

**STATEMENT OF BRIAN D. FAIRBANK**

**President & CEO, Nevada Geothermal Power, Inc.**

**Before the Subcommittee on Regulatory Affairs, Stimulus Oversight and Government  
Spending of the House Committee on Oversight and Government Reform,**

**United States House of Representatives**

**Hearing On:**

**The Department of Energy Section 1705 Loan Guaranty Program**

**PRESENTED ON MAY 16, 2012**

## **STATEMENT OF BRIAN D. FAIRBANK**

### **Nevada Geothermal Power Inc.'s Blue Mountain Geothermal Power Facility**

**May 16, 2002**

Good morning Mr. Chairman and Members of the Subcommittee. It is my pleasure to appear today as a representative of Nevada Geothermal Power, Inc. and the Blue Mountain Facility and to speak with you about the many good things occurring at the Blue Mountain Facility, both in terms of what is occurring at the power plant and also in the Winnemucca, Nevada region and beyond. These positive things are a result of the hard work of Nevada Geothermal Power and Blue Mountain employees, the support of civic leaders and ordinary Nevadans, the dedication of trusted lenders, and, of course, the assistance of the Department of Energy's Section 1705 loan guarantee program.

By way of introduction, I am the President and CEO of Nevada Geothermal Power, Inc. (or "NGP"), which is the ultimate corporate owner of the Blue Mountain "Faulkner 1" geothermal power facility ("Blue Mountain" or the "Facility"). I am a geological engineer by training and have over 30 years of geothermal engineering, exploration, and assessment experience. I am a Past President of the Canadian Geothermal Energy Association and currently serve on the Geothermal Resources Council Board of Directors. My geothermal experience has taken me around the world and has included, by way of example, participation in the discovery of Canada's Meager Creek Geothermal Area in the late seventies, geothermal resource exploration and evaluation throughout North, Central, and South America, participation in the development of a national power plan and consultation on geothermal plants in Kenya, and extensive geothermal experience throughout the "Basin and Range" geologic province Nevada.

## *About Geothermal Power*

Before delving into the specifics of the Blue Mountain facility, I think it worthwhile to describe briefly the nature of geothermal power, and why we are so optimistic about its future as a clean, reliable source of energy in the United States.

Geothermal power is a unique source of renewable natural energy that is the product of heat generated by and stored in the earth. The earth's core is continually producing enormous amounts of heat primarily by means of decay of radioactive materials and secondarily by energy left over from the earth's formation. Heat generated in the earth's core is conducted upward in the earth's crust. Under certain geological conditions such as the emplacement of shallow magma chambers around young volcanoes or thinning of the crust in rift belts (such as occurs in Nevada), rock and water in the earth's shallow crust is sometimes heated to very high temperatures. Surface manifestations of underlying geothermal energy range from shallow hot ground water, hot springs or fumeroles. We are all familiar with some of the famous examples of geothermal energy in action such as volcanoes, the Old Faithful geyser in Yellowstone National Park, and hot springs.

Advances in technology now allow us to harness the heat stored in the rock and water and convert it to electrical power that can be used to power our cities and industries without any of the pollution or other negative side effects caused by other sources of energy. This is not a simple task but it is one we are committed to.

The first obstacle is locating a suitable geothermal system that will support electrical production. Geothermal systems must consist generally of a heat source, a reservoir, and a fluid, which is the carrier that transfers the heat. The reservoir is not usually an empty space in the earth's crust that fills with water but rather a volume of hot permeable rock through which the

fluid circulates and is heated. The geothermal fluid is made up mostly of rain and ground water. The fluid exists in either a liquid or vapor phase depending on the temperature and pressure in the reservoir. Once a suitable geothermal system is located, delineation and test wells must be drilled anywhere between 2000 to 8000 feet below the earth's surface to reach reservoirs of heated water in permeable rock formations.

Research is being undertaken to determine the feasibility of Engineered Geothermal Systems ("EGS") whereby deep wells are drilled into bodies of hot, compact rock and fractures created artificially. Water is introduced from the surface to permeate the artificial fractures and a reservoir is created from which the heated water can be extracted. Tremendous amounts of energy may be available for future generations through the deployment of EGS technology.

Whether from a natural reservoir or one created through artificial fracturing, the heated fluid is then brought to the surface where it is used to heat a secondary fluid that has a lower boiling point. As this secondary fluid is heated, it flashes to vapor which is used to drive the turbines that generate electricity. The cooled or spent geothermal fluid is subsequently re-injected through a separate "injection well" back to the underground reservoir to recharge the reservoir. The secondary working fluid is condensed back to liquid form and used again in the energy production to be reheated and vaporized in a continuous closed-looped process.

