

## EXECUTIVE SUMMARY

### ES.1 BACKGROUND

The U.S. Department of the Interior (DOI), Bureau of Land Management (BLM), is responsible for the development of wind energy resources on BLM-administered lands. Currently, about 500 MW of installed wind capacity occurs under right-of-way (ROW) authorizations administered by the BLM in accordance with the requirements of the Federal Land Policy and Management Act of 1976 (FLMPA) (*United States Code*, Title 43, Section 1701 [43 USC 1701]) and the BLM's Interim Wind Energy Development Policy (BLM 2002).

This interim policy was developed, in part, in response to the National Energy Policy recommendations that the Departments of the Interior, Energy, Agriculture, and Defense work together to increase renewable energy production (NEPDG 2001). The interim policy is consistent with the requirements of Executive Order (E.O.) 13212, "Actions to Expedite Energy-Related Projects," issued May 2001, that federal agencies take appropriate actions, to the extent consistent with applicable law, to expedite projects to increase the production, transmission, or conservation of energy. To further support wind energy development on public lands and also to minimize potential environmental and sociocultural impacts, the BLM is seeking to build on the interim policy to establish a Wind Energy Development Program.

The BLM has determined that the establishment of a Wind Energy Development Program would be a major federal action as defined by the National Environmental Policy Act of 1969 (NEPA). Thus, the BLM has prepared this programmatic environmental impact statement (PEIS). The objectives of the PEIS are to (1) assess the environmental, social, and economic impacts associated with wind energy development on BLM-administered land, and (2) evaluate a number of alternatives to address the question of whether the proposed action presents the best management approach for the BLM to adopt, in terms of mitigating potential impacts and facilitating wind energy development.

The U.S. Department of Energy (DOE) has cooperated in the preparation of this PEIS in support of the BLM's proposed action to establish a Wind Energy Development Program for BLM-administered lands. The DOE supports the objectives of the PEIS and recognizes that these objectives are consistent with both E.O. 13212 and recommendations of the National Energy Policy. The DOE anticipates it will be involved in future wind energy development projects on BLM-administered lands, particularly with respect to transmission system interconnects and related issues.

The Final PEIS consists of three volumes. Volume 1 contains the main text of the PEIS. Volume 2 contains Appendices A through F. Volume 3 contains the comment and response document. Volume 3 has not been printed for distribution but is provided on a compact disc in a pocket attached to the back cover of Volume 2.

## **ES.2 SCOPING PROCESS**

The “Notice of Intent to Prepare a Programmatic Environmental Impact Statement (EIS) to Evaluate Wind Energy Development on Western Public Lands Administered by the Bureau of Land Management” (the NOI) was published in Volume 68, page 201, of the *Federal Register* (68 FR 201) on October 17, 2003. This initiated the scoping period, which lasted from October 17, 2003, to December 19, 2003. During that period, the BLM invited the public and interested groups to provide information and guidance on the scope of the PEIS and alternatives to the proposed action, suggest issues that should be examined, and express their concerns and opinions on resources in the western United States that wind energy development might impact. Public scoping meetings were held in Sacramento, California; Salt Lake City, Utah; Cheyenne, Wyoming; Las Vegas, Nevada; and Boise, Idaho.

It is estimated that as many as 5,000 people participated in the scoping process by attending public meetings, providing comments, requesting information, or visiting the Wind Energy Development PEIS Web site (<http://windeis.anl.gov>). All comments received equal consideration in developing the alternatives and analytical issues evaluated in this PEIS. The results of the scoping process were documented in a report issued in January 2004 (BLM 2004) that summarizes and categorizes the major themes, issues, and concerns of the written and verbal comments. The scoping summary report and copies of the individual letters, facsimiles, and comments received electronically during scoping are available on the Wind Energy Development PEIS Web site.

In addition to public scoping, government-to-government consultation was initiated with all Tribal entities with a potential interest in wind energy development on BLM-administered lands.

## **ES.3 PUBLIC REVIEW OF THE DRAFT PEIS**

The Notice of Availability (NOA) of the Draft PEIS was published on September 10, 2004 (69 FR 175). This began a 90-day public comment period on the Draft PEIS, which lasted from September 10 to December 10, 2004. During this period, the BLM invited the public and interested groups to comment on the content of the Draft PEIS.

The Draft PEIS was posted in its entirety on the Wind Energy Development PEIS Web site. Printed copies of the document and CDs containing the electronic files comprising the document were mailed upon request. More than 120 people and organizations participated in the public comment process by providing Internet-based comments or postal letters. Approximately 718 individual comments were received. The BLM reviewed all comments and made changes to the PEIS, as appropriate.

Responses to comments are provided in Volume 3 of the Final PEIS. Volume 3 has not been printed for distribution but is provided on a compact disc in a pocket attached to the back cover of Volume 2.

## **ES.4 SCOPE OF THE ANALYSIS**

The scope of the PEIS analysis includes an assessment of the 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 includes all BLM-administered lands in the western United States, excluding Alaska. They 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 in the 11-state study area.

The PEIS also assesses the proposed amendment of 52 BLM land use plans. The proposed amendments include (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 address designation of lands for competitive ROW bidding processes, although this was identified as a possibility in the NOI. Interest in competitive bidding processes currently is limited to two areas and would be addressed in local BLM land use planning efforts.

The analysis is based on current, available, and credible scientific data. Programmatic policies and BMPs incorporated into the BLM's proposed Wind Energy Development Program are based on an interpretation of these scientific data and decisions on relevant mitigation requirements. Direct and indirect impacts of wind energy development on the environment, social systems, and the economy, as discussed at the programmatic level, have been evaluated. Cumulative impacts associated with the proposed action have also been evaluated.

