

Geothermal Energy Weekly

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National News

Senior Advisor to the Governor for RE Facilities to join GEA Geothermal Energy Finance Forum 2012

Press Release (San Francisco, California) January 4--Michael Picker, Senior Advisor to the Governor for Renewable Energy Facilities, Office of the Governor, State of California will join the discussion between the financial community and the geothermal industry when business leaders and the financial and investment communities convene in San Francisco for the GEA Geothermal Energy Finance Forum on January 18.

"We are extremely fortunate to have the Governor's office represented at this important industry event. Michael Picker's experience and knowledge in renewable energy policy will provide great insight to attendees," said GEA Executive Director Karl Gawell.

Picker, who serves as the Senior Advisor to the Governor for Renewable Energy Facilities, was appointed by Governor Jerry Brown in January 2011. Prior to his appointment, Picker served as senior advisor to the Governor for renewable energy facilities to Governor Arnold Schwarzenegger from 2008 to 2010.

San Francisco Mayor Edwin M. Lee remarked, "This valuable conference brings the finance and investment community together and provides a tutorial on geothermal energy investment with top experts and major players in geothermal development and finance. I know the discussions fostered by this important conference will be tremendously beneficial to the future of renewable energy."

California is a policy leader in the United States with one of the most ambitious Renewable Portfolio Standards in the country. California's landmark renewable energy standard legislation was signed into law by Governor Jerry Brown this year, and will require California utilities to provide at least a third of their electricity from clean and safe renewable sources like geothermal by the year 2020. With 48 operating geothermal power plants and approximately 2,500 MW of installed geothermal capacity, California is No. 1 in United States' geothermal generation. It is estimated that the state has a potential of more than 3,000 megawatts of additional power from geothermal energy, using current technologies.



To register for the event, please visit: http://geo-energy.org/events/finance_forum_2012.aspx. Significant discounts for GEA Members and Students are available. For more information or to receive media credentials, please contact Leni Schimpf, 646-695-7045, or Leni@rosengrouppr.com.

Renewable Energy Sees Explosive Growth in 2011

Sun Day Campaign—Press Release (Washington DC) January 3--According to the most recent issue of the "Monthly Energy Review" by the U.S. Energy Information Administration (EIA), with data through September 30, 2011, renewable energy sources continue to expand rapidly while substantially outpacing the growth rates of fossil fuels and nuclear power.

For the first nine months of 2011, renewable energy sources (i.e., biomass/biofuels, geothermal, solar, water, wind) provided 11.95% of domestic U.S. energy production. That compares to 10.85% for the same period in 2010 and 10.33% in 2009. By comparison, nuclear power provided just 10.62% of the nation's energy production in the first three quarters of 2011 -- i.e., 11.10% less than renewables.

Looking at all energy sectors (e.g., electricity, transportation, thermal), renewable energy output, including hydropower, grew by 14.44% in 2011 compared to 2010. Among the renewable energy sources, conventional hydropower provided 4.35% of domestic energy production during the first nine months of 2011, followed by biomass (3.15%), biofuels (2.57%), wind (1.45%), geothermal (0.29%), and solar (0.15%).

(On the consumption side, which includes oil and other energy imports, renewable sources accounted for 9.35% of total U.S. energy use during the first nine months of 2011.)

Looking at just the electricity sector, according to the latest issue of EIA's "Electric Power Monthly," with data through September 30, 2011, renewable energy sources (i.e., biomass, geothermal, solar, water wind) provided 12.73% of net U.S. electrical generation. This represents an increase of 24.73% compared to the same nine-month period in 2010. By comparison, electrical generation from coal dropped by 4.2% while nuclear output declined by 2.8%. Natural gas electrical generation rose by 1.6%.

Conventional hydropower accounted for 8.21% of net electrical generation during the first nine months of 2011 - an increase of 29.6% compared to 2010. Non-hydro renewables accounted for 4.52% of net electrical generation (wind - 2.73%, biomass - 1.34%, geothermal -



0.40%, solar - 0.05%). Compared to the first three quarters of 2010, solar-generated electricity expanded in 2011 by 46.5%; wind by 27.1%, geothermal by 9.4%, and biomass by 1.3%.

“Notwithstanding the recession of the past three years, renewable energy sources have experienced explosive rates of growth that other industries can only envy,” said Ken Bossong, Executive Director of the SUN DAY Campaign. “The investments in sustainable energy made by the federal government as well as state and private funders have paid off handsomely underscoring the short-sightedness of emerging proposals to cut back on or discontinue such support.”

The U.S. Energy Information Administration released its most recent "Monthly Energy Review" on December 23, 2011. It can be found at: <http://www.eia.gov/totalenergy/data/monthly/index.cfm>. The relevant charts from which the data above are extrapolated are Tables 1.1, 1.2, 1.3, and 10.1. EIA released its most recent "Electric Power Monthly" on December 16, 2011; see: <http://www.eia.gov/electricity/monthly/pdf/epm.pdf>. The relevant charts are Tables 1.1, ES1.A, ES1.B, and 1.1.A.

Company News

AltaRock: Newberry Project Moving Ahead

Although [an article on kbnd.com](#) discusses needing drilling permits for the Newberry Volcanic Monument geothermal project in Oregon, Susan Petty of AltaRock Energy, which is working along with Davenport Newberry on the project, told GEA that the project is currently working to permit the stimulation and testing of the stimulation rather than drilling. In this next phase, the developers will pump cold water into an existing hot impermeable well to induce fracturing and permeability enhancement. The phase will include some shallow holes for seismic monitoring, but will not include drilling of wells. The developers expect to create an Engineered Geothermal System (EGS), and if successful, plan to drill two geothermal wells into the EGS, likely in summer 2013.

The Newberry EA was released for public comment on Dec 22, 2011 and the public comment period ends on January 25, Petty told GEA. Following that, the BLM, Forest Service and DOE will review public comments and make a determination on whether the project can go ahead with the installation of a permanent microseismic array.



Enel Green Power: Over 880 MW of New Capacity Installed in 2011

Press Release [\[See full story\]](#) (Rome) December 29 – Enel Green Power ends 2011 by achieving its target of additional organic capacity installed that has been announced to the markets. With over 880 MW of new installed capacity during 2011, Enel Green Power, which boasts an integrated international business, confirms its sector leadership.

“The full achievement of our growth target”, commented Francesco Starace, CEO of Enel Green Power, “confirms that we are in line with our development plan and underscores the validity of our strategy, which is focused on geographical and technological diversification. We are demonstrating that we can fulfil our market commitments in the field of development and we will continue to implement our business plan according to schedule and procedures”.

To complete the achievement of this goal, Enel Green Power has brought five new plants online in the last days of December. (The five new plants are: an innovative solar PV facility combined with a geothermal plant in the USA, as well as two wind farms in Romania and two in Spain, for an overall capacity of more than 150 MW).

In the United States, Enel Green Power, through its US subsidiary EGP North America, has begun operation of a photovoltaic system that adds 24 MW to the 33 MW of the Stillwater geothermal power plant. This is the first renewable energy project in the world that combines the continuous generation capacity of binary-cycle, medium-enthalpy geothermal power with the peak capacity of solar power, allowing a better match with NV Energy’s customer needs. NV Energy has a contract to buy all the energy that will be generated by the plant. The solar power plant will generate around 40 million kWh of clean energy per year, enough to meet the needs of 15,000 American households as well as avoiding the emission of around 28,000 metric tons of CO₂ into the atmosphere each year. Combining two technologies to produce electricity from renewable sources at the same location increases the generation of zero-emission energy, but also makes it possible to use the same infrastructures such as, for instance, electrical interconnection lines, thereby further reducing environmental impact. The entry into service of this new plant brings Enel Green Power’s total installed capacity in North America to more than 1,000 MW.

