

Native American Issues in Geothermal Energy

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The geothermal community has recently paid increased attention to Native American tribes because geothermal energy may offer these tribes economic opportunities, empowerment, and more energy choices. Tribal development of geothermal resources could also contribute to the nation's domestic power supplies. Geothermal resources provide a significant opportunity for rural economic development through direct-use applications. American Indian land comprises 5% of U.S. land, but contains an estimated 10% of all energy resources.

This paper discusses the statutory and policy context for those interested in tribal issues relating to geothermal energy, and addresses tribal issues relevant to geothermal development. It briefly describes two tribal geothermal projects, identifies financial opportunities for future projects, and describes the roles and responsibilities of the U.S. Department of Interior's (DOI) Bureau of Land Management (BLM) in assisting the tribes with geothermal development. This paper is based on ongoing activities of the GeoPowering the West Program of the U.S. Department of Energy (DOE) and of the Geothermal Program at the BLM.

Relevant Statutes, Policies, and Analyses

Several statutes, policies, and analyses delineate formal reasons to improve the understanding of the cultural impacts from geothermal development. These include the National Environmental Policy Act (NEPA), the National Historic Preservation Act, the American Indian Religious Freedom Act, the Indian Development Act, Executive Order 13007 on Indian Sacred Sites, the DOE American Indian and Alaska Native Tribal Government Policy, and the Native American Graves Protection and Repatriation Act. Legislation pending in Congress, the Tribal Energy Self-Sufficiency Act, may also be enacted into law. Appendix A provides additional details on these statutes and policies.

In April 2000, DOE issued a report on energy consumption and renewable energy development potential on American Indian lands. The report noted that expanding the availability of electricity on tribal lands could dramatically improve the lives of residents. The analysis indicated that 14.2% of American Indian households on reservations have no access to electricity, compared 1.4% of all U.S. households. American Indian households on tribal lands spend a greater share of income on electricity than do non-Indian households. The Navajo reservation in Arizona has the highest percentage of households without electricity (37%). It is by far the largest reservation in the United States, accounting for 75% of all American Indian reservation households without

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electricity. Parts of the Navajo Reservation and Trust Lands are also located in New Mexico and Utah. The non-electrified Navajo households represent about 10% of all American Indian reservation households (EIA 2000). The analysis of geothermal potential relative to tribal lands deserves more attention, to determine the extent to which development of geothermal resources might affect tribes.

The Western Area Power Administration (WAPA) and the Bonneville Power Authority (BPA) currently market electricity to tribes. Seven states with American Indian lands (Arizona, Connecticut, Iowa, Maine, Minnesota, Nevada, and Texas) have enacted renewable portfolio standards. Eight states with American Indian lands (California, Connecticut, Minnesota, Montana, New Mexico, New York, Oregon, and Rhode Island) have public benefits funds. Of these, the states most likely to have geothermal resources are Arizona, California, Montana, New Mexico, Nevada, and Oregon.

Tribal Geothermal Projects

The federal government is offering increased funding for tribes to develop renewable energy on tribal lands. In fiscal year (FY) 2002, DOE made \$1.5 million available through a competitive solicitation for tribal development of renewable energy projects. In FY 2003, DOE is providing \$2–\$3 million to promote tribal energy self-sufficiency through financial and technical assistance. Altogether, 65 renewables projects have been funded for a total of \$12.5 million. The U.S. Department of Agriculture's Rural Utility Service is providing \$2–\$3 million in FY 2003 to fund rural energy systems through grants targeted toward agricultural operators and small businesses in rural areas. Tribal entities need to know that they are eligible to apply for these funds.

Two tribes are currently developing geothermal projects.

- The Jemez Pueblo in New Mexico is conducting a feasibility study concerning potential direct use applications of its low-temperature geothermal resources. The Pueblo of Jemez, in north central New Mexico, was funded by DOE's program on Renewable Energy Development on Tribal Lands in FY 2002 for \$174,000. In partnership with Sandia National Laboratory, several meetings have been held with tribal leaders. Site visits to New Mexico geothermal direct-use installations, such as greenhouses, are planned.
- The Pyramid Lake Paiutes in northern Nevada have entered into a partnership with Advanced Thermal Systems (ATS) to develop a 30-megawatt geothermal power plant, and to construct a transmission line into California. Hot springs in this area are used for cleansing, and cultural and spiritual reasons. Several years ago, the tribe considered gas-fired power generating plants, but even though DC/AC lines already crossed the reservation, the Pyramid Lake Paiutes did not build the gas-fired plants. Because the tribe had no expertise in geothermal energy, they discussed the possibilities with several companies before forming a partnership with ATS. ATS builds binary-cycle Kalina power plants with no emissions and that return water to the ground. The 50-50 partnership involves tribal participation in the

project's decisions and income stream. The tribe believes the project will generate jobs and increase the tribe's human and institutional capacity in geothermal energy.

