Department of Energy
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FINDING OF NO SIGNIFICANT IMPACT

MIDNIGHT POINT AND MAHOGANY GEOTHERMAL EXPLORATION PROJECTS, GLASS BUTTES, OREGON
DOI-BLM-OR-P040-2011-0021-EA; DOE/EA-1925

AGENCY: U.S. Department of Energy (DOE), Office of Energy Efficiency and Renewable Energy (EERE)

ACTION: Finding of No Significant Impact (FONSI)

SUMMARY: DOE is proposing to provide federal funding to implement portions of a geothermal exploration project[1] proposed by Ormat Nevada Inc. (Ormat) that would occur on public lands managed by two U.S. Department of Interior, Bureau of Land Management (BLM) Districts and private lands (Proposed Projects) in Lake and Harney Counties, Oregon. The BLM was the lead federal agency and DOE was a cooperating agency on the Environmental Assessment (EA) entitled *Midnight Point and Mahogany Geothermal Exploration Projects, Glass Buttes, Oregon DOI-BLM-OR-P040-2011-0021-EA; DOE/EA 1925*. The EA analyzed three alternatives including the no action alternative (EA Section 2.2), Ormat's proposed action, briefly described below (EA Section 2.3), and an alternative that was developed in response to issues raised during scoping regarding sage-grouse and other wildlife (EA Section 2.4). The analysis provided in the final EA supports DOE's determination that providing federal funding for the Proposed Projects will not significantly affect the quality of the human and natural environment. The final EA is hereby incorporated into this FONSI by reference.

The Proposed Projects would involve the maintenance and temporary construction of access roads, construction of two quarries, and drilling, testing, and monitoring of up to 13 geothermal exploratory wells on public lands administered by the BLM and up to 3 geothermal exploratory wells on private lands located near Glass Buttes, Oregon. The objective of the Proposed Projects is to evaluate the potential for the geothermal resources in the Glass Buttes area.

[1] Prior to the issuance of this FONSI, DOE authorized Ormat to use a percentage of the federal funding for preliminary activities, which included remote sensing surveys, geologic field work, and preparation of this EA. These activities are associated with the Proposed Projects and do not significantly impact the environment nor represent an irreversible or irretrievable commitment by the DOE in advance of this finding for Ormat's Proposed Projects.

DOE places a strong emphasis on avoiding, minimizing, and mitigating potentially adverse environmental impacts. As set forth in Section 2.5 of the EA, Ormat has committed to incorporating mandatory project design features which are intended to ensure that the potential for adverse impacts to natural and cultural resources are minimized if not eliminated. Ormat's commitment to obtain and comply with all appropriate federal, state, and local permits required for the project and to minimize or avoid potential environmental effects to soils, hydrology, biological resources, air quality, noise, visual resources, and cultural resources through the implementation of project design features detailed in section 2.5 of the EA, shall be incorporated and enforceable through DOE's financial assistance agreement.

Context of Potential Impacts

DOE must evaluate the significance of an action in several different contexts, such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant.

The Proposed Projects are located approximately 70 miles southeast of Bend, Oregon, and 50 miles northwest of Burns, Oregon, north and south of U.S. Highway 20. The project area is located in a remote and rural area of south central Oregon used mostly for livestock grazing and recreation. There are no residential population centers with schools, hospitals, parks, or other meeting places within the project area. The closest residence is located approximately 20 miles away from the project area. Each exploratory well would be drilled within a well pad ranging in size from 2.07 to 4.13 acres, depending on well type. Each well pad would accommodate a drill rig and other structures and facilities related to the drilling operation. Access to each well pad would be provided by existing or new aggregate access roads with an all-weather surface accessible from U.S. Highway 20. The Proposed Projects would be implemented over a period of one to three years.

Up to 13 wells would be drilled on lands managed by the BLM Prineville and Burns Districts (Public Lands Projects). Cumulatively, the Public Lands Projects would disturb 47.52 acres for well pad development, 4.09 acres for new access roads, 1.32 acres for access road pullouts and truck turnarounds, 0.57 acres for widening of existing roads, and 5 acres of disturbance for aggregate extraction. In addition to the Public Lands Projects, Ormat proposes to conduct the drilling, testing, and monitoring of up to three wells on private land located adjacent to the federal geothermal leases west of Glass Butte (Private Lands Project). The surface disturbance for the Private Lands Project would be 6.21 acres for well pad development, 1.11 acres for new access roads, 1.04 acres for widening of existing roads, and approximately 5 acres for mineral materials extraction.

