



**Statement of Paul A. Thomsen
Director of Policy and Business Development
Ormat Technologies, Inc.**

**Subcommittee on Energy and Mineral Resources
HR 2171 "Exploring for Geothermal Energy on Federal Lands Act"
June 16, 2011**

Mr. Chairman, members of the committee, it is my honor to testify today on behalf of Ormat Technologies regarding HR 2171.

Ormat Technologies is a world leader in the geothermal power plant sector. The company has four decades of experience in the development of state of the art, environmentally sound power solutions, primarily in geothermal and recovered energy generation. Ormat is responsible for the development of over 1,000 MW of geothermal generation throughout the world and over 400 MW of generation in the United States.

EXPANDING THE GEOTHERMAL FOOTPRINT:

Geothermal electrical generation is a baseload renewable energy source that uses heat from the earth to create electricity. Baseload means that it's a power source that is constantly producing energy, just like fossil fuel combustion, but clean and renewable--- and a renewable that doesn't rely on the wind to blow or the sun to shine. The U.S. Geological Survey estimated the geothermal industry has the potential to generate 39,000 MW of electricity in the United States using existing technologies.¹ This sort of potential is remarkable and can even be used to reliably power State Capitols such as Idaho's State Capitol in Boise, which has been using geothermal heat since 1982! We congratulate the State of Idaho for its vision and use of this remarkable, clean and reliable renewable source of energy.

Today, 144 projects estimated to be under development in the United States² are projected to produce 624,000 construction jobs if permitting the work can be done efficiently. These 144 projects will require \$26 billion in capital over the next five years with approximately 50 percent allocated to exploration and drilling phases. In order to open the capital markets to develop these projects, the U.S. must commit to finding permitting solutions that support greater development activity.

¹ <http://pubs.usgs.gov/fs/2008/3082/pdf/fs2008-3082.pdf>

² http://www.geo-energy.org/reports/GEA_January_Update_Special_Edition_Final.pdf

ORMAT TECHNOLOGIES, INC.

6225 Neil Road • Reno, NV 89511-1136 • Phone : (775) 356-9029 • Fax : (775) 356-9039
E-mail: ormat@ormat.com Web site: <http://www.ormat.com>



HR 2171 “(the) Exploring for Geothermal Energy on Federal Lands Act” supports greater geothermal development by clearly defining and enhancing the existing Categorical Exclusion (CX) policy and setting timelines that create accountability and remove the uncertainty from the NEPA process

BLM AND DOE RECOGNIZE THE IMPORTANCE OF PERMITTING AND EXPLORATION ON FEDERAL LANDS:

- Energy Policy Act of 2005 - The Energy Policy Act of 2005 (“EPAAct 2005”)¹ was designed to promote and streamline domestic renewable energy production. It also includes provisions specifically aimed at making geothermal energy more competitive with fossil fuels.²
- Implementing Statements and Directives – Consistent with the mandate to encourage renewable energy development contained in the EPAAct of 2005, the Department of the Interior (“DOI”) has taken steps to make the production, development, and delivery of renewable energy top priority.³ Furthermore, BLM’s 19 Priority Renewable Energy Projects for 2011 include five geothermal projects throughout the western U.S.⁴
- The DOE Blue Ribbon Panel - The U.S. Geological Survey estimated in 2008 that 30 GWe of undiscovered geothermal resources could be found in the western United States.⁵ The panel recommended that the DOE geothermal program focus on locating these resources in the near term using rapid reconnaissance surveys, surface exploration, stress measurements, fracture mapping, temperature gradient drilling or even cost-shared exploration drilling. The Program should also partner with other agencies, including the Department of the Interior, the U.S. Geological Survey (USGS), and the Nevada Bureau of Mines to share knowledge and data.

REGULATORY PROCESS GOVERNING GEOTHERMAL ENERGY DEVELOPMENT:

BLM’s geothermal regulations govern the various stages or phases of project development, including exploration operations, drilling operations, utilization operations, and commercial use. At each phase, the project proponent typically submits separate application to conduct operations which correspond to the development phase. The information needed to assess potential environmental impacts increases in detail and focus as the intensity of use moves from the exploration phase to an energy facility operation phase.

¹ Pub.L. 109-58.

² See EPAAct 2005 §§ 221-237.

³ BLM News Release, Secretary Salazar Issues Order to Spur Renewable Energy Development on U.S. Public Lands (March 11, 2009), *available at* <http://www.blm.gov/wo/st/en/info/newsroom.html>.

⁴ BLM News Release, BLM Announces 2011 Priority Renewable Energy Projects (March 8, 2011), *available at* <http://www.blm.gov/wo/st/en/info/newsroom.html>.