Geothermal power plants are baseload, operating non-stop 365 days a year at around 95% availability. Other sources of natural energy such as wind power, solar power, or hydroelectric power operate at much lower capacities. And because geothermal plants require no fuel to operate, they are unaffected by fluctuations in fuel prices, produce minimal harmful emissions, and have a very small surface footprint. Geothermal energy is thus a natural, clean, renewable, and efficient source of power, the potential of which we have only just begun to tap.

### *About Nevada Geothermal Power*

Nevada Geothermal Power is an experienced renewable energy developer that focuses on producing clean, efficient and sustainable geothermal electric power from high temperature geothermal resources in the United States. NGP's team consists of outstanding, dedicated individuals who are true experts in their fields. Our technical leaders have over a century of combined experience in the energy and geothermal energy communities and are universally respected for their expertise and commitment.

Blue Mountain was the first geothermal plant which NGP developed, constructed, and put into service. The Facility is situated on a 17 square mile property in Humboldt County, Nevada, 20 miles outside the town of Winnemucca at the western base of Blue Mountain in the southwest part of Desert Valley. The project company, NGP Blue Mountain I LLC is the registered owner of four federal geothermal leases covering eight sections of land and additional private geothermal leases covering nine sections of land. Our leases include both the geothermal production rights and the surface rights necessary for the power plant and well field facilities. The leases are situated with no competing geothermal leases in the area and no known environmental or other impediments to current and future drilling operations.

The Blue Mountain geothermal resource is the first new geothermal discovery in the Western United States in the past twenty years. Today Blue Mountain is one of the largest binary cycle geothermal power plants in Nevada. The Blue Mountain project was helped by the DOE loan guarantee program, which backs a loan by John Hancock. The Facility's operating capacity is sufficient to service the John Hancock loan through its remaining term. No taxpayer dollars have gone towards servicing the John Hancock loan.

But our strategic plans for Blue Mountain are more ambitious than merely producing power to meet our loan covenants. We continue to work actively with independent engineers to understand and utilize the geothermal resource at Blue Mountain. We remain bullish on the future geothermal resource potential at Blue Mountain and are working on a plan to build two new northern injection wells and one new production well to achieve a targeted 52 MW (gross) output, 41 MW (net). These growth plans are possible only because the solid foundation that has been put in place by the hard work of NGP employees, the financial support of our lenders, and the loan guarantee put in place by DOE.

### ***Conclusion***

Thank you again for the opportunity to speak with you today about NGP's Blue Mountain project. I am enormously proud of our accomplishments at the Blue Mountain geothermal site and look forward to many years of clean energy production at the Facility. I would be happy to answer any questions the Members of the Subcommittee might have.

BRIAN D. FAIRBANK

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**BRIAN D. FAIRBANK, P.Eng.**

Professional Geological Engineer with greater than thirty-five years of senior level experience in corporate/project finance, business management, project generation, property acquisition, project development and construction, feasibility studies, exploration programs, and environmental studies. Proven abilities in team leadership, marketing, and project engineering roles.

**EDUCATION**

B.A.Sc. (Geological Engineering), University of British Columbia, 1973

**PROFESSIONAL AFFILIATIONS**

Registered 1977, Association of Professional Engineers & Geoscientists of British Columbia  
Director (2010-present; member since 1977), Geothermal Resource Council (GRC), Davis, California  
Director (2009-present), Geothermal Energy Association (GEA), Washington, D.C.  
Past Chairman (1986-1987; member since 1977), Canadian Geothermal Energy Association (CanGEA)

**CORPORATE AND PROFESSIONAL EXPERIENCE**

**Nevada Geothermal Power Inc.**

**President and Chief Executive Officer, 2002 - Present**

Company founder responsible for corporate vision and development

- ◆ Assembled experienced Board of Directors and top senior management team for corporate management and corporate governance, finance and financial controls, investor, corporate and external relations, land management, permitting, resource development, project development and construction, and power plant operations
- ◆ Established relationships in finance markets: raised approximately \$80M in equity and \$200M in debt financing
- ◆ Oversaw development of Blue Mountain geothermal project from land acquisition and discovery work through to commissioning and operation of 49.5 MW "Faulkner 1" binary geothermal power plant
- ◆ Managed acquisition of diversified geothermal project portfolio

**Fairbank Engineering Ltd.**

**Principal, 1986 - 2004**

Responsible for corporate planning, fiscal controls, project management and operations, staffing, contract management, and reporting to clients and government agencies

- ◆ Conducted geothermal field evaluations and economic studies for numerous electric power and direct use projects in Canada, the USA, and in East Africa
- ◆ Advisor for Canadian aid program to accelerate steam field development at a producing geothermal field in Kenya. The rate of production well drilling was doubled and steam reserves to support an additional 60 MW power production were proven, which enabled the national power company to meet its planning schedule
- ◆ Conducted economic evaluations of mineral properties from discovery to pre-production stage; ore reserve estimates, mining methods, extraction technology, tailings management, environmental impact and closure plans; open pit, underground and heap leach mines