No other geothermal projects have been developed recently on tribal lands, but there is significant potential for such development. For example, the Jemez Pueblo, the Acoma Pueblo lands west of Albuquerque, the Navajo Indian Reservation, the lands of the Jicarilla Apache tribe, and the Zia Pueblo lands have lower temperature geothermal potential. The analysis of geothermal potential relative to tribal lands deserves more attention to determine the extent to which developing these resources might involve or affect tribes. An informal analysis conducted by the first author suggests that 57 reservations may have some potential for geothermal electricity production, representing approximately 10% of the American Indian population on reservations and Tribal Jurisdictional Statistical Areas (TJSAs, in Oklahoma). Another 72 reservations and TJSAs may have potential for geothermal direct-use applications.

Tribal Issues

Progress is being made in understanding tribal involvement in geothermal energy projects, both on and off the reservations. At two Conferences on Sustainability organized by the Council of Energy Resource Tribes (CERT) in 2002 and 2003, tribal participants identified several key issues relative to geothermal energy development. Tribal issues are involved when geothermal development is proposed either on tribal lands or on adjacent lands. These issues are often interrelated.

Geothermal Development on Tribal Lands. These issues are related to cultural and spiritual values, decision-making styles, sovereignty, resource values, and information.

- **Values:** The tribes define and honor spiritual values relative to the lands and waters, which many traditionalists believe should remain undisturbed. Despite economic difficulties on the reservation, many tribal members adhere to and wish to preserve traditional philosophies and ways of life. They believe their intratribal cultural issues are intensely personal and private, and must be resolved within each tribe.
- **Decision-making:** Tribal decision-making can be long delayed because of communication styles or perceived difficulties within the tribes. For example, the Hopi Tribe has two types of leadership—the traditional and the tribal councils. Both have to be involved in decision-making. The traditional leaders will ask: Why are you digging up Mother Earth? Frequent changes in tribal leadership and lengthy tribal decision processes also contribute to delays. Pure democracy (particularly when issues are technical and not well understood) requires respect and patience. A serious time commitment must be made to work with the tribes.
- **Sovereignty:** Tribes view sovereignty as one of their greatest values. The tribes are committed to their tribal judicial systems, and often perceive that the private sector views this system as not applicable to commercial development. Furthermore, companies want to involve state judicial systems in decisions. The tribes believe that, if they are to be involved

in geothermal energy project decisions, there must be a government-to-government relationship. They perceive a need for two-way cultural training between the U.S. government and the tribes. Tribal members are also concerned that private sector companies are lobbying federal agencies (in particular, DOE and DOI), to further the companies' interests or to make deals that will keep tribes subservient to them.

- **Impacts:** Some tribal members may wonder about the impacts of electrification on the cultural lives of their families. Questions are raised about social values:
 - Will teenagers spend their time playing video games?
 - Will TV watching become pervasive?
 - Will the burden of certain household chores be lightened for the tribes' women?
 - Will an energy project help create training and jobs for tribal members?These questions must be answered before any project receives full support by the involved tribe.
- **Financial resources:** Tribal members are concerned about insufficient financial resources to fund renewable energy development. The tribes believe they should receive a portion of geothermal royalties that are being sent to the U.S. Treasury or to state governments. Some tribal members wonder whether the state governments will move in on tribes, if they succeed with geothermal projects, by taxing their energy developments. Information about selling electricity as a revenue source will help tribes understand the benefits of geothermal development.
- **Human and institutional resources:** If tribes do not understand the technical and economic aspects of geothermal development, they feel vulnerable to the companies. Tribes say they need to develop codes and tribal utility commissions, and they need trained American Indian staff for these positions. Each tribe needs at least one full-time professional, as well as consultants, to take on energy projects. The lack of tribal human and institutional capacity has been a barrier that is just beginning to be addressed by tribes and the federal government.
- **Information:** Many energy information needs and styles on the part of tribes differ from those met by mainstream U.S. programs. Tribes would like to receive information on geothermal energy, but do not want to be aggressively pushed to pursue geothermal development. Tribes have expressed a desire to move at their own pace.

In general, tribes want to pursue energy development that provides a compatible match between their energy resources and their values. For example, if a tribe is interested in replenishing the salmon in wild rivers, it may wish to pursue geothermal aquaculture for salmon production. However, government programs, industry, and academia must provide education and answers to lingering questions, before tribes can take significant advantage of geothermal energy.

Geothermal Development on Lands Adjacent to Tribal Lands. Historically, tribes have used lands near their reservations for a variety of purposes, including spiritual ceremonies and hunting. Tribes regard these activities as ancestral rights. Many key geothermal resources are

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located on public lands adjacent to tribal lands. The ability to develop such public geothermal resources may depend on open communication with, and participation by, tribes. The BLM is emphasizing its practice of involving all publics, including tribes, in public lands planning. Tribes will be encouraged to participate in these discussions and plans.

The Bureau of Land Management Role

The BLM supports geothermal resource development on tribal lands, and provides advice on opportunities related to available geothermal resources. Within a tribe's value system, the BLM will share knowledge of, and advice about, the best ways to use geothermal resources. The BLM's role in the process is varied, based on the activity. Before development activities begin, the BLM is available to provide technical expertise on:

- Environmental issues
- Resource and contract evaluations to best develop the resources
- Training and inspection/monitoring techniques
- Bonding.

