

Statement Submitted for the Record for the
Energy Tax Reform Working Group of the House Committee on
Ways and Means, April 15, 2013
Submitted by the Geothermal Energy Association

Introduction

Geothermal power is created by extracting the heat of the earth and using it to produce electricity. This is accomplished either by passing the geothermal fluid directly through is a turbine (in “dry” or “flash” system) or by transferring the heat to a secondary, working, fluid that is then passed through an “expander” (similar to a turbine) to generate electricity.

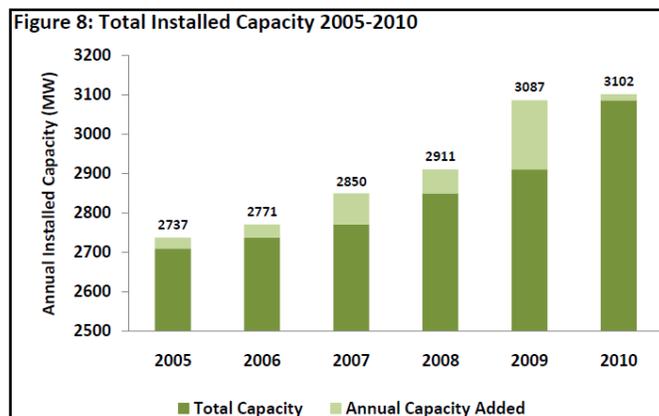
Different from other well known renewable technologies, geothermal power plants typically provide reliable base load power, 24 hours-a-day, 365 days-a-year, and geothermal power plants can also serve as a flexible generating source. Today, there are 3,386 Megawatts of geothermal power plants on-line in eight states, and projects under development in 13 states across the West--from Texas to Alaska.

According to recent Department of Energy research, geothermal projects have long lead times, typically requiring 7-8 years to bring on-line. The long lead times for geothermal energy are typically driven by work associated with permitting and the proper identification, characterization and development (drilling) of the underground resource.

Geothermal and the Production Tax Credit

The extension of the renewable energy production tax credit (PTC) to geothermal energy in the Energy Policy Act of 2005 has been a principal factor in the recent growth of geothermal energy. Prior to this change the PTC was available only to wind and closed-loop biomass power projects and geothermal energy was disadvantaged in renewable power bidding opportunities. Since 2005, geothermal power has seen steady growth in the United States, as the figure below shows.

Growth in US Geothermal Capacity ⁱⁱ



Extending the PTC to geothermal projects in 2005 clearly has helped restore growth in the US. Due to the long lead times and characteristic of working with an underground resource, which can't be seen or easily tested, investors view geothermal project as high risk, and without the tax incentive there would, certainly, be less investment.

A more recent change in the code will further help the industry. Early this year, Congress shifted the effective date mechanism by which application of the PTC is triggered. Previously, the effective date was tied to the date on which the new facility was "placed-in-service"; but in legislation passed by Congress on January 1, 2013, the effective date was changed to "under construction". Even though the expiration date for the PTC for geothermal was not extended in the bill; by changing the qualifying mechanism to "under construction" it immediately aligned the incentive to the time horizon for developing a geothermal project (instead of trying to squeeze a seven year development horizon into a two year extension of a placed in service deadline). Consequently, we expect several more geothermal projects will become eligible for the credit.

The change to "under construction" is significant for geothermal, and other base load renewables. As noted earlier, geothermal projects require 7-8 years from initial exploration to initial power production, perhaps half of which is due to governmental regulatory review and processing. Allowing projects to qualify once they are under construction will allow more base load power plants, including geothermal, to be built and provides more equitable treatment for projects with longer lead times.

In addition to the change to "under construction," the geothermal industry needs federal incentives to expand and diversify the investment base for the industry. Two mechanisms used in other industries to do so could be modified to allow investment in geothermal power projects, these are Master Limited Partnerships and Real Estate Investment Trusts. These, or other comparable mechanisms, are important to ensure the growth of a significant geothermal power industry -- one which will require hundreds of billions of dollars in new investment.

