

Geothermal Energy Weekly

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This Week

December 14, 2009

<i>National News</i>	3
Geothermal Energy on Launch Trajectory in 2009	3
GEA Salutes the World's Leading Geothermal Cities	10
Three Senators Release Framework for Climate Change and Energy Independence Legislation	11
Sens. Cantwell and Collins Introduce Alternative Climate Bill	11
New Report Examines R&D Needs in Geothermal Exploration and Drilling	12
<i>Company News</i>	13
Magma Energy: Purchase Completed of a Further 32% Interest in Icelandic Geothermal Energy Producer; Geothermal Reserves and Resources Total 815 MW at HS Orka's Properties	13
U.S. Geothermal: Deal Signed for Neal Hot Springs PPA with Idaho Power	13
U.S. Geothermal: PPA Pricing Improved; New Water Rights Acquired at San Emidio Project	14
<i>Renewable Energy and Climate Change</i>	14
EPA Finalizes Endangerment Finding for Greenhouse Gases	14
<i>State News</i>	15
Louisiana: Three LSU Projects Funded through DOE.....	15
<i>International News</i>	15
Australia: Greenearth Energy Provides Update on Geelong Geothermal Power Project	15
Indonesia: World Bank and JICA Grant Loans to Pertamina Geothermal	15
Indonesia: IFC to Fund \$100 million for Indonesian Efficient Energy Projects	16
Philippines: DOE Prequalifies 10 Companies for Geothermal Areas.....	16
<i>Notices</i>	17
Notices	17
DOE Issues Final Renewable Energy Loan Guarantee Rules	17

Public Selection for 7 Members of Technical Committee on Geothermal Energy in Amiata (December 16)..... 18
 Special Financing Programs Available for Mustang 4-F1 (December 31) 18
 GEA Supports Announcement from DOE on Awards for Geothermal Projects 18
 2009 Excellence in Renewable Energy Awards, Renewable Energy World 19
 SMU Geothermal Conference Presentations 19
 New Online Geothermal Discovery Guide Available 19
 New Article on Distributed Temperature Sensing in Geothermal Energy Applications..... 19

***Employment*..... 20**

Employment Opportunities 20
 Exploration Geologist, Western U.S..... 20
 Senior Director, Business Development, Major Geothermal Company 21
 Geothermal Project Supervisor, Central American Bank for Economic Integration, Costa Rica 21

***Requests for Proposals*..... 22**

Added This Week..... 22
 Environmental Management Fellowship Program, EPA (February 5, 2010)..... 22
 Power, Controls and Adaptive Networks, National Science Foundation (February 7, 2010)..... 22
 Thermal Transport, National Science Foundation (March 3, 2010)..... 22
 Energy for Sustainability, National Science Foundation (March 3, 2010) 23
 Environmental Engineering, National Science Foundation (March 3, 2010)..... 23
 Environmental Sustainability, National Science Foundation (March 3, 2010) 23
 Environmental Implications of Emerging Technologies, National Science Foundation (March 3, 2010) 23
 Technology Solutions, 2010 Tech Awards Nominations (March 31, 2010)..... 24
 RFP Announcements 24
 Geothermal Energy Development, Department of the Navy..... 24
 People, Prosperity and the Planet, EPA (January 5, 2010)..... 24
 Environmental Justice Small Grants Program, EPA (January 8)..... 25
 Energy Efficiency Block Grants – Recovery Act, CEC (January 12) 25
 Clean Energy Deployment, Recovery Act, New York (February 16, 2010) 25
 Emerging Frontiers in Research and Innovation (March 31, 2010) 25
 RFP for Smart Grid Investments, DOE, American Recovery and Reinvestment Act (March 31, 2010)..... 26

***Events*..... 26**

GEA Events 26
 GEA Geothermal Energy Finance Forum, January 14, 2010 (New York, NY) 26
 Renewable Energy World North America 2010, February 23–25, 2010 (Austin, TX)..... 27
 CGEC California Geothermal Energy Summit, May 12, 2010 (David, CA)..... 27
 GEA Geothermal Symposium, May 21, 2010 (Washington, DC) 27
 GEA Geothermal Energy Workshop, July 22, 2010 (Las Vegas, NV)..... 27
 GEA Geothermal Expo and Conference, TBA 27
 Why Should You Attend GEA Events? 27



www.geo-energy.org/publications/updates



National News

Geothermal Energy on Launch Trajectory in 2009

In 2009, geothermal energy appeared to be on a launch trajectory. Six new geothermal plants came on line in the United States and another 144 were under development, raising the prospects of 10 GW of geothermal power in coming years. Geothermal power projects were being developed at an accelerating rate, despite the economic recession.