⁵ Williams, Colin F., Reed, Marshall J., Mariner, Robert H., DeAngelo, Jacob, Galanis, S. Peter, Jr., 2008, Assessment of moderate- and high-temperature geothermal resources of the United States: U.S. Geological Survey Fact Sheet 2008-3082, 4 p.2008-3082. 2008. <http://pubs.usgs.gov/fs/2008/3082/>



- Exploration Operations - A BLM-approved geothermal exploration permit, also known as an approved Notice of Intent to Conduct Geothermal Resource Exploration Operations (“NOI”), is required to explore any BLM-managed public lands open to geothermal leasing.
- Drilling Operations - A BLM-approved geothermal drilling permit¹ is required to drill wells and conduct related activities for the purposes of performing flow tests, producing geothermal fluids, or injecting fluids into a geothermal reservoir.
- Utilization Operations - BLM authorization is required prior to starting preliminary site investigations that may disturb the surface, building pipelines and facilities connecting the well field to utilization facilities not located on Federal lands leased for geothermal resources, testing a facility that is not located on Federal lands leased for geothermal resources, starting commercial use operations, or building or testing a utilization facility.
- Commercial Use - Finally, before using Federal geothermal resources, the applicant must submit a completed commercial use permit.

FOCUSING ON EXPLORATION OPERATIONS AND CX'S:

In December of 2008, BLM issued Instruction Memorandum No. 2009-044 which provided guidance to 516 Department Manual 11.9 B. Fluid Minerals: Approval of Notice of Intent to Conduct Geophysical Exploration with No Road Construction, by means of CX.

The BLM did this after reviewing 244 geophysical exploration projects and determining that geophysical exploration operations that do not include the construction of roads do not individually or cumulatively have a significant effect on the human environment. Therefore, the BLM determined that establishment of the new geophysical exploration CX was warranted (see 72 Fed. Reg. 45504 Aug. 14, 2007). BLM recognized that geophysical operations had evolved so that there are far fewer environmental impacts; the BLM and operators also employ BMPs that further reduce the impacts of these operations. In addition, the BLM has developed many COAs that can be included in any approval of geophysical operations that, like BMPs, further reduce the impacts of the proposed operations. The consistent use of these BMPs and COAs precludes the need for a new environmental evaluation specific to each new proposed action².

HR 2171 “(the) Exploring for Geothermal Energy on Federal Lands Act” supports greater geothermal development by clearly defining and enhancing the existing (CX) policy and

¹ “Geothermal drilling permit means BLM written permission to drill for and test Federal geothermal resources.” 43 C.F.R. § 3200.1.

² http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2009/IM_2009-044.html



setting timelines that create accountability and remove the uncertainty from the NEPA process.

Once the delay in permitting is resolved, the true power of renewable energy will be unlocked, creating a workforce to satisfy the geothermal industries' labor-intensive demands in science, sub-surface research, exploration, drilling, construction, and operation and maintenance. Replacing fossil fuels with domestic labor creates a market for U.S. export of services and equipment.

Improving project permitting has the potential to mobilize a workforce reminiscent of the U.S. Maritime "Liberty Ships" program, which engaged a similar sized workforce of 640,000 to produce, among other things, 2,700 "Liberty Ships." The program engaged a new workforce from various employment sectors and, in doing so, developed partnerships that improved shipyards, pre-fabrication and sub-contracting. Streamlining the geothermal permitting process would enable the industry to follow in the footsteps of the "Liberty Ships" program and help expedite the construction of 144 geothermal plants while affording an opportunity to create jobs, build similar partnerships and foster innovation across a number of sectors.

TECHNICAL SUGGESTIONS:

Since this bill deals with NEPA, and NEPA is primarily directed in this case at surface disturbance, it really doesn't make any sense to limit the depth of the hole, nor what kind of vehicle is used (wheeled or tracked), so long as the disturbance is less than 5 acres. The well has to be permitted under state rules as to type of well, depth, protections and casing design.

Therefore we suggest striking lines 17-19 on page 2 and lines 4-5 on page 3 since those variables are defined by the well pad size.

We also suggest adding language to Line 12 on page at the end of the sentence that states "...within three years unless project becomes part of larger project."

We would also propose that Section 106 of the National Historic Preservation Act be completed during the leasing process which would significantly curtail further delays.

Best Regards,

A handwritten signature in black ink that reads "Paul A. Thomsen". The signature is written in a cursive, flowing style.

Paul A. Thomsen
Director
Ormat Technologies, Inc.