Given that the physical effects of the Proposed Projects would be limited to the local geographic area, many of the project design features are common to both action alternatives, and the Habitat Mitigation Plan (Appendix C to the final EA) includes direction on improving at least twice as much sage-grouse habitat as the Proposed Projects would disturb, DOE finds that the EA has not identified any direct, indirect, or cumulative effects of sufficient size or duration to be significant at the local, regional, or national level.

Intensity of Potential Impacts

The following discussion is organized around the ten (10) intensity factors, described in 40 CFR 1508.27, which refer to severity of impact. The intensity of effects considered is in terms of the following:

1) Impacts that may be both beneficial and adverse:

In the EA, DOE analyzed and considered the beneficial and adverse impacts for the implementation of the Proposed Projects. The action alternatives would impact resources as described in Chapter 3 and Appendix A of the EA. Impacts identified in the final EA include possible impacts to recreation (EA, p. 3-6), rangeland management (EA, p. 3-13), biological resources (EA, p. 3-17), visual resources (EA, p. 3-37), cultural resources and traditional practices (EA, p. 3-48), wilderness characteristics (EA, p. 3-50), public safety (EA, p. 3-51), wetlands (EA, p. 3-52), groundwater and water rights (EA, p.3-55), and biological soil crust (A-3). Project design features such as fire prevention protocols, erosion control measures, weed prevention and control practices, and restricted operational timeframes have been established to minimize or eliminate potential adverse impacts to these resources. These project design features detailed in section 2.5 of the EA, shall be incorporated and enforceable through DOE's financial assistance agreement.

2) The degree to which the proposed action affects public health or safety:

In the EA, DOE found that there would be no disproportionately high or adverse human health or environmental effects related to the Proposed Projects. The final EA identifies two potential impacts that the Proposed Projects could have on public health and safety – release of natural gas during drilling and solids remaining in the reserve pits after liquids were evaporated (EA, p. 3-51). With respect to the release of natural gas, the Hazardous Gas Contingency Plan (EA, p. 2-41), which includes Lower Explosion Limit monitoring, minimizes the risk to worker safety from the presence of natural gas. Solids remaining in reserve pits, which typically consist of non-hazardous, non-toxic drilling mud and rock cuttings, would be sampled for pH, metals, and total petroleum hydrocarbons for confirmation of non-toxicity and non-hazardousness. The non-hazardous solids would then be mixed with the excavated rock and soil and buried by backfilling

the reserve pit. If the material is determined to be hazardous per BLM's *The Gold Book*[2], then the material would be removed from the site with post-removal site testing to confirm that all hazardous material was removed. Therefore, the risk of the projects exposing the public to any hazardous and/or toxic chemicals would be minimal. The Proposed Projects would not be a likely target for intentional destructive acts that could further affect public safety. Based on the analysis in the EA and supporting record, the Proposed Projects will not cause any significant effects on public health and safety.

3) Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas:

There are no park lands, prime and unique farmlands, wild and scenic rivers, designated wilderness or wilderness study areas or ecologically critical areas that would be affected directly or indirectly from the Proposed Projects. There are wetlands identified in the National Wetland Inventory in Ormat's leased areas, but these wetlands are located in areas that would not experience disturbance from the Proposed Projects activities.

The Proposed Projects are designed to avoid disturbance to all cultural resources eligible or potentially eligible and those currently unevaluated for listing on the National Register of Historic Properties (EA, p. 3-48). Additionally, if there are any new discoveries of cultural resources, Ormat would temporarily stop activities related to the Proposed Projects and would contact a cultural resources specialist to evaluate the discovery. The Proposed Projects would only resume upon completion of an assessment of the discovery in coordination with the BLM.

The Proposed Projects would not limit Indian tribal members' access to the projects area and would not physically prevent tribes from practicing their traditional activities. Through multiple consultations the BLM has been informed by Tribal staff that the Proposed Projects, even though they would occupy only a very small portion of the overall Glass Buttes area, would adversely impact "sacred and holy" areas; however, the tribes have not demonstrated how the Proposed Projects would do so. The tribes have not provided the BLM with a method to quantify or mitigate effects of the Proposed Projects to sacred and holy areas. The tribes have also not shown that the Proposed Projects would coerce tribal members to act contrary to their religious beliefs. Therefore, both the BLM and DOE cannot find that there would be significant effects to historic structures or cultural resources as a result of the Proposed Projects, and thus concludes that there are no significant effects to historic structures or cultural resources as a result of the Proposed Projects.

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[2] Bureau of Land Management (BLM). 2007. *Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development* (The Gold Book). Denver, Colorado.