Power technologies for both utility-scale electric generation and decentralized self-generation both moved forward, and new applications seeking to generate power from oil and gas fields saw multiple new projects. Also, with DOE support, the U.S. took major steps to launch a research effort to develop enhanced geothermal systems technology.

Federal and state policies for renewable energy production, tax incentives, leasing and permitting and research have all been fundamental to geothermal development; and in 2009 there were major, positive new developments in all of these areas. So, it was not a surprise that GEA's 2009 Geothermal Energy Expo set record attendance and exhibitor participation figures, or that the GEA workshops and events had standing-room-only crowds.

The outlook for 2010 is for even stronger growth in the industry, continued progress with new technology, and even greater priority from federal and state policymakers as they tackle the challenge of the 21st century -- global warming. As 2009 comes to a close, these new projects, new policies and new technologies all point to dynamic growth for geothermal energy in the U.S. in coming years.

Total On-line Geothermal Power Grows 6% Despite Recession

Six new geothermal projects came on line in 2009, representing growth of U.S. geothermal power capacity of about 6%. Together, these projects mean 176.68 MW placed in service in 2009. They represent an investment of roughly \$800 million, 750 full time jobs, and 2,827 jobs related to project construction, drilling and manufacturing, according to GEA research data.

GEA invited the DC energy policy and technology community to see geothermal energy projects under development in the West at the Newseum in Washington DC. Leading geothermal companies in the U.S. shared

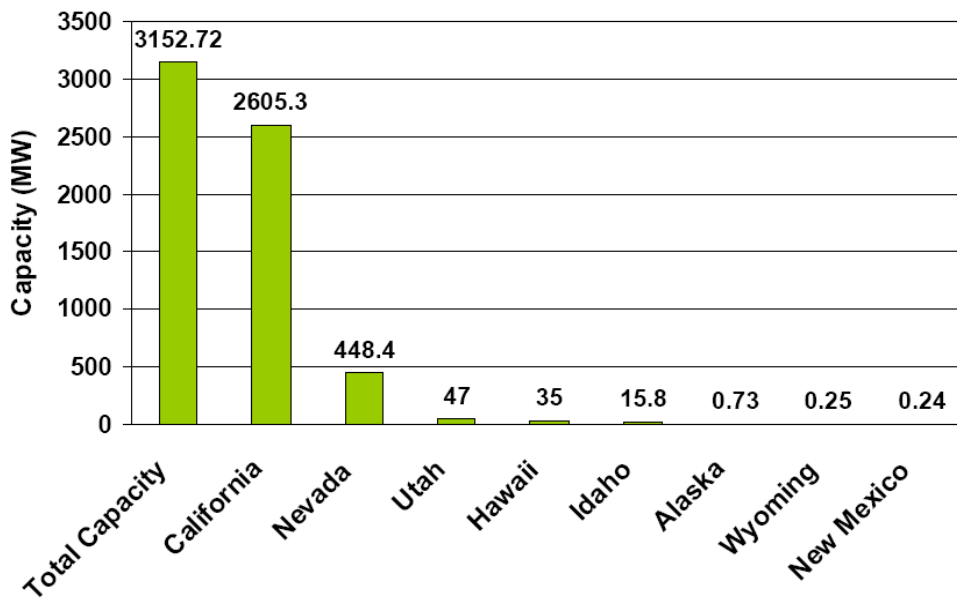
their new geothermal projects via video footage, both those near completion and those just coming on line. The videos are available at <http://www.youtube.com/geoenergyishot#p/u>.

New projects in 2009:

Company/Project	State	Power Capacity
Ormat North Brawley	California	50 MW
Oregon Institute of Technology	Oregon	280 kw
Nevada Geothermal Blue Mtn I	Nevada	49.5 MW
Enel NA Still Water	Nevada	47.3 MW
Enel NA Salt Wells	Nevada	18.6 MW
Raser Technologies Orrin Hatch	Utah	11 MW

The total on-line capacity of geothermal power in the U.S. was 3,152.72 as of August 2009 (see graph, taken from GEA’s September 2009 Industry Update. <http://www.geo-energy.org/content/reports.aspx>).