Enel Green Power’s net installed capacity at the end of 2011 has reached an overall 7 GW, of which 3.5 GW wind, 2.5 GW hydro, 0.8 GW geothermal, 0.1 GW solar and 0.1 other renewable technologies (biomass and cogeneration).



GEA: Renewable Growth Should be a Priority for the President and Congress in 2012

This week on the National Journal Energy and Environment blog, reporter Amy Harder asked, "What's in Store for 2012? What energy and environment issues should President Obama and Congress focus on this year?" GEA Executive Director Karl Gawell responded that renewable growth should be a priority. "While there has been an abundance of debate in this political cycle about how to reduce the government deficit, the issues created by our continued dependence on imported oil and addiction to fossil fuels seem by comparison largely ignored," Gawell wrote. "Yet oil price spikes and severe weather events are both likely to impact our economy for generations to come and potentially in ways far more shattering than federal budget deficits. But, which is easier to solve, reigning in overspending or addressing either our tragic dependence on fossil fuels or its consequences in terms of climate and weather mayhem? (Here's a hint: President Bill Clinton was able to balance the budget, but his energy policies made only a dent in our national energy problems.)"

"One part of the solution is to sustain the growth of renewable energy technologies. Action is needed now to keep clean, domestic energy production growing, and there are several potential courses to take. Congress could agree to extend tax credits that are starting to expire; the renewable industries list this as a top priority. Even bolder action could be considered by also establishing a national renewable energy standard. We need growing markets and long-term incentives for new renewable industries to grow and become main-stream," Gawell wrote. Read more at: <http://energy.nationaljournal.com/2012/01/whats-in-store-for-2012.php>.

US Geothermal: Nevada PUC Approves 19.9-MW PPA for San Emidio

Press Release (Boise, Idaho) January 3--U.S. Geothermal Inc., a leading renewable energy company focused on the development, production and sale of electricity from geothermal energy, today announced that the Nevada Public Utility Commission has approved a 19.9 megawatt amended and restated power purchase agreement ("PPA") with its wholly owned subsidiary, USG Nevada LLC, for the San Emidio Project located in Washoe County, Nevada.

The amended PPA expands the existing 3.6 megawatt agreement to provide for the purchase of electric power by the Sierra Pacific Power Company ("SPCC") for up to 19.9 MW from two power generation units at San Emidio. The PPA has a term of 25 years with the starting price for power of \$89.75 per megawatt-hour subject to an annual escalation rate of 1%. The new Phase I power plant, which is an 8.6 megawatt (net) water cooled facility, achieved mechanical completion in December and is currently undergoing commissioning.



"Approval of this PPA is a requirement of the project finance arrangements we are currently negotiating for Phase I and II of the San Emidio project," said Daniel Kunz, U.S. Geothermal Inc. Chief Executive Officer. "We expect to be closing the project loan agreements in the coming weeks, after the new Phase I plant achieves commercial production," Kunz added.

Development of the Phase II plant has started with the initiation of production and injection well drilling at the site. It is expected that Phase II will utilize two to three existing injection wells and other infrastructure at the site that will be shared with Phase I. To allow for full power generation under the amended PPA, an additional 3.9 megawatts of transmission capacity has been requested from the SPCC Transmission group, which would expand output currently available under the existing 16 megawatt Small Generator Interconnection Agreement.

Recent drilling for Phase II has identified a potential deeper, higher temperature production zone south of the current Phase I production wells, which is expected to expand the known reservoir boundary. Phase II is a planned 8.6 megawatt (net) air cooled power plant and is scheduled to be on line during the 3rd quarter of 2013. Please visit our Web site at: www.usgeothermal.com

Renewable Energy and Climate Change

Heat of the Earth Locked Up

An [article on AOL Energy](#) quoted GEA Executive Director Karl Gawell about the underdog status of geothermal energy in the renewable energy world and in Congress. Gawell discusses the political scene as well as the outlook for geothermal energy development over the next couple of years. Projects due to come online in 2012 and 2013 include Energy Source's Hudson Ranch I project in California, Gradient Resource's 60-MW Patua plant in Nevada, and projects under construction in Oregon, Colorado, Idaho, and Hawaii; the industry could be looking at 500 MW of power coming on line.

While the growth is exciting, and some states such as California are aggressively supporting renewables, Gawell said a weakness geothermal experts have seen is in short-term policies that do not satisfy the needs of an industry where a power plant can take up to 4 to 8 years to complete. "We want to see congress have longer term energy policies," he said.



Possibilities Ahead for Integrated Energy Technologies

An [article on Reuters.com](#) discusses the ideas behind the “Third Industrial Revolution,” a movement to distribute power through a collaborative worldwide grid and also the name of the book by author and consultant Jeremy Rifkin, founder of the Foundation on Economic Trends. In the plan, commercial building owners and homeowners could distribute geothermal, solar, wind, or biomass along a collaborative Internet-like super-grid, integrating technologies of the Internet, green transportation, building-based micro-power plants, and power distribution. While such a grid would take decades to develop, *Reuters* notes some exciting prospects for investors.

State News

Hawai'i: Geothermal Working Group Presents Final Report; Puna Expansion to Lower Energy Costs

On January 4, the Geothermal Working Group Co-Chair Wally Ishibashi was scheduled to present the group's final draft of its report evaluating geothermal energy as the primary source of baseload power on the Island of Hawai'i. The report was sponsored by the County of Hawai'i and analyzes technical data and expert testimony. The island is currently dependent on petroleum for baseload power. For a full copy of the [Geothermal Energy Working Group - Interim Report](#), visit <http://www.hawaiicounty.gov/research-and-development>.

Meanwhile, the expansion of the Puna geothermal plant on the Big Island is [expected to save residents \\$0.70 per month](#) on electricity bills. An agreement between Hawaii Electric Light Co. and Puna Geothermal Ventures sees the savings increasing to \$1.89 per month by 2020, in comparison to oil production.

Nevada: Geothermal a Big Economic Indicator for 2012

An [article in a Reno Gazette-Journal](#) series examining key economic indicators for Nevada in 2012 focuses on geothermal progression.

"The economy continues to be a challenge overall," Jason Geddes, City of Reno environmental services administrator told the RGJ, "but I think we have an opportunity to attract more (renewable) companies here." Reno hosts at least 12 different geothermal companies, and was the site of the GEA's first National Geothermal Summit in August.

The article hailed the state legislature for keeping programs and incentives in place to help lure developers to the state, and named lack of transmission to big customers in California as the biggest barrier to development. In education, the University of Nevada-Reno hosted the



first-ever National Geothermal Academy program, and Truckee Meadows Community College added curriculum for geothermal, solar, and wind.

Oregon: OIT Sustainability Efforts Recognized

The Oregon Institute of Technology has received a STARS Bronze rating from the Association for the Advancement of Sustainability in Higher Education (AASHE). Oregon Tech's commitment to sustainability includes its Geo-Heat Center, established in 1974; the legislative establishment of the Oregon Renewable Energy Center at Oregon Tech in 2001; and its Renewable Energy Engineering program. The entire Klamath Falls campus uses geothermal heating and has a geothermal power plant.

