



March 8, 2017

Honorable Chris Brooks  
Nevada State Assembly  
401 South Carson  
Carson City, Nevada 89701

**Re: AB206 – Letter of Support**

Dear Assemblyman Brooks,

Ormat Technologies, Inc. is a renewable energy company, with decades of experience in geothermal energy. Ormat's headquarters is in Reno, Nevada, in the heart of the U.S.'s geothermal activity. Ormat installed the first geothermal power plant in Nevada, in 1984, and also installed, and operates, the newest geothermal power plant in the U.S. (in Nevada) in late 2015. Between the first and last, we have grown to own and operate over 700 MW of clean and renewable energy production worldwide. In Nevada, we currently operate over 240 MW of geothermal capacity, and employ almost 240 Nevadans. Our Reno headquarters serves as a hub for our worldwide activities in which we employ over 1,100 people. Ormat is a vertically integrated geothermal company, so we play a role in every stage of the energy development process - from geothermal exploration and development through manufacturing, construction, ownership and operation of our geothermal power plants. We also design, manufacture and sell geothermal power units, other power-generating equipment and related engineering, procurement and construction (EPC) services to utilities and developers worldwide.

Geothermal power is the production of electricity using the heat originating in the earth's core. Heat from the earth's core is transferred relatively close to the earth's surface where deep pockets of fluid, or geothermal brine, exist. Geothermal brine cannot be used as drinking or irrigation water. We drill into these deep pockets, extract geothermal brine, convert heat from the brine into electricity, and re-inject the brine to be re-heated, and re-used. The power plants on the surface take on many forms, but the most advanced geothermal power plants today are air-cooled (they don't consume any water), emission free, and can provide both baseload and flexible electricity generation. These qualities make geothermal energy a rare type of zero-emission renewable that offers predictable, stable power like coal or natural gas, but can also complement intermittent generation sources such as wind and solar.

There are over 3,700 megawatts of geothermal installed in the United States today, and about 1,250 planned megawatts are in the development pipeline.<sup>1</sup> The US Geological Survey (USGS) estimates that there are 500-1,500 MW of geothermal resources in Nevada that are ready for

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<sup>1</sup> <http://geo-energy.org/reports/2016/2016%20Annual%20US%20Global%20Geothermal%20Power%20Production.pdf>

<sup>2</sup> <https://pubs.usgs.gov/fs/2008/3082/pdf/fs2008-3082.pdf>

## ORMAT TECHNOLOGIES, INC.

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development<sup>2</sup>. The Department of Energy projects that there are over 30,000 megawatts of untapped geothermal resource in the United States that could be developed using the commercial technologies that exist today. Further, an MIT study found that 100 GWe of cost-competitive geothermal capacity could be provided using a near-term next generation production technology, called EGS, in the next 50 years.<sup>1</sup> In short, geothermal has enormous growth potential, and much of it is located in Nevada.

Nevada continues to be the leader in geothermal energy when considering Ormat's installed capacity, the ability to develop projects effectively, and available resources. We have operating geothermal facilities in six counties (Washoe, Churchill, Mineral, Lander, Elko, and Pershing) and are always happy to offer tours of our facilities to interested members and staff.

The Governors' Accord, signed in February of last year, and supported by the Governors of 17 states, including Nevada, stated that: "Our states will diversify energy generation and expand clean energy sources. Expanding energy efficiency and renewable energy in a cost-effective way strengthens our states' economic productivity, reduces air pollution, and avoids energy waste. Integrating more of these clean energy sources into our electricity grids can also improve the flexibility and stability of these grids."

Additionally, in the Governor's Planning Framework, issued in April last year, Governor Sandoval stated to "Protect and sustainably manage natural resources, by Becoming the nation's leading producer and consumer of clean and renewable energy" continuing to say that Nevada will "Significantly reduce the percentage of imported fossil fuels over the next 10 years." AB 206 would help to achieve those goals set forth for the State of Nevada including the expansion of renewable energy sources, the diversification of our energy generation, and the advancement of Nevada as a leader in renewable and clean energy generation.

### **A Balanced Portfolio**

Ormat has had the pleasure of working in a number of different electricity markets both here in the U.S. and abroad. A growing concern today is the lack of, or the lack of planning for, a balanced renewable portfolio. Many markets have realized that over-dependency on intermittent renewables can lead to the need for highly expensive fossil fuel standby generation, and can increase GHG emissions. Planning for a diversified mix of renewable sources can provide production which is considerably more balanced to a utility load, and provide stable (and cheaper) energy pricing.

It is clear that renewable energy prices are decreasing across technologies, and so it should be assumed that this trend will continue. Furthermore, cyclically low natural gas pricing has driven down renewable energy prices. When natural gas pricing cycles upward, it would be expected that renewable energy pricing follows, which presents an opportunity to integrate low-cost renewable energy for the benefit of Nevada ratepayers sooner than later.

### **Economic Benefits**

Renewable energy projects in Nevada will use Nevada resources (geothermal, solar, wind, and others) for the benefit of Nevadans. Renewable energy projects will bring stability to Nevadans' energy bills, and will provide stable jobs, investment, and economic development where it is

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<sup>1</sup> Massachusetts Institute of Technology (MIT). 2006. The future of geothermal energy. Cambridge, Massachusetts. Available: [http://geothermal.inel.gov/publications/future\\_of\\_geothermal\\_energy.pdf](http://geothermal.inel.gov/publications/future_of_geothermal_energy.pdf).



needed the most. Renewable energy projects provide 10 to 20 times more jobs than natural gas energy projects. Renewable energy will bring income to rural counties through taxes and royalties from lands that would have remained barren otherwise. Today, renewable energy projects, and specifically geothermal energy projects, are the highest taxpayers in Churchill County.

Nevada currently maintains an effective tax abatement program which promotes renewable energy development. The Governor's Office of Energy maintains and executes this program. The references provided by this program are key evidence to the amount of constructions jobs and local investment that occurs when constructing a renewable energy project. This data supports the preference of renewable energy projects when considering economic benefits. We estimate that the typical geothermal project (30 MW) generates over 500 jobs during the construction phase, and 29 new jobs during operations. In addition, once in operations, the typical project spends approximately \$5M annually in the local economy. Operations jobs and annual economic benefits are long term. They are typically located in rural areas on federal lands. With this, they pay property taxes, royalties, salaries, and benefits that are direct investments into rural Nevada. In an Energy Task Force presentation last year, Ormat estimated over \$74M spent annually which is retained in Nevada.

### **Closing**

In closing, we believe that this bill can help unlock new projects to create new high-paying, long term jobs and baseload, emission-free power production. Thank you for the opportunity to testify today, and I look forward to any questions the Committee may have.

Sincerely,

Rahm Orenstein

Vice President, Business Development