Figure 1: August 2009 Geothermal Power Capacity On-Line (MW)



Source: GEA

New Geothermal Projects Accelerate

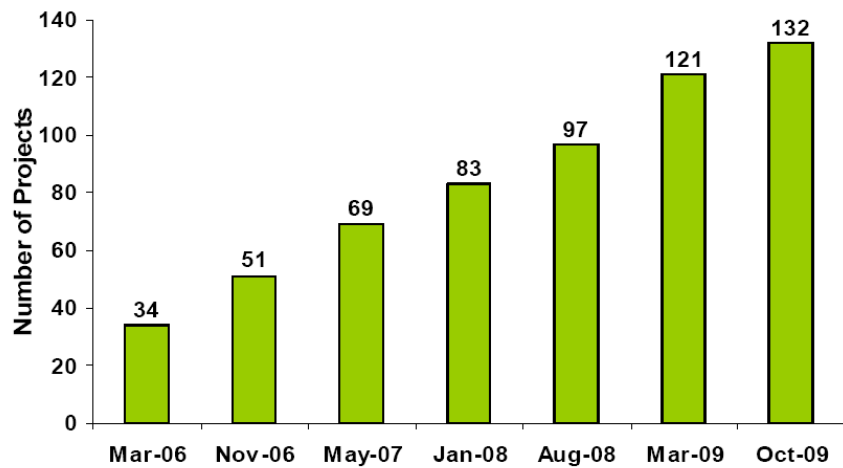
The on-line geothermal power added in 2009 marks the beginning of an accelerating growth in new projects, making it a take-off year for a new era of geothermal growth. The projects underway in 2009 will make up to 140 MW of new geothermal power in fourteen states.

With geothermal projects taking 3–5 years to develop, the continued growth in new projects under development portended accelerating power production in years ahead. New projects could collectively surpass 7,000 MW of baseload geothermal power, bringing U.S. total geothermal power capacity to 10 GW. That would be enough geothermal capacity to supply about 25% of California’s total electric power needs in 2008 — enough generating capacity to supply the power needs of about 10 million people!

GEA’s market reports identified new projects in:

State	Number of Projects	Potential MW
Alaska,	6	70–115
Arizona	1	2–20
California,	37	1841.8–2435.8
Colorado,	1	10
Florida	1	0.2–1
Hawaii,	2	8
Idaho	5	238–326
Louisiana	1	.05
Mississippi	1	.05
Nevada,	64	1876.4–3473.4
New Mexico,	1	20
Oregon,	13	317.2–368.2
Utah,	10	272.4–332.4
Washington	1	Unspecified

There were 132 new geothermal projects under development at the end of 2009, twice as many as GEA identified two years before (see graph).



Geothermal Energy's Range of Technology Options Grows

Geothermal energy has historically been used for electricity production and commercial, industrial, and residential direct heating purposes. Recent years have seen growth in efficient home heating and cooling through geothermal heat pumps. In 2009, the U.S. also took major steps towards the lead in advanced geothermal technology through investment in Enhanced Geothermal Systems (EGS). Additionally, inaugurated this year were two projects that would utilize hot water produced by oil and gas wells to produce geothermal power — located in Louisiana and Mississippi, these are the first geothermal power production projects for these states.

These oil field co-production projects are two of the five projects now underway in the U.S. utilizing geothermal hydrocarbon co-production. Jay Oil Field in Florida, expected to generate between 200 kW and 1 MW; Rocky Mountain Oil Test Center in Wyoming; GCGE Oil Co-production in Mississippi, expected to generate 50 kWh; GCGE Natural Gas Co-production in Louisiana, 50 kWh; and Florida Canyon Mine in Nevada. Researchers at Southern Methodist University believe that oil field co-production can become an important source of power. They have identified potential areas for similar development that could bring thousands of megawatts of new power on line.

The U.S. Department of Energy (DOE) has invested more than \$5 million in a demonstration project for EGS at Desert Peak, Nevada. This first commercial EGS operation will increase the plant's capacity by 5 MW. Other EGS projects have now been selected by DOE for federal funding as well (see section on DOE initiatives below).