"Oregon Tech has demonstrated a substantial commitment to sustainability by achieving a STARS Bronze Rating and is to be congratulated for their efforts," [AASHE Executive Director Paul Rowland told press](#). STARS (Sustainability Tracking, Assessment & Rating System), a new program for measuring sustainability in higher education, is open to institutions of higher education in the U.S. and Canada, and the criteria are accessible to anyone.

International News

Europe

Germany: Ambitious Energy Plan Could be Model for Nations

An [article in the Washington Post](#) describes how industrialized nations are eyeing Germany's efforts to achieve generation of a third of its power through renewable sources within a decade, and 80% by 2050 – among the world's most ambitious goals – as a model of whether a nation powered by renewables can succeed, create jobs, increase energy security, and reduce emissions. "Can Germany move us to new business models, new infrastructure?," Jeremy Rifkin, U.S. economist and author of "The Third Industrial Revolution" was quoted (see **Possibilities Ahead for Integrated Energy Technologies** in this *GEW* issue).

The number of Germans with jobs in the renewable sector has more than doubled since 2004 and is at about 370,000, according to the article. Germans currently pay a 3.5 euro cent per kilowatt-hour tax (about €157 or US\$205 per year for a family of four) toward renewables research, investment, and production. The nation passed 20% renewables-sourced energy in June, whereas the U.S. was at about 9%.



Iceland: Mannvit's CEO Named Nation's Business Man of the Year

Iceland's Business Man of the Year, selected by a committee organized by the Icelandic business magazine Frjáls Verslun (Free trade), chose the CEO of an engineering company involved in geothermal activity for 2011's award. CEO of Mannvit Dr. Eyjólfur Árni Rafnsson was selected for his management and business development acumen which helped Mannvit thrive, yielding impressive financial results during Iceland's economic slowdown.

Dr. Rafnsson [was quoted during the awards](#) ceremony: "While I am honored by this award, this occasion would not be possible were it not for our employees. Mannvit's success is, and will continue to be, a team effort. For that I offer my thanks and gratitude to our staff members for their hard work and perseverance during these challenging economic times." Dr. Rafnsson went on to say, "Our profession [consulting engineering] has generally had a low profile in the Iceland business community, and therefore I feel that this is a particularly special recognition for Mannvit; the first of its kind in our field."

Norway: Group Granted Funding to Develop Efficient Geothermal Drilling Methods

The [Research Council of Norway has granted](#) NOK 24 million to NEXT-Drill, a four-year project to develop geothermal technology. The focus is on new and more efficient drilling methods. The group sees potential for geothermal advancement in Norway and supports geothermal as a source of energy that could play a significant role in the global green energy mix. NEXT-Drill, coordinated by SINTEF, is a cooperation project between research institutes and universities including energy companies Statoil and Statnett, Atlas Copco Scoroc, and Norwegian companies such as Resonator, Norhard, Pen-Rock, and Rock Energy. Scientists from SINTEF, NTNU, IRIS, and the University of Stavanger are participating.

Turkey: Zorlu Plans Geothermal Investments in 2012

Zorlu Holding AS [plans to invest](#) over \$1 billion in 2012, with its energy producer, Zorlu Enerji Elektrik Uretim a main focus of the plan; a portion of that will go into the company's geothermal energy plans. Other investments include home appliances, wind energy, mining, and real estate. "We have made an important step toward Turkey's largest geothermal power station, which we aim to finish in 2013," said Zorlu general director Arif Özozan in a statement this past July. Sumitomo Corp. and Fuji Electric won the tender to build Zorlu's geothermal power station in Denizli province, which is planned for 60 MW of electrical power and 50 MW of thermal power capacity.



Pacific

New Zealand: Eastland Group Updates Finances and Considers Increased Geothermal Opportunities

Eastland Group has announced its net profit for the six months to September 30, 2011. Its profit was down \$400,000 from the previous year, at about \$4.2 million. The group is considering introducing new equity to fund capital investment opportunities, especially in geothermal energy in the eastern Bay of Plenty. The geothermal power project in Kawerau, Te Ahi o Maui, could require an investment of about \$60 million. [Chief executive Matt Todd told press](#) the fall in profit was attributed to higher depreciation charges on the revaluation of port operating assets, which reduced net profit after tax by \$1.0 million. The group's total assets have grown to \$349.4 million, with bank debt stable at \$100.4 million.

Geothermal Heat Pumps and Direct Use

Colorado: Guests at Avalanche Ranch Get Geothermal-Heated Pools

Avalanche Ranch in Colorado has seen a significant rise in guests coming to stay at its cabins since it has added three hot-spring geothermal pools. "The pools have changed the character of the place enormously," Molly Ogilby Jacober, daughter of Avalanche Ranch owner Chuck Ogilby, [was quoted](#). "It gives the property the feel of a resort. There's a new reason to come up to this valley." The addition of the geothermal pools took about two years to plan and obtain permits, and an investment of nearly \$200,000 to determine whether the project was viable.

While a geologist several years ago had concluded there was just a 50-50 chance potential for hot-springs pools, in 2010 a geology class from Carbondale's Colorado Rocky Mountain School determined the odds of having adequate water were more than 70%. "That was the key moment," Jacober said. "They felt it was a true indication of geothermal activity under the ground. They gave us a 70 percent chance of having enough water. And they were right. We drilled, and there was water." The Ogilbys are now planning to create a system that uses the geothermal energy for heating guests' cabins, and are applying for public funds.



Japan: Fujitsu Group's First Geothermal Heat Extraction System Deployed

A geothermal heat extraction system has been deployed at [Fujitsu's Nagano Plant](#) and is expected to begin operations this month. Using geothermal for heating and cooling, Fujitsu expects to cut CO₂ emissions by roughly 120 tons per year. The Fujitsu Group promotes the increased use of renewable energy as part of the Fujitsu Group Environmental Protection Program, though this will be the Fujitsu Group's first use of a geothermal heat extraction system and will be used to power water heater equipment for air conditioners at a manufacturing plant's clean rooms. The company may expand the technology to other locations.



<http://www.geo-energy.org/updates.aspx>

Notices

Current Notices

International Market Workshop for GEA Members to Precede January San Francisco Event (January 17)

GEA recently began working on an exports/international market initiative. As part of this initiative, we will be hosting a West Coast International Markets Workshop on January 17, 2012 from 1pm to 4pm to dialogue with GEA member companies regarding exports and international markets. This meeting will be held at the Marriott Marquis in San Francisco, CA in coordination with GEA's Finance and Development Forum occurring the following day.

We are also inviting select government officials to participate and help companies explore how the National Export Initiative applies to geothermal companies. This meeting is for GEA member companies either currently exporting or interested in entering foreign markets. For more information about this meeting, contact Alison Holm at alison@geo-energy.org.



Comments Invited on Sage Grouse EIS (February 7)

The Bureau of Land Management and the U.S. Forest Service are addressing ongoing threats to the greater sage-grouse and its habitat throughout the West through a Notice of Intent for the Sage Grouse EIS, published in the Federal Register December 9. Greater sage-grouse currently use around 47 million acres of land managed by the BLM and around nine million acres of land managed by the USFS. About 98 BLM Resource Management Plans address greater sage-grouse, while the USFS expects to evaluate conservation measures into as many as nine Land and Resource Management Plans considered high priority for the conservation of sage-grouse.