4) The degree to which the effects on the quality of the human environment are likely to be highly controversial:

While comments submitted during scoping helped frame the issues considered in the EA and BLM received seven comment letters from the public and other agencies on the EA which resulted in the need for some changes to the EA to add clarification or modify the outcome, nothing received as part of the scoping or public comment period indicated a high level of controversy regarding the Proposed Projects. Geothermal exploration drilling, temporary road construction, road improvements, quarry operation, and water well drilling are activities whose effects have been well documented and studied. A full suite of BLM, DOE, and contracted specialists (EA, Chapter 5) with expertise and knowledge on all of the proposed activities provided input on the analysis of effects (EA, Chapter 3) and have not identified any anticipated effects from the proposed activities that are undocumented and/or unstudied, thus the Proposed Projects would not have highly controversial effects.

5) The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks:

There are no parts of the Proposed Projects that involve any new technology or that would use existing technology in a manner that it has not already been used in the geothermal industry. Due to this, the effects of the Proposed Projects are not highly uncertain nor do they involve unique or unknown risks.

6) The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration:

No alternative would establish a precedent for future actions with significant effects. The Proposed Projects does not establish a precedent for future actions or represent a decision in principle about a future consideration. Accordingly, the Proposed Projects would not establish a precedent. Any further proposals for geothermal exploration and/or development would be analyzed as a completely separate action in a new environmental analysis.

7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts:

The EA evaluated the Proposed Projects in the context of past, present, and reasonably foreseeable future actions within the defined geographic scope for the Proposed Projects. Two communications tower projects and a wind energy and transmission project are planned within this geographic area. Cumulative impacts to recreation, rangeland management, biology, visual resources, and groundwater resources were analyzed in the EA relative to all past, present, and reasonably foreseeable future actions. As supported by the discussion in the EA (Section 3.12), DOE concludes the cumulative impacts of the Proposed Projects would not be significant, and

the proposed activities are not related to other actions, that when combined, would have significant impacts at the local or regional scale.

8) The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places (NRHP) or may cause loss or destruction of significant scientific, cultural, or historical resources:

The Proposed Projects are designed to avoid disturbance to all cultural resources eligible or potentially eligible and those currently unevaluated for listing on the National Register of Historic Properties (EA, p. 3-48). Accordingly, DOE concludes the Proposed Projects would have no adverse effects on NRHP-listed or eligible districts, sites, highways, structures, or objects and would not cause the loss or destruction of significant scientific, cultural, or historical resources.

9) The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act (ESA) of 1973:

No fish, animal, or plant species listed for protection under the ESA or their critical habitat occurs within the range of direct or indirect effects of the Proposed Projects.

While Greater sage-grouse (*Centrocercus urophasianus*) is considered a candidate species for listing under the ESA, both the Oregon Department of Fish and Wildlife (ODFW) and the BLM are taking steps to ensure the conservation of sage-grouse habitat. The BLM interim nation-wide policy is to utilize state-level sage-grouse data for assessing effects to sage-grouse habitat until BLM considers amendments or revisions to land use plans regarding sage-grouse. Therefore as part of the analysis in the EA, ODFW sage-grouse habitat designations and ODFW's mitigation strategy were considered by BLM in the management of sage-grouse habitat. Because sage-grouse habitat would be directly affected by the Proposed Projects, a Habitat Mitigation Plan for sage-grouse was developed and will be implemented. Ormat will be responsible for providing funding for mitigation to the BLM. The BLM is the responsible land management agency for the proposed off-site mitigation on public land and will be responsible for implementing off-site mitigation using the funding that Ormat provides. Further details are found in Sections 3.5, 3.12.1, and Appendix C of the EA. With implementation of the Habitat Mitigation Plan, DOE concludes that there would be no adverse impacts to sage-grouse as a result of the Proposed Projects.

10) Whether the action threatens a violation of federal, state, or local law or requirements imposed for the protection of the environment:

The Proposed Projects would follow all of the laws and requirements specifically listed in the EA (EA Section 1.5.3) as well as any other federal, state, or local law or requirement imposed

for the protection of the environment.

CONCLUSION: Based on the final EA and the above considerations, DOE finds that providing federal funding for the Proposed Projects is not a major action that constitutes a significant effect on the human environment. This finding and decision is based on the consideration of DOE's NEPA implementing regulations (10 CFR Part 1021) and the Council on Environmental Quality's (CEQ) criteria for significance (40 CFR 1508.27), both with regard to the context and the intensity of impacts analyzed in the EA. Accordingly, the Proposed Projects do not require the preparation of an environmental impact statement.

For questions about this FONSI or the final EA, please contact:

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Issued in Golden, Colorado this 8th day of August, 2013.

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