A 2006 report by the Massachusetts Institute of Technology, *The Future of Geothermal Energy*, was enthusiastic about the potential of EGS technology. According to MIT, "A comprehensive new MIT-led study of the potential for geothermal energy within the United States has found that mining the huge amounts of heat that reside as stored thermal energy in the Earth's hard rock crust could supply a substantial portion of the electricity the United States will need in the future, probably at competitive prices and with minimal environmental impact."

For information about oil and gas co-production, visit the SMU Geothermal Program web site at: <http://smu.edu/geothermal/>

To download a copy of the MIT Report on Enhanced Geothermal Systems, go to: <http://www.geothermal-energy.org/content/reports.aspx>

Expanded Federal and State Policies Fuel Geothermal Growth

The stunning progress of the geothermal industry this year has been propelled by state and federal policies. The keys to geothermal development established over past years have been (1) state renewable energy standards which provide growing markets for renewable power, (2) federal tax credits and incentives which attract investors and bring down the upfront costs of projects, (3) federal and state land availability, which means

active and timely leasing and permitting programs, and (4) research, development, and deployment support from the DOE. Key policy developments in 2009 that underpin geothermal progress addressed all four of these areas.

On the state level, the two largest markets for geothermal energy are California and Nevada. In 2009, California increased its renewable standard to 33% by 2020. Nevada has extended its renewable energy standard to 25% by 2025. Utilities are looking to geothermal energy to fill these needs. In California, one new project came on line in 2009 with a 50 MW capacity, and 37 geothermal projects are underway with a combined capacity of 1841.8–2435.8 MW. In Nevada, three new power plants with a total on-line capacity of 115.4 MW were added; 64 projects are underway for another 1876.4–3473.4 MW. Developments in these states are an example that others are following.

Early 2009 saw a move by Congress to extend the Production Tax Credit for new geothermal plants until 2013, extended to certain geothermal projects a 30% Investment Tax Credit, and made available to certain geothermal projects a cash grant in lieu of the 30% ITC. Together these are powerful financial incentives whose impact will be felt over the next few years, reminiscent of trends after a 2005 decision to extend the production tax credit to geothermal energy (it was previously only available to wind projects).

In addition, the DOE this year opened its loan program for innovative technologies to geothermal technology and Congress created a new DOE loan guarantee program for renewable projects using commercial technology. These loan guarantee programs are particularly valuable and needed given the tight financial markets in the U.S. and around the world.

In July of this year, the BLM held a sale involving lands in Nevada, California and Utah which resulted in the sale of 255,355 acres of land and total revenue of approximately \$9 million. The geothermal lease sales held by the BLM over the past year were made possible by a major Programmatic EIS for Geothermal Leasing in the Western United States completed in October 2008 by the Department of the Interior and the U.S. Forest Service. Prior to that EIS, 190 million acres of potential lands had been unavailable simply because BLM had not conducted the necessary reviews; by the end of 2009, BLM had over 1.2 million acres under lease for geothermal power development!

Research, development, and deployment support at DOE is managed through their Geothermal Technologies Program, a program crucial to the industry that had been a matter of concern since the Bush Administration proposed to terminate the program in 2006. Congress kept the program alive and authorized a new program in the 2007 Energy Bill, but funding and direction were still limited. In 2009, as part of the stimulus legislation (The American Recovery and Reinvestment Act of 2009), Congress appropriated \$400 million for the DOE Geothermal Technologies Program. Just last month, the DOE announced pending awards of \$338 million to

over 123 geothermal projects in 39 states, including the first demonstration projects in the U.S. for EGS technology.

In an Historic Shift, DOE Ramps Up Geothermal Efforts

While all of the federal and state policy developments in 2009 were important to the industry, the changes at the DOE marked an historic shift. One of the uniquely geothermal initiatives in 2009 was the DOE's initiative which infused major new resources to spur geothermal technology across the board. For the first time in over 25 years, the DOE was putting significant resources behind its geothermal efforts.

In October, DOE Secretary Steven Chu announced up to \$338 million in Recovery Act funding for the exploration and development of new geothermal fields and research into advanced geothermal technologies. These grants will support 123 projects in 39 states, with recipients including private industry, academic institutions, tribal entities, local governments, and DOE's National Laboratories.