The BLM and the U.S. Forest Service are seeking comment on issues that should be addressed in evaluating greater sage-grouse conservation measures in land use plans in 10 Western states. Comments for the [Eastern Region](#) may be sent to sageeast@blm.gov. Comments for the [Western Region](#) may be sent to sagewest@blm.gov. General questions about the planning strategy should be directed to SageQuery@blm.gov. The Bureau of Land Management will be holding scoping meetings in western states in January. See:

<http://www.blm.gov/wo/st/en/prog/more/sagegrouse/western.html>. Comments are due February 7, though they will be accepted until the 15th.

To get on an email list for notices/newsletters send a request with your contact information to sagewest@blm.gov. Questions: sagequery@blm.gov. To follow the process on the Web site, go to www.BLM.gov / "News and Information" (on right side) / "Federal Agencies Announce Initial Step to Incorporate Greater Sage-Grouse Conservation Measures into Land Management Plans" / Under "Public Meetings," click "Western."

Comments Invited on Humboldt-Toiyabe National Forest Draft EIS for Geothermal Leasing (February 13)

Under the recently completed Humboldt-Toiyabe National Forest Draft Environment Impact Statement (DEIS) for Geothermal Leasing, the Forest Service would consent to lease up to approximately 615,230 acres of National Forest System land that are administratively available for geothermal leasing. The National Environmental Policy Act (NEPA) provides for a 45-day public comment period for a DEIS. Comments on the DEIS should be specific and address the adequacy of the document and the merits of the alternatives discussed (40 CFR 1503.3). The decision for this project will be subject to the appeal process pursuant to Forest Service regulations at 36 CFR 215. Only those who provide comment on the DEIS during the comment period may participate in the 215 appeal process.



The full proposal, including maps of the proposed areas, is available online at www.fs.usda.gov/goto/htnf/geothermal. Comments may be submitted online to: comments-intermtn-humboldt-toiyabe@fs.fed.us. Please include "Geothermal EIS" in the subject line. Written comments must be submitted to: Keith Whaley, Project Manager, Humboldt-Toiyabe National Forest, Bridgeport Ranger District, HC 62 Box 1000, Bridgeport, CA 93517; fax (760) 932-5899; phone (760) 932-7070; or kwhaley@fs.fed.us. Comments must have an identifiable name attached or verification of identity will be required. A scanned signature may serve as verification on electronic documents.

A public open house for this project will also be held on January 20th from 4:00 p.m. to 7:00 p.m. at the Forest Supervisor's Office, 1200 Franklin Way, Sparks, NV.

GRC Call for 2012 Annual Meeting Papers (April 27)

Present your paper at the Geothermal Resources Council's 2012 Annual Meeting, September 30 through October 3, 2012 in Reno, Nevada. Authors may submit an oral technical presentation and/or poster before April 27. Please direct all content related questions to: Frank Monastero at monasterofc@gmail.com; Lisa Shevenell at lisaas@unr.edu. Please direct all format and general submission questions to: Anh Lay at alay@geothermal.org or (530) 758-2360 ext. 100

2012 Paper Topics

- Business Development / Finance
- Basin & Range / Cascades / Rocky Mountains
- Direct Use / Heat Pump
- Enhanced Geothermal Systems
- Exploration / Resource Assessment / Management
- Geology, Geophysics and Geochemistry
- Geothermal Energy Associated with Oil and Gas Operations
- Geothermal Project Case Studies
- International
- Power Operations / Maintenance / Production Technologies
- Regulatory / Environmental Compliance / Policy Issues
- Utility and Transmission Issues
- Other _____

Instructions to submit: http://geothermal.informz.net/geothermal/archives/archive_1972541.html

Project Abysse Seeks Support to Build Remote-Controlled, Mine-Shaft Submarine for Geothermal Implementation

From Project Abysse: We are 20 engineering students from the University of Sherbrooke that are conceiving and building a remote-controlled submarine capable of navigating in a submerged mine shaft and measuring the temperature of the surrounding water. The objective of our project is to promote the use of geothermal energy. Having the thermal gradient of a mine shaft can potentially lead to geothermal implementations.



3D rendering of the submarine

We are currently looking for sponsors to help and encourage us in our endeavors, both on the financial side, as well as technical support. Any technical information or monetary or material donation would be greatly appreciated.

If you wish to help us in any way, you can contact Mathieu Couture at: Mathieu.G.Couture@USherbrooke.ca, or Stephane Labadie at: Stephane.Labadie@USherbrooke.ca. For more information regarding the project, visit our Web site: www.projetabysse.com.

Is Your Company Providing a Geothermal Internship?

If your company working in the geothermal industry has provided internship opportunities in the past, or is interested in doing this in the future, GEA can help. Contact Alison Holm: Alison@geo-energy.org. To see some of the work that GEA has done connecting and providing resource for students who are interested in geothermal careers, visit GEA's networking database, the Geothermal Web: <http://geothermalweb.org/Students.aspx>.

Employment

New This Week

Geothermal Expert, MunichRE, Germany

This job is with MunichRE's Entrepreneurial Risks Solutions Department, focusing on geothermal exploration risks during implementation of their internationally oriented strategy for the insurance of geological risks as well as geological risk assessment and monitoring.

- Job posting at MunichRE: <https://munichre.tms.hrdepartment.com/cgi-bin/a/highlightjob.cgi?jobid=1943>.
- See the ThinkGeoEnergy Geothermal Job Portal at <http://jobs.thinkgeoenergy.com/>.

Geothermal Operator, Enel Green Power, Nevada

Responsible for outside operations, general housekeeping, minor maintenance, maintaining equipment, taking logs of equipment, maintaining company vehicles, operating equipment, and assisting A and B operator as needed; and Performing all necessary tasks as pertained to Operations of a Binary Cycle Geothermal Power Plant, or as assigned by Plant Supervisors or Plant Manager.

- Job posting at Enel Green Power: http://www.enelgreenpower.com/en-GB/ena/company/work/Geothermal_Operator/index.aspx.
- See the ThinkGeoEnergy Geothermal Job Portal at <http://jobs.thinkgeoenergy.com/>.

Drilling Manager, Origin Energy, Indonesia

Lead geothermal drilling projects in Indonesia, Jakarta based with domestic and international travel. As a result of Origin's continued commitment to renewable energy and sustainability this newly created position has been established to manage upcoming drilling programs in our Indonesian joint venture geothermal business – Origin Tata Power (OTP). To be successful in this role a drilling engineering and project management background is required with a minimum of 5-6 years of specific geothermal drilling experience. Sound knowledge of petroleum engineering would also be an advantage.

- Contact: Jennifer Blake on +617 3867 0022 or email jennifer.blake@originenergy.com.au.
- See description at the ThinkGeoEnergy Geothermal Job Portal, <http://jobs.thinkgeoenergy.com/>.

Theme Leader, Petroleum & Geothermal Portfolio, CSIRO, Australia

The Theme Leader leads research activities in Gas Production and Processing and Geothermal Energy. The PGR portfolio develops and deploys R&D solutions for oil, gas and geothermal energy exploration, production and processing as well as CO₂ capture and storage technologies, aiming at a safer, cleaner, and secure Australian energy future. The Theme Leader will have direct responsibility to the Portfolio Director for successful execution and management of the Theme, will recommend the strategic direction of the Theme, and will oversee the integration and delivery of the science. The successful applicant will also have a key role in designing and facilitating successful delivery and adoption of the science in line with the Theme goal.

