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Highlights

Highlights of [GAO-06-629](#), a report to the Ranking Minority Member, Committee on Energy and Natural Resources, U.S. Senate

Why GAO Did This Study

The Energy Policy Act of 2005 (Act) contains provisions that address a variety of challenges that face the geothermal industry, including the high risk and uncertainty of developing geothermal power plants, lack of sufficient transmission capacity, and delays in federal leasing. Among the provisions are means to simplify federal royalties on geothermal resources while overall collecting the same level of royalty revenue. The Act also changes how these royalties are to be shared with local governments (disbursements). This report describes: (1) the current extent of and potential for geothermal development; (2) challenges faced by developers of geothermal resources; (3) federal, state, and local government actions to address these challenges; and (4) how provisions of the Act are likely to affect federal geothermal royalty disbursement and collections.

What GAO Recommends

GAO found that it will be difficult for the Department of the Interior to demonstrate that it intends to collect the same level of royalties as called for in the Act because the Minerals Management Service (MMS) does not systematically collect the necessary revenue data from electricity sales. Therefore, GAO recommends that the Secretary of the Interior instruct the appropriate managers within MMS to systematically collect future sales revenues for electricity, and Interior agreed.

www.gao.gov/cgi-bin/getrpt?GAO-06-629.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Jim Wells at (202) 512-3841 or wellsj@gao.gov.

RENEWABLE ENERGY

Increased Geothermal Development Will Depend on Overcoming Many Challenges

What GAO Found

Geothermal resources currently produce about 0.3 percent of our nation's total electricity and heating needs and supply heat and hot water to about 2,300 direct use businesses, such as district heating systems, fish farms, greenhouses, food-drying plants, spas, and resorts. Recent assessments conclude that future electricity production from geothermal resources could increase by 25 to 367 percent by 2017. The potential for additional direct use businesses is largely unknown because the lower temperature geothermal resources that they exploit are abundant and commercial applications are diverse. One study has identified at least 400 undeveloped wells and hot springs that have the potential for development. In addition, the sales of geothermal heat pumps are increasing.

Developers of geothermal electricity plants face many challenges including a capital intensive and risky business environment, developing technology, insufficient transmission capacity, lengthy federal review processes for approving permits and applications, and a complex federal royalty system. Direct use businesses face unique business challenges, remote locations, water rights issues, and high federal royalties. The Act addresses many of these challenges through tax credits for geothermal production, new authorities for the Federal Energy Regulatory Commission, and measures that streamline federal leasing and that simplify federal royalties, which totaled \$12.3 million in 2005. In addition, the Department of Energy and the state of California provide grants for addressing technology challenges. Furthermore, some state governments offer financial incentives, including investment tax credits, property tax exclusions, sales tax exemptions, and mandates that certain percentages of the electricity within the state be generated from renewable resources.

Under the Act, federal royalty disbursement will significantly change because half of the federal government's share will now go to the counties where leases are located. Although the Act directs the Secretary of the Interior to seek to maintain the same level of royalty collections, GAO's analysis suggests this will be difficult because changing electricity prices could significantly affect royalty revenues. Also, MMS does not collect sales data that are necessary to monitor these royalty collections.

Glenwood Hot Springs, Colorado (left) and Geothermal Power Plant at The Geysers, California (right)



Source: GAO.