As the DOE explained, "the projects selected for negotiation of awards fall in six categories":

--24 Innovative Exploration and Drilling Projects to be awarded up to \$98.1 million. "focusing on the development of new geothermal fields using innovative sensing, exploration, and well-drilling technologies."

--11 Coproduced, Geopressured, and Low Temperature Projects to be awarded up to \$20.7 million. "for the development of new low-temperature geothermal fields, a vast but currently untapped set of geothermal resources. This includes geothermal heat found in the hundreds of thousands of oil and gas wells around the U.S., where up to ten barrels of hot water are produced for every barrel of oil."

--3 Enhanced Geothermal Systems Demonstration Projects to be awarded up to \$51.4 million. "to validate power production from deep hot rock resources using innovative technologies and approaches."

--45 Enhanced Geothermal Systems Components Research and Development Projects to be awarded up to \$81.5 million. "to focus on research and development of new technologies to find and drill into deep hot rock formations, stimulate enhanced geothermal reservoirs, and convert the heat to power."

--3 Geothermal Data Development, Collection and Maintenance Projects to be awarded up to \$24.6 million. "for the population of a comprehensive nationwide geothermal resource database to help identify and assess new fields."

--37 Ground Source Heat Pump Demonstration Projects to be awarded up to \$61.9 million. "to demonstrate the deployment of ground source heat pumps for heating and cooling of a variety of buildings for a variety of customer types, including academic institutions, local governments and commercial buildings."



"The United States is blessed with vast geothermal energy resources, which hold enormous potential to heat our homes and power our economy," said DOE Secretary Chu.

When completed, these projects will represent a federal-private total of \$691 million invested in new geothermal technology and applications.

For more information on DOE's Geothermal Technology Program, go to:
<http://www1.eere.energy.gov/geothermal>

GEA Holds Record Trade Show, Successful Workshops

The 2009 Geothermal Energy Expo, held in Reno, Nevada in October, saw 120 exhibitors, 40 more than in 2008. Individuals, new start-ups, and well-established companies are learning about geothermal energy and are willing to develop it in record numbers. GEA estimates show roughly 2,300 walked the 2009 Expo floor, up from 1,700 in 2008. Visitors came from across the U.S., Iceland, France, Germany, Italy, Turkey, Indonesia, Canada, Australia, New Zealand, the Philippines, and Chile.

As the national trade association for the geothermal industry, GEA provides events to educate participants and to provide a setting for networking. Beyond the annual expo, three GEA workshops in 2009 catered to sold-out audiences. A multimedia showcase of geothermal projects brought field developments to the energy community in Washington, DC in May. Developers and financiers converged for a finance workshop in Seattle in June, and a third workshop in Klamath Falls, Oregon in August explored small power and direct use capacities of geothermal development.

For information about GEA activities and events, go to: <http://www.geo-energy.org/content/events.aspx>

Outlook for 2010 and Beyond

GEA's staff consulted its crystal ball which said that in 2010:

The number of states with geothermal power will reach double digits, with new power projects coming on line in four to eight states.

Climate change will increase the pressure for policy support by federal and state governments; geothermal power will become more widely viewed as one of the key energy sources to provide baseload power, now largely supplied by coal.

New technology advances will continue to expand the recognized power potential of geothermal resources; DOE will officially recognize a near-term potential of at least 20 GW, or 5% of U.S. power needs, with longer-term possibilities well over 100 GW.

The GEA Expo in 2010 will set new attendance records and attract exhibitors and visitors from around the world.

Stay Tuned

Stay tuned to all of the developments in the geothermal field by reading GEA's newsletter, the Geothermal Energy Weekly. To sign up for the geothermal community's leading news source, email research@geo-energy.org. Visit GEA's web site for new reports, news about events, and more information at <http://www.geo-energy.org/content/default.aspx>.

GEA Salutes the World's Leading Geothermal Cities

Washington, D.C. (December 9) – This week world leaders gathering in Copenhagen for the United Nations Climate Change Conference have a winning view of Denmark's famous wind turbines and recognize them as a light of hope in this time of crisis. But they should also feel the geothermal heat that is part of the solution for Copenhagen and for cities and countries around the world. In fact, Copenhagen could meet 50% of its district heating needs by using its geothermal resources. With Copenhagen in the spotlight as a shining example of geothermal's potential, GEA has identified a list of leading geothermal cities around the globe.