- Job posting at CSIRO:
<http://csiro.nga.net.au/cp/index.cfm?event=jobs.checkJobDetailsNewApplication&returnToEvent=jobs.listJobs&jobid=1cabe750-dea2-8b05-548c-650bc15fa117&CurATC=EXT&CurBID=62afb35d-9273-4a11-8dcc-9db401354197&JobListID=8664bb62-dd2a-b70c-7ed4-5bdf68cebd3a&jobsListKey=918a8aeb-3528-4ef7-b4e4-814273e5dd8e&persistVariables=CurATC,CurBID,JobListID,jobsListKey,JobID&lid=89694670054>.

- Position details: <http://csiro.nga.net.au/publicfiles/csiro/jobs/1CABE750-DEA2-8B05-548C-650BC15FA117/Position%20Details%20WAN02346.pdf> [PDF]
- See the ThinkGeoEnergy Geothermal Job Portal at <http://jobs.thinkgeoenergy.com/>.

PostDoc Research Assistant, Geothermal/ Geochemistry, University of Utah, Utah

The Energy & Geoscience Institute (EGI) at the University of Utah is seeking applicants for a postdoctoral research position in geothermal geochemistry. The successful applicant will conduct original research on water, gas and mineral interactions in geothermal systems from a variety of geologic environments. This position offers the opportunity to work with a highly skilled interdisciplinary team of scientists and engineers in the energy industry. The successful applicant must therefore have excellent oral and written communication skills.

- Job posting at the University of Utah Career Portal: <http://utah.peopleadmin.com/postings/12103>.
- Interested applicants should send resumes and the names of three references to Dr. Joseph Moore at jmoore@egi.utah.edu.
- See the ThinkGeoEnergy Geothermal Job Portal at <http://jobs.thinkgeoenergy.com/>.

Senior Project Manager, Enel Green Power, Nevada

The Sr. Project Manager will manage all activities involved in the project design lifecycle. He/She will be responsible for projects in all technologies of renewable energy production including wind, solar, hydro, geothermal and biomass. 10 yrs of related work experience is required.

- Job posting at Enel Green Power Web site: www.enelgreenpower.com/en-GB/ena/company/work/
- See the ThinkGeoEnergy Geothermal Job Portal at <http://jobs.thinkgeoenergy.com/>.

Drilling Engineer, Transmark Renewables, The Netherlands

Transmark Renewables is looking for a fulltime Geothermal Drilling Engineer who will work within a small team involved in developing drilling campaigns in the various license areas throughout the world. The Geothermal Drilling Engineer will report to the Drilling Manager and cooperate and liaise with the drilling and wider Transmark team.

- Job posting on Linked-in:
http://www.linkedin.com/jobs?viewJob=&jobId=2334449&srchIndex=2&trk=njsrch_hits&goback=.fjs_geothermal_*1_*1_Y_*1_*1_*1_1_R_true_*2_*2_*2_*2_*2_*2_*2_*2
- See the ThinkGeoEnergy Geothermal Job Portal at <http://jobs.thinkgeoenergy.com/>.

Postdoctoral Research Associate, Los Alamos National Laboratory, New Mexico

The Computational Earth Science group, Earth and Environmental Sciences (EES) division, has an immediate opening for a creative and resourceful scientist to join their interdisciplinary team to develop and apply novel computational techniques for subsurface flow and solute transport in fractured media. A Ph.D. in Hydrology, Hydrogeology, Geosciences, Applied Math, Computational Sciences, Physics or Engineering completed within the last five years or soon to be completed is required.

- Job posting at the <http://www.lanl.gov/science/postdocs/>.
- Contact: Scott Painter (spainter@lanl.gov; 505 606 1895).
- See the ThinkGeoEnergy Geothermal Job Portal at <http://jobs.thinkgeoenergy.com/>.

Employment Opportunities

Job opportunities in or related to the geothermal energy industry are published in GEA's newsletter - the *Geothermal Energy Weekly* free of charge. Contact: leslie@geo-energy.org.

Intern, Hot Dry Rocks, Australia

(See also: <http://geothermalweb.org/>)---Hot Dry Rocks (HDR), an Australian Geothermal Consultancy is looking for an intern starting in March 2012. This non-paid intern will work 6 to 10 hours per week at our Melbourne Office and Lab. Tasks will involve assisting the lab manager in the preparation of rock samples for analysis, data management of rock core samples and production of geothermal maps.

HDR is Australia's foremost and largest geothermal-specific exploration and development consultancy. HDR specialises in locating and characterising geothermal resources suitable to exploit for power generation. We have worked on scores of projects across Australia and in other parts of the world; in Hot Sedimentary Aquifers, Engineered Geothermal Systems (EGS), and conventional geothermal systems.

HDR's strength lies in combining expertise in crustal heat flow measurement and modelling, EGS research and development, and petroleum and mineral exploration.

HDR also supports an internal research and development program, delivering state-of-the-art tools and software for the geothermal sector. For example, HDR developed an electronic divided bar meter for rock thermal conductivity measurement—the first portable instrument of its type in the world—and operates the only commercial laboratory for rock thermal property measurement in Australia.

Through its in-house expertise and strategic partnerships, HDR offers a full range of services and advice from initial ground selection, exploration and resource characterisation; through drilling, reservoir stimulation and appraisal; to economic modelling and full-scale development. HDR is focused on the subsurface aspects of geothermal energy development.

Interested candidates should submit a letter of interest, resume and two letters of reference to Lawrence Molloy at

lawrence.molloy@hotdryrocks.com

Reservoir Engineer, CALPINE, The Geysers, Middletown, CA

Position Summary: Create and maintain reservoir-steamfield-powerplant simulation models. Monitor reservoir performance. Apply expertise to reservoir management, operational problems, and forecasting at The Geysers, the world's largest geothermal field. Calpine is North America's leading geothermal power producer. At The Geysers, about 100 miles northeast of San Francisco, Calpine harnesses naturally heated steam from the earth to create electrical power. This renewable "green" power is available to consumers throughout California. This position reports to the Manager of Geothermal Production Analysis. Please apply online at

<http://www.calpine.com/careers/>

Essential Duties and Responsibilities:

1. Build and maintain calibrated numerical simulation models of the reservoir-pipeline-power plant system. Use the model to forecast steam flows under different operational scenarios.
2. Develop conceptual models of the reservoir. Prepare estimates of field reserves and forecasts of future production and generation. Prepares related reports as needed.
3. Provide support on forecasts of future capital improvements, generation and revenues.
4. Contribute insight to the broader team's thinking about the nature of The Geysers resource and the appropriate strategy for managing this unique asset within Calpine's stated "Next 50 Years" initiative.

Qualifications and Experience:

1. Education: Bachelor of Science degree and graduate degrees (MS or PhD) in GeoScience or Engineering, with background in oil/gas/geothermal reservoir engineering.

2. **Geothermal Reservoir Simulation:** Expertise in large-scale numerical simulation of heat and mass flows in geothermal reservoirs, including understanding of numerical modeling techniques and underlying physical principles. Ability to integrate the reservoir simulation with a steam gathering system model and turbine performance curves in order to produce valid generation forecasts.
3. **Reserves and Economics:** Ability to translate current reserves and production forecasts into economic projections that meet financial reporting standards.
4. **Other Reservoir Engineering Skills:** Deep understanding of water-steam thermodynamics. Experience with decline curve analysis, wellbore flow modeling, flow test techniques, pressure build-up testing, interference testing, and other standard reservoir engineering methods applied to geothermal reservoirs.
5. **Safety Consciousness:** Commitment to following safe work practices that minimize risks to people, property, and the environment.

