variance process)	SEZ Alternative (approximately 285,000 acres in priority areas)	No Action Alternative (approximately 98 million acres available for application)
Visual Resources (Cont.)	<p>Design features could effectively avoid or minimize many impacts but some large impacts cannot be avoided.</p> <p>All NLCS lands and ACECs are excluded. All SRMAs are excluded (except in Nevada and portions of the Yuma East SRMA in Arizona). Developed recreational facilities, special-use permit recreation sites, National Recreation Trails, and National Backcountry Byways are excluded.</p> <p>Approximately 995 potentially sensitive visual resource areas (not including ACECs) are located in or within 25 mi^c of the lands available for ROW viewsheds.</p>	<p>105 potentially sensitive visual resource areas (not including ACECs) within 25 mi.</p>	<p>About 1,473 potentially sensitive visual resource areas (not including ACECs) are located in or within 25 mi of the lands available for ROW application and could be affected by solar development within their viewsheds.</p>
Acoustic Environment	<p>Construction-related noise could adversely affect nearby residents and/or wildlife, and would be greatest for concentrating solar power projects requiring power block construction. Operations-related noise impacts would generally be less significant than construction-related noise impacts but could still be significant for some receptors located near power block or dish engine facilities. Impacts potentially could be dispersed across the 19 million acres of variance areas; however, impacts would be minimized due to the required variance process.</p> <p>Design features could effectively avoid or minimize many impacts.</p>	<p>Same impacts as program alternative, except impacts would be concentrated into a smaller, known geographic area. This could increase the magnitude of potential impacts, particularly during construction, but affect a smaller number of areas.</p>	<p>Same impacts as program alternative, except impacts could be potentially more dispersed. There would be no specific design features to reduce impacts.</p>
Paleontological Resources	<p>Paleontological resources subject to loss during construction, but impacts also possible during operations. Impacts potentially could be dispersed across the 19 million acres of variance areas; however, impacts would be minimized due to the required variance process.</p> <p>Design features could effectively avoid or minimize many impacts.</p>	<p>Same impacts as program alternative, except impacts would be concentrated into a smaller, known geographic area.</p>	<p>Same impacts as program alternative, except impacts could be potentially more dispersed. There would be no specific design features to reduce impacts.</p>

TABLE B-1 (Cont.)

Resource	Program Alternative (approximately 285,000 acres in priority areas) (approximately 19 million acres subject to variance process)	SEZ Alternative (approximately 285,000 acres in priority areas)	No Action Alternative (approximately 98 million acres available for application)
Cultural Resources and Native American Concerns	<p>Cultural resources subject to loss during construction, but impacts also possible during operations. Impacts potentially could be dispersed across the 19 million acres of variance areas; however, impacts would be minimized due to the required variance process.</p> <p>Design features could effectively avoid or minimize many impacts.</p> <p>ACECs designated for cultural or historic resource values, National Historic and Scenic Trails, National Historic and Natural Landmarks, properties designated or eligible for the <i>National Register of Historic Places</i>, and areas with important cultural and archaeological resources would be excluded.</p>	<p>Same impacts as program alternative, except impacts would be concentrated into a smaller, known geographic area.</p> <p>Same exclusions as program alternative.</p>	<p>Same impacts as program alternative. There would be no explicit exclusions to avoid known sensitive cultural resources. There would be no specific design features to reduce impacts.</p> <p>Impacts could be potentially more dispersed and greater on those cultural resources excluded under the action alternatives.</p>
Transportation	<p>Local road systems and traffic flow could be adversely affected during construction. Impacts during operations would be minor. Impacts potentially could be dispersed across the 19 million acres of variance areas; however, impacts would be minimized due to the required variance process.</p> <p>Design features could effectively avoid or minimize many impacts.</p>	<p>Same impacts as program alternative, except impacts would be concentrated into a smaller, known geographic area. This could increase the magnitude of potential impacts, particularly during construction, but affect a smaller number of areas.</p>	<p>Same impacts as program alternative, except impacts could be potentially more dispersed. There would be no specific design features to reduce impacts.</p>

Abbreviations: ACEC = Area of Critical Environmental Concern; AUM = animal unit month; BLM = Bureau of Land Management; CO₂ = carbon dioxide; DWMA = Desert Wildlife Management Area; ESA = Endangered Species Act; HMA = herd management area; NLCS = National Landscape Conservation System; ROW = right-of-way; SRMA = Special Recreation Management Area; USFWS = U.S. Fish and Wildlife Service.

Footnotes on next page.

TABLE B-1 (Cont.)

- a The lands composing the no action alternative have not changed significantly since release of the Draft Solar PEIS; thus, the habitat overlap values (percentages) presented remain valid.
- b To convert acres to km², multiply by 0.004047.
- c The acreage estimates were calculated on the basis of the best available GIS data. GIS data were not available for the entire set of exclusions; therefore, the acreages cannot be quantified at this time.
- d To convert mi to km, multiply by 1.609.