"Despite its huge renewable energy potential, geothermal energy is often misunderstood or overlooked," said Karl Gawell, Executive Director of the Geothermal Energy Association. "It is an important and well-established source for electricity production and has an enormous variety of other uses, including school heating, district heating, fish farming, greenhouses, resorts, and small power production. These applications all make geothermal energy an important, adaptable and growing energy resource for modern cities."

GEA recognizes the following cities as examples of world leaders in geothermal municipal development.

1. Copenhagen, Denmark: Having set a target of zero carbon emissions by 2025, Copenhagen is a leader in clean energy alternatives and could meet 50% of its district heating needs by using its geothermal resources.
2. Larderello, Italy: Boasting the very first geothermal power plant which opened at the turn of the century, the "Grandfather" of geothermal energy is still a leader in its generation today.
3. Reykjavik, Iceland: With a high level of geothermal activity and insightful developments by the Icelanders over the years, 87% of Iceland's buildings are heated geothermally.
4. Reno, Nevada: City and business leaders have been encouraged by the success and remarkable potential of the energy source and are marketing Reno as a geothermal center for industry activities, corporate offices and research facilities.
5. Perth, Australia: Perth has declared its intention to enter the geothermal community with a new twist – as the very first geothermally cooled city with commercial geothermal-powered heating and air-conditioning units.
6. Xianyang, China: Recently deemed "China's Official Geothermal City," in the largest emissions-producing nation in the world, Xianyang is helping China achieve the goal they set of 16% renewables by 2020 – up from 7% in 2005. Also of note, Beijing famously used geothermal pumps to power the 2008 Olympics.

7. Madrid, Spain: Madrid's regional government is on board with six renewable energy projects, one of which is a 8-MW geothermal district heating project.
8. Masdar City, Abu Dhabi: The city's goal is to function 100% on renewable energy; a shining example to the rest of the world. The city plans to obtain half of its power from geothermal resources.
9. Klamath Falls, Oregon: Geothermal has been used for space heating since the turn of the century and for a variety of uses including heating homes, schools, businesses, swimming pools, and for snow melt systems for sidewalks and highway. In addition, geothermal provides Oregon Institute of Technology's 11-building campus all of its heating needs.
10. Boise, Idaho: The Boise Public Works Department has the largest direct use geothermal system in the U.S. The city's geothermal system injects 100% of the water back into the aquifer. The Idaho State Capitol is among several buildings in the Capitol Mall area that are heated by the system. Boise built its first geothermal heating system in 1892!

Submit your favorite geothermal city to research@geo-energy.org. For the full story, visit www.geo-energy.org.

Three Senators Release Framework for Climate Change and Energy Independence Legislation

From EESI Climate Change News, On December 10, Sens. John Kerry (D-MA), Joseph Lieberman (I-CT), and Lindsay Graham (R-SC) outlined the comprehensive energy and climate change legislation that they intend to introduce in the Senate next year. The Senators said that their bill could reduce greenhouse gas emissions in the United States 17 percent below the 2005 level by 2020, in line with President Obama's commitment to the world at the United Nations Framework Convention on Climate Change currently taking place in Copenhagen. Their bill would also provide federal support for renewable energy, carbon capture and storage, additional offshore oil and natural gas drilling, and nuclear power. The Senators said they are confident that this compromise will secure the 60 votes necessary to overcome an opposition filibuster in the Senate. "We would like to underscore the fact that the framework we are releasing today is a starting point for our negotiations going forward," Kerry said. The White House welcomed the compromise, saying in a statement, "The president believes this is a positive development towards reaching a strong, unified and bipartisan agreement in the U.S. Senate."

Sens. Cantwell and Collins Introduce Alternative Climate Bill

From EESI Climate Change News, On December 11, Sens. Maria Cantwell (D-WA) and Susan Collins (R-ME) introduced the Carbon Limits and Energy for America's Renewal (CLEAR) Act with the goal of achieving a reduction in greenhouse gas (GHG) emissions of 20 percent by 2020 and 83 percent by 2050. The legislation would set up a mechanism for selling "carbon shares" to fuel producers, with 75 percent of the revenue divided among taxpayers and 25 percent going to fund clean-energy research and development, worker transition and energy efficiency. "Energy is a six-trillion dollar market opportunity, and green jobs can transform the U.S. economy," Cantwell said. "But we need a signal on carbon so that this can happen. This bill provides a simple approach to getting off of carbon and on to clean energy alternatives." The bill would also limit trading of

carbon shares to companies required to hold them, preventing securities firms or hedge funds from participating, as they could in other proposed carbon legislation. A price floor of \$7 per share is set for 2012 with a ceiling price of \$21 per share. "Climate change legislation must protect consumers and industries that could be hit with higher energy prices," Collins said. "Such legislation also must provide predictability so that businesses can plan, invest, and create jobs."