Chief Reservoir Engineer, CalEnergy, Calipatria (Imperial Valley), CA

Applicants should apply via the Web site: <http://www.calenergy.com/common/careers/taleo.asp?c=cal>

Primary Job Duties and Responsibilities

- Maintain an accurate and current reservoir engineering database for the areas of responsibility. This includes maintaining a current set of well production histories, observation of well data, geochemical trends and relevant geological data for the assigned fields.
- Prepare authorization for expenditures and economics for well work and equipment.
- Conduct and supervise well-field related activities that include but are not limited to the following: well acidization, well surveys (static, pressure-temperature-spinner, and caliper), coiled tubing cleanouts, capillary tubing installations and tracer enthalpy testing.
- Develop new and innovative technical solutions to resource and/or drilling related issues as required.
- Diagnose well problems and engineer solutions. This includes using simulation tools to model downhole flow conditions to diagnose well problems and be proactive in preventing possible problems.
- Monitor well-field performance of MidAmerican Energy Company geothermal fields to determine potential problems that could arise and simulate current trends to the future to determine needed changes in operating procedure.

- Coordinate with all professional resource sources to provide a comprehensive interpretation of the company's geothermal and mineral reservoirs. Interpretation should be fully documented for financing.
- Responsible for data collection and analysis of Region 1 shallow heat anomaly to meet regulatory obligations and provide an appropriate management program.
- Responsible for coordinating the development of appropriate software tools to manage the reservoir and production data gathered from the field.
- Provide monthly reporting to California department of oil, gas and geothermal resources on production and injection as well as quarterly reporting to environmental agencies.
- Collect/analyze Pressure-Temperature-Spinner and capillary tubing data.
- Must have working knowledge of reservoir simulation to oversee, direct and troubleshoot outside simulations of reservoir for financing and development.
- Develop well flow performance curves.
- Provide engineering analysis and economic models for exploration, development, workover and acquisition projects.
- Provide engineering technical support to CalEnergy Operating Corporation and global MidAmerican Energy Company operations as required.

Qualifications

- Bachelor's degree or higher in engineering, preferably petroleum.
- At least fifteen years of related experience and/or additional resource engineering-related training. Geothermal resource engineering experience is required and some petroleum engineering experience in oil and gas is also desired.
- Effective oral and written communication skills. Ability to read, write, analyze, and interpret technical procedures or regulations. Ability to effectively present information and respond to questions from managers and employees.
- Effective analytical, problem-solving and decision-making skills. Ability to work with mathematical concepts such as probability and statistics and complex equations including algebra, trigonometry, geometry, calculus, as well as differential equations. Must have basic computer programming ability and be very fluent in spreadsheet analysis. Must have a solid understanding and be proficient in economic analysis. Must be able to work with math in an abstract way. Must be able to modify and/or derive mathematical equations from physical processes and relationships.

- The employee should be able to solve tough problems and deal with a variety of variables in situations where only limited standardization exists. Employee needs to synergize several inconsistent partial data sets to arrive at abstract answers. Employee should be able to interpret a variety of instructions furnished in written, oral, diagram or schedule form. Ability to visualize and comprehend the dynamic conditions and possibilities that occur during power plant and well-field development and the changes to the process that will occur over time and with proposed changes.
- A valid California driver's license is required.
- Project management skills; ability to prioritize and handle multiple issues and projects concurrently.

Research Geologist/Geophysicist, United States Geological Survey

The USGS in Menlo Park, California, has an opening for a Research Geologist/Geophysicist to conduct research in support of geothermal energy assessments, with a focus on the structural, geomechanical, thermal, and hydrologic properties of fault-hosted hydrothermal systems. Detailed information on the position can be found at <http://tinyurl.com/USGSGeothermalJob>. Individuals must apply online at <http://www.usajobs.gov/> to receive consideration. For more information about the USGS, visit: <http://www.usgs.gov/ohr/great.html>.

Requests for Proposals

Proposal Announcements

Proposals and other announcements in or related to the geothermal energy industry are published in GEA's newsletter - the *Geothermal Energy Weekly* free of charge. Contact: leslie@geo-energy.org.

Energy Efficiency Programs, Focus on Energy (January 11)

Focus on Energy RFP seeking independent implementers, or teams of implementers, to deliver energy efficiency programs for residential and non-residential customers under the Focus on Energy Targeted Markets (business) Core Programs and select Mass Markets (residential) Programs. Contact: rfp@shawgrp.com

Financial JV Partner Needed, Geothermal Power Generation Project in Indonesia

The promoters were awarded the bid to build a 65 MW Geothermal Working Area (GWA) and the mining permit (IUP) of Geothermal in West Nusa Tenggara Province, Indonesia, in July 2010. The IUP is valid up to 35 years, with 3 years for exploration, 2 years for feasibility study & construction, and 30 years for commercialization. Each stage could be extended by government approval.

Promoters can sell electricity to the PLN (National Electricity Grid of Indonesia) at USD 9.65 cents per kWh. The promoters have entered a long-term Power Purchase Agreement for 25 years. Promoters must conduct exploration within the next 6 months.

The recommended activities of exploration stage consist of magneto telluric, gradient temperature drilling and exploration drilling. The outcome of the exploration stage is to confirm the status of probable reserve from the hypothetical resource at 65 MW. The estimated capital expenditure for the exploration stage is US \$15 million, which is required to determine the location for drilling the exploitation wells.

After confirming the location of the exploitation wells, 5–10 production wells will be drilled to produce 50 MW steam. The steam shall be converted into electricity power by constructing the steam gathering facilities, piping, infrastructures and power plant within 2 years. A mix of equity and debt finance of the total amount of the capital expenditure will be about USD \$150 million.

Projected forecasts can be disclosed during the initial conversation with potential JVC financial and EMC partners. Yearly Projected Net Profit is estimated to be \$12 Million USD with an IRR of 16.2%. Please contact Dr. Tom Lannin at tlannin@gmail.com to discuss details and terms. The opportunity is open for 90 days. *(Posted ~Nov. 17, 2011)*

Industry/University Cooperative Research Centers, NSF (February 1)

The National Science Foundation requests proposals for Fundamental Research Program for Industry/University Cooperative Research Centers. Areas of interest include, but are not limited to: Energy and Environment; Advanced Manufacturing; Biotechnology; Advanced Materials; and Fabrication and Process Technology. \$1.6 million expected to be available, up to 10 awards anticipated. Responses due 2/1/12. For more info, contact Rathindra DasGupta at rdasgupt@nsf.gov or go to:

http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf11570. Refer to NSF 11-570. (Grants.gov 8/10/11)

Sustainable Energy Pathways, NSF (February 1)

The National Science Foundation requests proposals for Sustainable Energy Pathways. This RFP will support interdisciplinary efforts by teams of researchers to address the challenges of developing efficient pathways towards a sustainable energy future. \$34 million expected to be available. Responses due 2/1/12. For more info, including agency contacts, go to:

http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf11590. Refer to Sol# 11-590. (Grants.gov 9/22/11)

Environmental Engineering, Energy for Sustainability, and Environmental Sustainability, NSF (February 17)

The National Science Foundation requests proposals for the following programs, with responses due 2/17/12. :