Finally, tax incentives should be extended for a time frame sufficient to build a robust industry with the capability to contribute significantly to the nation's energy needs.

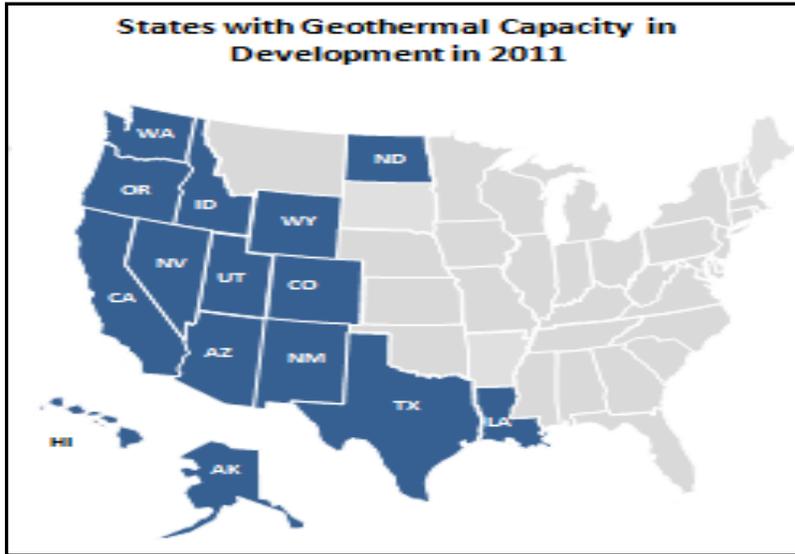
Geothermal's Future Potential is Tied to a Growing Market

The US Department of Energy has recently approved important research projects in geothermal energy, which are the first significant investments in new geothermal technology by DOE in decades.^{iv} A growing market for geothermal energy is important to realizing the full benefits of this investment and extension of the geothermal PTC is essential to growing the U.S. demand for geothermal energy.

The health of the US geothermal industry and its domestic market is also important to the role of US geothermal firms worldwide. There is a strong and growing world market for geothermal energy, and US firms are among the leaders in these markets. According to the Department of Commerce, geothermal is one of only two renewable technology areas where US firms are exporting more than the US market is importing, and the benefits of sustaining that leadership are obvious.

Extending the deadlines under the current law would help provide the incentive needed by investors looking at new geothermal power projects. Today, there are projects under development in some 15 states, as shown below, and we hope that advances in technology will support expansion to many more states in the future.

States with Geothermal Projects Under Development in 2011



Some Benefits of Geothermal Market Growth

The investment of billions of dollars in new geothermal power projects will help the economy and create jobs. To give some perspective, let's look at one new project under development in California. CalEnergy, a subsidiary of Mid-American Energy, has three 65 megawatt geothermal projects permitted and under development in Southern California. These three projects will represent about \$900 million in new investment in a county with one of the highest unemployment rates in the state -- over 30%. During the roughly four years of construction, CalEnergy will employ a monthly average of 323 workers. When completed, the project will employ 57 full-time employees (operations, engineering, maintenance, administration). For comparison, MidAmerican notes that a 300MW natural gas plant in operation will employ about 18 people. Geothermal also provides strong incentives for economic growth, the Imperial Irrigation District's recent report on energy and Southern California concluded that for every dollar invested in geothermal power there was an economic stimulus multiplier of 2.5.

Extending tax incentives beyond December 31, 2013 for new geothermal investment will not only mean economic stimulus and job creation, but will produce highly reliable base load power. Geothermal power plants can operate 24 hours a day, 7 days a week, 365 days a year, regardless of whether the wind blows or the sun shines. And, recent analysis has also shown that geothermal generators can ramp generation output down very quickly and they can also resume full generation capacity very quickly. Firm and flexible geothermal power can provide much needed reliability to the power grid, an attribute which utilities value and an important reason why they find geothermal power attractive when it is available.