New Report Examines R&D Needs in Geothermal Exploration and Drilling

A significant amount of the risk associated with geothermal energy lies in uncertainties encountered in exploration and drilling, and a new report outlines the needs and opportunities for research to help address those problems and propel more geothermal energy production. The report, *R&D Needs in Geothermal Exploration and Development*, was prepared by Dan Jennejohn of the Geothermal Energy Association (GEA), the leading US geothermal organization.

"While current technologies can be effective, opportunities to significantly improve upon them and advanced "revolutionary" techniques are possible," noted Jennejohn. "Additionally, in 2008 the USGS estimated domestic un-identified conventional hydrothermal geothermal resource potential to range from 7,197 MWe to 73,286 MWe. Such numbers emphasize the importance of exploration and drilling technologies in discovering and developing new geothermal resources." At the invitation of the Electric Power Research Institute (EPRI), the GEA prepared this report for their Geothermal Summit Meeting at Colorado's Tri-State Generation headquarters in Westminster, Colorado.

The GEA report used a broad approach to the issue and is based upon interviews with many experts in the industry and at universities and national laboratories regarding geothermal exploration and drilling. The paper gives an overview of the various stages of exploration and drilling and addresses areas where significant geothermal R&D needs and opportunities exist. The paper recognizes the potential of breakthrough technologies and EGS as being important areas for R&D. At the same time, the paper also emphasizes focusing R&D on developing conventional technologies that could positively impact the industry in the near term.

"We hope this report helps people understand opportunities for research and technology development in this area," noted Karl Gawell, GEA's Executive Director. "Advances in exploration and drilling technologies are key to expanded geothermal production in the US and around the world."

Current R&D efforts in the geothermal industry have recently received increasing amounts of attention. This last November the Department of Energy announced approximately \$338 million for geothermal research projects, including 24 "Innovative Exploration and Drilling Projects" which will be awarded up to \$98.1 million. The paper identifies those recipients of ARRA funding and their relation to the different exploration and drilling R&D needs being presented.

Copies of the report are available to download free of charge from the GEA Web site at: <http://www.geo-energy.org>.



Company News

Magma Energy: Purchase Completed of a Further 32% Interest in Icelandic Geothermal Energy Producer; Geothermal Reserves and Resources Total 815 MW at HS Orka's Properties

Vancouver, B.C., Canada, December 14, 2009 -- Magma Energy Corp. (TSX:MXV) Magma Energy Corp. announces that it has closed a previously announced agreement to acquire 32.32% of Iceland geothermal company HS Orka for 3.7 billion ISK (approximately \$29.5 million) and three bonds totaling approximately \$70 million repayable in a single installment in 7 years with interest at 1.52% per annum. Magma now holds a 40.94% direct interest in HS Orka and an option to acquire an additional stake in HS Orka by making a capital infusion of \$15 million into HS Orka prior to November, 2011. A further agreement to purchase a 2.16% stake in HS Orka is expected to close in March, 2010.

Magma has received an independent report on HS Orka's properties by Mannvit Engineering, a large Icelandic engineering firm specializing in geothermal energy engineering. The report estimates the following reserves and resources on HS Orka's properties (100% basis): a Proven Reserve of 175 MW, an Indicated Resource of 140 MW and an Inferred Resource of 500 MW. The reserve and resource estimates have been prepared in accordance with the Code for Geothermal Resources and Reserves Reporting (the "Code") 1st Edition, 2008, published by the Australian Geothermal Energy Association. The report was prepared by Mannvit Engineering's Arnar Hjartarson and Dr. Johann Gardar Einarsson, who are responsible for its content and are "Competent Persons" under the Code.

For more, see <http://www.magmaenergycorp.com/s/NewsReleases.asp>.