- Environmental Engineering. The goal of this program is to encourage transformative research which applies scientific principles to minimize solid, liquid, and gaseous discharges into land, inland and coastal waters, and air that result from human activity, and to evaluate adverse impacts of these discharges on human health and environmental quality. \$9.4 million expected to be available, up to 44 awards anticipated. For more info, contact Paul Bishop at pbishop@nsf.gov or go to:
http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=501029. Refer to Sol# PD-12-1440. (Grants.gov 6/8/11)
- Energy for Sustainability. This program supports fundamental research and education in energy production, conversion, and storage and is focused on energy sources that are environmentally friendly and renewable. Sources of sustainable energy include: Sunlight, Wind/Wave, Biomass, and Geothermal. \$9.2 million expected to be available, up to 42 awards anticipated. For more info, contact Gregory Rorrer at gorrer@nsf.gov or go to: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=501026. Refer to Sol# PD-12-7644. (Grants.gov 6/8/11)
- Environmental Sustainability. This program supports engineering research with the goal of promoting sustainable engineered systems that support human well-being and that are also compatible with sustaining natural systems. \$5.4 million expected to be available, up to 45 awards anticipated. For more info, contact Bruce Hamilton at bhamilto@nsf.gov or go to:
http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=501027. Refer to Sol# PD-12-7643. (Grants.gov 6/8/11)

For Students! Regional Energy Department Business Plan Competitions (March 2)

From EERE Network News---If you're a university student interested in low-carbon technologies and entrepreneurship, then this is the premier opportunity for you to pitch your idea. The Regional Clean Energy Business Plan Competition is accepting business plan submissions until March 2, 2012.

Across the country, six regional competitions will serve as platforms for students to come up with innovative business plans to transform great clean energy ideas into great businesses. Based in California, Colorado, Illinois, Maryland, Massachusetts, and Texas, the regional competitions span the entire nation and all U.S. territories. Each region is unique in its own right, but they all share the common goal of bringing clean technologies to the market through creative business solutions.

Some of the submission deadlines have already passed while others range to March 2, 2012. Be sure to individually check regional competitions and the corresponding deadline [here](#).

The six regional winners will each receive \$100,000 in prize money and a chance to compete for a National Grand Prize at a competition held at DOE headquarters in Washington, D.C., in the summer of 2012. See the [Energy Blog post](#).

Renewable Energy, Hawaiian Electric Company

Hawaiian Electric Company (HECO) RFP seeking at least 200 megawatts (MW) of renewable energy projects for Oahu. The RFP is open to any commercially viable renewable technology that can generate electricity on Oahu or on another island from where energy can reasonably be transmitted to Oahu via undersea cable system, no later than December 31, 2018. The formal RFP is expected to be released March 31, 2012. Contact: Peter Rosegg, peter.rosegg@heco.com or 808-543-7780

Events

GEA and GEA-Sponsored Events

Agenda -- GEA Geothermal Energy Finance Forum, San Francisco, CA (January 18)

GEA will be hosting its next Geothermal Energy Finance Forum at San Francisco's Marriott Marquis on January 18, 2012. This event will highlight the leading companies in the geothermal market, as well as examine the risks and benefits to investing in geothermal energy.

The latest updates to the agenda are below:

Finance Forum moderated by:

Karl Gawell, Executive Director, GEA, confirmed

Paul Thomsen, Director of Policy and Business Development, Ormat Technologies, confirmed

7:00-8:00am Registration, light breakfast

Moderated by Paul Thomsen, Director of Policy and Business Development, Ormat Technologies

Morning session: 8:00-12:30pm

Jonathan Weisgall, Vice President of Legislative and Regulatory Affairs, MidAmerican Energy Holdings

8:00-8:15am: Welcome, Opening Remarks

Company, confirmed

Karl Gawell, Executive Director, GEA, confirmed

Kent Burton, Senior Vice President, National Environmental Strategies, confirmed

Michael Picker, Senior Advisor to the Governor for Renewable Energy Facilities, Office of the Governor,

V. John White, Executive Director, CEERT, confirmed

State of California, confirmed

9:10-9:40am: Geothermal Market Expectations and Trends

8:15-8:30am: Gold Level Sponsor: "Supporting Geothermal Development in the US and Abroad"

Moderated by Karl Gawell, Executive Director, GEA

Mike Ranz, President, SNC-Lavalin Thermal Power, confirmed

Mark Taylor, Head of Geothermal & CCS Research, Bloomberg New Energy Finance, confirmed

Mackinnon Lawrence, Senior Analyst, Pike Research, confirmed

8:30-9:10am: State and Federal Policy Outlook

9:40-10:00am: Keynote Remarks

Karen Douglas, Commissioner, California Energy Commission,
confirmed

*10:00-10:15am: Morning Break**10:15am-11:15am: Geothermal Developer Presentations*

*Moderated by Marty Olson, Director, Renewable Energy, SNC-
Lavalin Thermal Power*

Dave Watson, CEO, EnergySource, LLC, confirmed

Doug Glaspey, President and COO, U.S. Geothermal,
confirmed

Craig Mataczynski, CEO, Gradient Resources, confirmed

Shuman Moore, CEO, Ram Power, Inc., confirmed

*11:15-12:15am: Geothermal Developer and Technology
Presentations*

*Moderated by Paul Thomsen, Director of Policy and Business
Development, Ormat Technologies*

Gevan Reeves, Director, Strategic Origination, Calpine
Corporation, confirmed

Paul Gutwald, VP Marketing and Government Relations, Simbol
Materials, confirmed

Halley Dickey, Director Geothermal Business Development,
TAS Energy, confirmed

Michael Ronzello, Business Development Manager, Pratt &
Whitney Power Systems, confirmed

*12:15pm-1:00pm: Roundtable Discussion: Geothermal Project
Risk*

Moderated by Doug Glaspey, President and COO, U.S.

Geothermal

Louis Capuano Jr, Chairman of the Board, ThermaSource,
confirmed

Stephan Jacob, Entrepreneurial Risk Solutions, Munich RE,
confirmed

Subir Sanyal, President and Manager of Reservoir Engineering,
GeothermEx, a Schlumberger Company,

Confirmed

1:00pm-2:30pm: Luncheon/Luncheon Keynote Address

Anne Simpson, Senior Portfolio Manager for Corporate
Governance, California Public Employees'

Retirement System (Calpers), confirmed

Afternoon session: 2:30-5:15pm

*2:30-3:15pm: Presentations and Discussion: Investing in
Geothermal Projects*

Moderated by John Marciano, Chadbourne & Parke LLP

Dan Nastou, Power and Infrastructure, John Hancock Financial
Services, confirmed

Rick Rodgers, Managing Director, Montgomery Street Financial,
LLC, confirmed

Alan Davis, Principal, Starlight Investments, LLC, confirmed

Lachlan McLean, Principal, US Renewables Group, confirmed

3:15-4:00pm: Presentations and Discussion: Global Financial Markets

Moderated by Karl Gawell, Executive Director, GEA

Jen Derstine, Geothermal Sector Analyst, U.S. Department of Commerce, confirmed

Jeff Humber, Director, Africa Infrastructure Program, US AID, confirmed

Shinji Yamamoto, Chief Investment Officer, IFC, confirmed

Rob Guthrie, Senior Business Development Officer, Export-Import Bank of the United States, confirmed

4:00-4:15pm: Afternoon Break

4:15-5:15pm: Roundtable Discussion: Recognizing and Addressing the Realities Facing Geothermal Projects in 2012 and Beyond

Moderated by C.J. Arrigo, Advisor, Glacier Securities, LLC

Craig Mataczynski, CEO, Gradient Resources, confirmed

Doug Glaspey, President and COO, U.S. Geothermal, confirmed

Monte Morrison, Vice President of Operations, Magma Energy Corp., confirmed

John Marciano, Chadbourne & Parke LLP, confirmed

Dan Nastou, Power and Infrastructure, John Hancock Financial Services, confirmed

5:15-6:15pm Closing Reception

Event partners for the event are American Council on Renewable Energy as well as sponsors GeothermEx and Pratt & Whitney Power Systems.