As a programmatic evaluation, this PEIS does 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) will vary considerably from site to site, especially over an 11-state region. In addition, the variations in project size and design will 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.

## **ES.5 ALTERNATIVES**

This PEIS analyzes three alternatives. It analyzes the potential impacts associated with the BLM's proposed action to implement a Wind Energy Development Program. It also assesses potential impacts associated with two alternatives to the proposed action, which present different

management options for wind energy development on BLM-administered land. The alternatives are defined as follows:

- *Proposed action: implement a Wind Energy Development Program.* Under this alternative, the BLM proposes to implement a comprehensive program to address issues associated with wind energy development on BLM-administered lands under the MPDS. The proposed program would establish policies and BMPs to address the administration of wind energy development activities and identify minimum requirements for mitigation measures. These programmatic policies and BMPs would be applicable to all wind energy development projects on BLM-administered lands. Site-specific and species-specific concerns, and the development of additional mitigation measures, would be addressed in project-level reviews, including NEPA analyses, as required. To the extent appropriate, future project-specific analyses would tier off of the analyses conducted in this PEIS and the decisions in the resultant Record of Decision (ROD) to allow project-specific analyses to focus just on the critical, site-specific issues of concern. In addition, under this alternative, a number of BLM land use plans would be amended to address wind energy development, including adoption of the programmatic policies and BMPs and identification of exclusion areas. Upon final approval of the proposed Wind Energy Development Program, the Interim Wind Energy Policy (BLM 2002) will be replaced by a new policy that incorporates the programmatic policies and BMPs evaluated in this PEIS. Elements of the interim policy addressing applications, authorizations, competitive interests, and due diligence will not be changed by the proposed program requirements.
- *No action alternative.* Under this alternative, the BLM would continue administering wind energy development ROW authorizations in accordance with the terms and conditions of the Interim Wind Energy Development Policy (BLM 2002). Analysis and review of wind energy development, including NEPA analyses and development of required mitigation measures, would be conducted on a project-by-project basis. Individual land use plan amendments would occur on a plan-by-plan basis without the benefit of the overarching, comprehensive analysis provided by this PEIS.
- *Limited wind energy development alternative.* Under this alternative, additional wind energy development on BLM-administered land would occur only in areas where it currently exists, is under review, or has been approved for development at the time the ROD for this PEIS is published. For the purposes of establishing an upper bound on the potential impacts of this alternative, it was assumed that all proposed wind energy projects on BLM-administered land currently under review would be approved for development by the time the ROD is published (anticipated for July 2005). Future expansion of wind energy development would be allowed at existing project areas; however, no additional BLM-administered land would be made

available for development. Under these restrictions, development would be limited to locations where development currently exists: Palm Springs, California; Ridgecrest, California; and Arlington, Wyoming; and locations where it is currently being reviewed: the Table Mountain Wind Generating Facility, Nevada; Cotterel Mountain Wind Farm Project, Idaho; and Walker Ridge, California.

## **ES.6 SUMMARY OF IMPACTS**

Potential adverse impacts to natural and cultural resources could occur during each phase 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 phase 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 also could occur to cultural and ecological resources.

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 present 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.

### **ES.6.1 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 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 time lines and reduced costs for wind energy projects, thereby facilitating development.

In terms of facilitating wind energy development, implementation of the proposed action is 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 NEPA analyses off of this 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 phase 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 to 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 to soils and geologic resources, paleontological resources, water resources, air quality, noise, land use, and cultural resources not having a visual component. Potential impacts to 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 to 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 to 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 to residential property values associated with proximity to wind energy projects were not calculated in this 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 PEIS.

### **ES.6.2 No Action Alternative**

Under this alternative, wind energy development would be subject to the terms and conditions of the Interim Wind Energy Development Policy (BLM 2002). 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 time lines 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 to 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.

### **ES.6.3 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.

## **ES.7 CONCLUSIONS**

This PEIS is consistent with the requirements promulgated by the FLPMA; NEPA (42 USC 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 PEIS. The Draft PEIS was made available for public review, and comments received during that review were considered and incorporated into the PEIS as appropriate. The Final PEIS meets all administrative and procedural requirements.

On the basis of the impact analyses presented in this PEIS, it appears that the proposed action would present the best approach for managing wind energy development on BLM-administered lands. The proposed Wind Energy Development Program is 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 would provide the most comprehensive

approach for ensuring that potential adverse impacts are minimized to the greatest extent possible. And, finally, the proposed action is likely to provide the greatest economic benefits to local communities and the region as a whole. As a result, the proposed action appears to best meet the objectives of the National Energy Policy recommendations to increase renewable energy production on federal lands.

## **ES.8 REFERENCES**

BLM (Bureau of Land Management), 2002, "Instruction Memorandum No. 2003-020, Interim Wind Energy Development Policy," issued by the Director of the Bureau of Land Management, Washington, D.C., Oct. 16.

BLM, 2004, *Summary Report of Scoping Comments Received on the Bureau of Land Management Wind Energy Development Programmatic Environmental Impact Statement*, prepared by Argonne National Laboratory, Argonne, Ill., for Bureau of Land Management, Lands and Realty Group, Washington, D.C., Jan.

NEPDG (National Energy Policy Development Group), 2001, *National Energy Policy, Reliable, Affordable, and Environmentally Sound Energy for America's Future*, Washington, D.C., May.