BRIAN D. FAIRBANK

- ◆ Managed gold and base metal exploration and ore delineation programs in Canada, USA, Mexico, and South America

**Nevin Sadlier-Brown Goodbrand Ltd.**  
**Partner, Exploration Manager, 1981-1986**  
**Project Engineer, 1977-1980**

- ◆ Responsible for new project development, implementing resource evaluation projects, and directing a staff of up to twenty professional geologists and engineers in the field
- ◆ Evaluated mineral deposits, authored engineering reports, and conducted exploration programs for a variety of gold and base metal mining projects internationally
- ◆ Designed and implemented innovative geothermal exploration, drilling, and development strategies for high-temperature systems throughout the Pacific Northwest and southwestern United States
- ◆ Managed the exploration program for the Meager Creek geothermal development project for B.C. Hydro Power Authority through the discovery phase
- ◆ Geothermal project engineering, costing and scheduling study with Acres Engineering as part of a Canadian International Development Agency (CIDA) project to develop a Kenya National Power Plan
- ◆ Member of US government fact finding task force on geothermal energy to be used as the basis for a twenty year power plan for the northwestern United States
- ◆ Feasibility studies for direct application of geothermal energy

**Noranda Exploration Co. Ltd.**  
**Senior Geologist (Yukon) 1976 - 1977**  
**Project Geologist 1973 - 1976**

- ◆ Field supervision of geological, geochemical, geophysical, and drilling programs for porphyry copper, carbonate hosted lead-zinc, sedimentary exhalative, volcanogenic massive sulphide, and skarn deposits in British Columbia and Yukon



**Committee on Oversight and Government Reform**  
**Witness Disclosure Requirement – “Truth in Testimony”**  
**Required by House Rule XI, Clause 2(g)(5)**

**Name:** Brian Fairbank, President & CEO, Nevada Geothermal Power, Inc.

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1. Please list any federal grants or contracts (including subgrants or subcontracts) you have received since October 2, 2009. Include the source and amount of each grant or contract.

In my individual capacity, I have not received any federal grants or contracts since October 2, 2009.

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2. Please list any entity you are testifying on behalf of and briefly described your relationship with these entities.

I am testifying on behalf of Nevada Geothermal Power, Inc. (“NGP Inc.”) and its subsidiaries, including NGP Blue Mountain I, LLC (the “Project Company”) – the entity that is the sole owner of the Blue Mountain “Faulkner I” Geothermal Power Plant facility (“Faulkner 1”). I am the President and CEO of NGP Inc. I am also the President, CEO, and serve as a Director of the Project Company.

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3. Please list any federal grants or contracts (including subgrants and subcontracts) received since October 1, 2008 by the entity(ies) you listed above. Include the source and amount of each grant or contract.

*Grants and Contracts Associated With the Blue Mountain “Faulkner I” Geothermal Power Facility*

- **\$57.9 Million Grant from the United States Department of the Treasury:** On November 12, 2009, the United States Department of the Treasury granted the Project Company’s application in the amount of approximately \$57.9 million for Specified Energy Property in Lieu of Tax/Credits relating to the Faulkner 1 plant under Section 1603, Division B of the American Recovery and Reinvestment Act of 2009 (“ARRA”).
- **United States Department of Energy Partial Loan Guarantee of \$98.5 Million Loan from John Hancock:** On September 2, 2010, the Project Company issued \$98.5 million of senior secured notes to John Hancock Financial Services under a Note Purchase Agreement with Hancock as the lead lender and the United States Department of Energy, under Section 1705 of ARRA, as loan guarantor of 80 percent of the amount of notes issued.
- **\$7.9 Million Grant from the United States Department of the Treasury:** On July 14, 2011, the Project Company received a grant from the Department of Treasury in the amount of approximately \$7.9 million for Specified Energy Property in Lieu of Tax/Credits under Section 1602, Division B of ARRA relating to drilling completed at the Faulkner 1 plant.

*Grants and Contracts Associated With Other Facilities Developed by NGP Inc.*

- **\$1.76 Million Grant from the United States Department of Energy:** On October 29, 2009 the United States Department of Energy awarded NGP Inc. a \$1.76 million cost-sharing grant to fund confirmation drilling at the Crump Geyser Geothermal Project. The funds were made available under ARRA's Geothermal Technologies Program and were matched by equivalent funds from NGP Inc. The Crump Geyser Geothermal Project is located in Oregon.
- **\$1.6 Million Grant from the United States Department of Energy:** On October 29, 2009 the United States Department of Energy awarded NGP Inc. a \$1.6 million cost-sharing grant to fund an innovative drilling project the Black Warrior Geothermal Project. The funds were made available under ARRA's Geothermal Technologies Program and were matched by equivalent funds from NGP Inc. The Black Warrior project is now referred to as the North Valley Project, which is located in Washoe and Churchill Counties, Nevada.

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*I certify that the above information is true and correct.*

Signature:



Date:

*May 14, 2012*

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