If you are interested in being a participant in or sponsor of this event, please contact Kathy Kent at kathy@geo-energy.org. To register for the event, please visit: http://geo-energy.org/events/finance_forum_2012.aspx. Significant discounts for GEA Members and Students are available. For more information or to receive media credentials, please contact Shawna Seldon, 212 255 7541 or

Shawna@rosengrouppr.com.



Geothermal Track, Renewable Energy World North America Conference and Expo, Long Beach, CA (February 14–16)

The 2012 Renewable Energy World North America Conference and Expo event will take place February 14-16 in Long Beach, California — please save the date! GEA is on the planning committee and will be exhibiting on the Expo floor. Additional participation and sponsorship opportunities are available. Register for the conference: <http://www.renewableenergyworld-events.com/index/registration-information.html>.

The Geothermal Track sessions will highlight:

- Geothermal Policy and Economics
- Geothermal Plant Systems and Technology
- Geothermal Energy and Waste Heat Recovery
- a pre-conference introductory workshop on geothermal energy in California and beyond (must register in addition to conference registration)

Speakers from the geothermal community will include: Louis Capuano, Jr., ThermaSource; Halley Dickey, TAS Energy; Karl Gawell, Geothermal Energy Association; Joe Lillard, Atlas Copco Mafi-Trench; John McCaull, Geothermal Energy Association; John McIlveen, Jacob Securities Inc.; John McKinsey, Stoel Rives; Josh Nordquist, Ormat Technologies; Maria Richards, Southern Methodist University; Mike Ronzello, Pratt and Whitney Power Systems; Bruno Vanslambrouck, HOWEST, University College of West Flanders; Kelsey Walker, TAS Energy; A. Scott Weber, University of Buffalo; Harvey Wen, Bechtel Power Corp.; and Gary Zyhowski, Honeywell.

CPC Pre-conference Workshop on Geothermal Energy, Renewable Energy World Conference North America and Expo 2012 (February 14)

Date: February 14; Time: 8:00 AM – 12:00 PM; Room: 203C; Registration Fee: \$375.00, includes workshop materials, certificate of completion and coffee break. Register by adding this course when you register for the conference: COMPETITIVE POWER COLLEGE (CPC) PRE-CONFERENCE WORKSHOP 201 GEOTHERMAL ENERGY IN CALIFORNIA at <http://www.renewableenergyworld-events.com/index/registration-information.html>.



Geothermal Energy 101: California and Beyond, Course Overview: The basics of geothermal energy development will be described in the context of California's 50 years of experience with conventional hydrothermal energy production. This course discusses key aspects of geothermal energy development in California and the technologies used there and at other conventional geothermal development sites around the world. The course objective is to provide the necessary foundation for attendees interested in developing conventional geothermal energy projects, including geothermal reservoir basics, drilling and engineering technologies, economic business models, and industry specific issues.

Course Instructors: Louis Capuano, Jr., founder and Chairman of the Board of ThermaSource, Inc.; Karl Gawell, Executive Director of the Geothermal Energy Association; John McKinsey, who chairs the robust Geothermal Energy practice at Stoel Rives, LLP; and Maria Richards, who coordinates the Southern Methodist University's Geothermal Laboratory.

Sponsorship Opportunities for GEA Events

Your company has the opportunity for high visibility at GEA's events. In addition to providing the financial support needed for GEA to undertake successful events, GEA events feature media availabilities with sponsors which garner extensive coverage in mainstream press outlets. Events are updated at: <http://geo-energy.org/events.aspx>.

Events currently listed for 2012 are:

- January 18, 2012 GEA Geothermal Energy Finance Forum - San Francisco, CA
- February 14-16, 2012 Renewable Energy World Conference and Expo - Long Beach, CA (GEA is a supporting organization for this event)
- May 23, 2012 GEA International Geothermal Energy Showcase - Washington, DC
- August 7-8, 2012 GEA National Geothermal Summit 2012 - Sacramento, CA
- Sept. 30-Oct. 2, 2012 GEA Geothermal Energy Expo® and GRC Annual Meeting - Reno, NV



Other Events

Geothermal Lease Sale, BLM, Nevada (January 24)

The BLM is holding a competitive oral sale of Federal lands in the State of Nevada for geothermal leasing on January 24, 2012 at the Nevada State Office, 1340 Financial Boulevard, Reno, Nevada. There are 34 parcels totaling 99,469 acres, with two of the parcels are in the Elko area; two in the Battle Mountain area; nine in the Carson City region; and 21 in the Winnemucca area.

Leases issue for a primary term of 10 years. Annual rental is \$2 per acre for the first year (paid to BLM), \$3 per acre for the second through tenth year, and \$5 per acre per year thereafter. Once the site is producing for commercial generation, royalty rates are 1.75% for the first 10 years of production and 3.5% thereafter. Lands that do not receive a bid are available for a two-year period beginning the first business day after the sale.

To pre-register by mail or fax, mail the bidder registration form to the above address or fax to (775) 861-6710. On the day of the sale, bidders can register from 8:00 a.m. until 8:45 a.m., and the sale starts at 9. Bring a photo ID to the sale.

Contact: Justin Abernathy, (775) 861-6504. View the parcel list and other available documents, and check back for changes at:

http://www.blm.gov/nv/st/en/prog/minerals/leasable_minerals/geothermal0/ggeothermal_leasing.html. The bid form for successful bidders (Form 3000-2, dated August 2007) can be found at: <https://www.blm.gov/FormsCentral/show-home.do>

Two Geothermal Leases Up for Bid, BLM, Colorado (February 9)

At its quarterly oil and gas lease auction, the BLM in Colorado will offer two parcels allotted for geothermal energy development. The sale is on February 9 at the BLM State Office, 2850 Youngfield Street, Lakewood, Colorado 80215; Telephone 303-239-3600.

Leases issue for a primary term of 10 years. Annual rental is \$2 per acre for the first year (paid to BLM), \$3 per acre for the second through tenth year, and \$5 per acre per year thereafter. Once the site is producing for commercial generation, royalty rates are 1.75% for the first 10 years of production and 3.5% thereafter. Lands that do not receive a bid are available for a two-year period beginning the first business day after the sale.



The first geothermal parcel includes 4,587.77 acres of BLM land. The second geothermal parcel includes about 3,765.49 acres of U.S. Forest Service land. The BLM's resource management plan for Gunnison includes stipulations for geothermal leasing that protect geologic hazards, the Gunnison sage-grouse, and senior water rights.

Contacts: Ms. Sharon A. Sales, sharon_sales@co.blm.gov, (303) 239-3987; Mrs. Rebecca Skinner, rebecca_skinner@co.blm.gov, (303) 239-3780; or Mr. Kristian Lee, kristian_lee@co.blm.gov, (303) 239-3786. Additional lease sale information can be obtained online at: www.blm.gov/co/st/en/BLM_Programs/oilandgas/leasing.html, or by contacting the address above. The bid form for successful bidders (Form 3000-2, dated August 2007) can be found at: <https://www.blm.gov/FormsCentral/show-home.do>

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