Once the Bureau of Indian Affairs (BIA) or an individual tribe issues a lease or approves a contract, the BLM takes an active role in applying expert knowledge and procedures to processing actions in:

- Permitting geothermal drilling and other resource development-related permits
- Analyzing development practices to ensure best resource development through unitizing and reservoir management.
- Providing inspection and enforcement.

The BLM's roles will continue until the involved tribe establishes its own trained workforce, or as long as the tribe needs its expertise in the process.

Conclusion

Greater sensitivity is emerging in the geothermal community and the agencies of the federal government, about the special needs and interests of the Native American tribes living on or near geothermal resources. The tribes have become more sophisticated over the past two years about the potentialities, and the questions they must address and resolve, relative to geothermal energy development. There are now more venues for discussing such issues (such as those organized by the Inter-tribal Energy Network and the Council of Energy Resource Tribes). More federal government resources are being devoted to developing human and institutional capabilities in American Indian country and to successfully resolving tribal questions. Further strides will continue to improve the ability of Native American tribes to make professional decisions about the benefits and impacts of geothermal resources on tribal lands.

References

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Appendix A. Relevant Statutes, Policies, and Analyses

The following statutes, policies, and results of analyses delineate formal reasons to improve the understanding of the socioeconomic and cultural impacts of geothermal development. These include NEPA, the National Historic Preservation Act, the American Indian Religious Freedom Act, Executive Order 13007 on Indian Sacred Sites, the DOE policy on American Indians, and Environmental Impact Assessment analysis on renewable energy development potential on Indian lands.

National Environmental Policy Act. Although there is no regulatory driver for social impacts, NEPA, as amended, requires environmental reviews of proposed federal actions, including Environmental Impact Statements (EISs) and Environmental Assessments (EAs). The reviews include social impacts of the proposed actions. In addition, industry-proposed actions on federal lands must also comply with NEPA. The California Environmental Quality Act also requires environmental reviews for actions in the State of California. The body of available EISs and EAs

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contains very few empirical data on the social impacts of geothermal development on Native Americans.

National Historic Preservation Act. The National Historic Preservation Act of 1966, amended in 1992, establishes a federal policy of encouraging preservation of cultural resources for present and future generations. The federal lead agency for a proposed action is responsible for initiating the “Section 106” review process and for consulting with the State Historic Preservation Officer and the Advisory Council on Historic Preservation. For example, in the case of several proposed Medicine Lake geothermal projects, the U.S. Forest Service, as the Surface Managing Agency, initiated the Section 106 review process. The review included such issues as protection of Native American graves, archeological sites and resources, spiritual and vision quest sites, and paleontological resources.

American Indian Religious Freedom Act. The American Indian Religious Freedom Act of 1978 holds that federal agencies shall protect and preserve the religious freedom of American Indians. Although this issue was addressed during the Medicine Lake approval processes, the issue of spiritual values, in the public context, has still not been completely defined. More work will need to be done.

Executive Order 13007 on Indian Sacred Sites. Executive Order 13007 of 1996 (61 Federal Register 26771) provides that federal agencies are required to accommodate access to and ceremonial use of sacred sites by Indian religious practitioners, and to avoid adverse effects to sacred sites and to maintain their confidentiality. The act requires that, for any proposed action, agencies ascertain the impacts of the proposed activity on places of religious significance, sacred sites, plant species for food and healing, air quality, visual quality, noise quality, wildlife and game habitat, spiritual significance, battlegrounds, vision quest, power places, and other tribal activities, such as hunting, camping, and gathering.

The Indian Development Act. The Geothermal Steam Act does not allow for BLM leasing on Indian reservations. The Indian Development Act provides that the BLM can be a technical consultant to a Native American tribe interested in negotiating with industry for development of geothermal resources at tribal lands. The BLM, if invited by the tribe, could facilitate the negotiation between the tribe and the developer.

Minerals Management Service Office of Indian Compliance and Asset Management. This office is a special organization within the Minerals Revenue Management dedicated to serving mineral producing tribes and individual Indian mineral owners. Based in Denver, the office is a focal point for Indian mineral issues and contact with the Indian community.

<http://www.mrm.mms.gov/TribServ/OIRAwho.htm>

American Indian and Alaska Native Tribal Government Policy, U.S. Department of Energy. DOE first developed a policy governing its work with American Indians in 1992 (DOE 2000). The policy states that the department will identify and seek to remove impediments to working directly and effectively with tribal governments on DOE programs. Further, the policy committed DOE to consider Indian cultural issues in all its programs. Secretary Abraham has reaffirmed DOE's government-to-government policy.

Tribal Energy Self-Sufficiency Act (Draft). This bill is planned to be introduced in the Senate. Its provisions make energy projects eligible for revolving loans, loan guarantees, interest subsidies, and other incentives under the Indian Financing Act of 1974.