U.S. Geothermal: Deal Signed for Neal Hot Springs PPA with Idaho Power

BOISE, Idaho - December 14, 2009 (NYSE Amex: HTM, TSX: GTH) U.S. Geothermal Inc. ("U.S. Geothermal"), a renewable energy company focused on the development, production and sale of electricity from geothermal energy, is pleased to announce that its wholly owned subsidiary USG Oregon LLC has signed a power purchase agreement ("PPA") with Idaho Power Company ("Idaho Power"), a subsidiary of Idacorp, Inc (NYSE: IDA). The 25-year PPA provides for the sale of up to 25 megawatts ("MW") from the Neal Hot Springs project in eastern Oregon.

Idaho Power will submit the PPA to the Idaho Public Utilities Commission for their approval, which is expected within the next 60 to 90 days. This PPA is the second geothermal energy supply agreement U.S. Geothermal has signed with Idaho Power.

For more, see <http://usgeothermal.com/Index.aspx>.

U.S. Geothermal. PPA Pricing Improved; New Water Rights Acquired at San Emidio Project

Dec 08 – U.S. Geothermal Inc. (TSX: GTH)(NYSE Amex: HTM) ("U.S. Geothermal"), a renewable energy company focused on the development, production and sale of electricity from geothermal energy, announced today that a 26.5% increase in the average power price is now in effect at its operating San Emidio power plant located northeast of Reno, Nevada. The current 3.6 megawatt ("MW") capacity power plant is selling approximately 2.5 MWs of electricity to NV Energy's subsidiary Sierra Pacific Power Company ("SPP") under an existing contract that expires after 2017. SPP adjusts the rate paid to the project for energy and capacity on an annual basis and the most recent adjustment for the period September 1, 2009 through September 1, 2010 resulted in a favorable increase in the power price.

U.S. Geothermal also recently acquired 724 acre-feet of additional groundwater rights and a mothballed dehydration facility located adjacent to the site. U.S. Geothermal now owns 1,488 acre-feet of water rights that allow the use of high efficiency water cooling for the planned power plant expansion. The 40 acre dehydration site includes 91,184 square feet of office, shop, and operation and storage buildings.

For more, see <http://usgeothermal.com/Index.aspx>.



Renewable Energy and Climate Change

EPA Finalizes Endangerment Finding for Greenhouse Gases

December 9, VanNess Feldman News Alert -- On December 7, 2009, girded by Supreme Court-verified authority under section 202(a) of the Clean Air Act, Environmental Protection Agency (EPA) Administrator Lisa Jackson signed two key findings that move EPA one step closer to regulating emissions of greenhouse gases (GHGs) from mobile and stationary sources as early as 2010. These two findings are:

1. The current and projected atmospheric concentrations of six GHGs—carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆)—endanger the public health and welfare of current and future generations; and
2. The combined emissions of these GHGs from new motor vehicles in the United States contribute to global climate change.

For more, see <http://www.vnf.com/news-alerts-418.html>.



State News

Louisiana: Three LSU Projects Funded through DOE

About \$670,000 awarded by DOE to LSU will fund three different geothermal energy projects run by the Louisiana Geological Survey, located on campus. The first project, run by Shell, transports CO₂ from petrochemical facilities for geologic storage will be used for enhanced oil recovery operations. The second project, run by Louisiana Geothermal, demonstrates the feasibility” of a geopressured-geothermal power plant in Cameron Parish. The third project is for a Natural Geothermal Data System.

See <http://www.theind.com/content/view/5311/97/>.



International News

Australia: Greenerth Energy Provides Update on Geelong Geothermal Power Project

December 07 -- Greenerth Energy (ASX:GER) has updated the market as to the advantages and benefits of the company's flagship Victorian geothermal energy project - the Geelong Geothermal Power Project (GGPP). The key objective is for Greenerth to provide Geelong, Victoria and Australia with a substantial base load renewable energy development opportunity. Greenerth's Geelong Geothermal Power Project is planning to deploy proven Organic Rankine Cycle (ORC) plant technology.

The characteristics of the eleven operational plants (including Australia's only operating geothermal plant situated in Birdsville, Queensland) are shown to be very similar to that proposed by Greenerth Energy and lead technical consultants Sinclair Knight Merz (SKM) for the Geelong Geothermal Power Project.

For more, see <http://www.proactiveinvestors.com.au/companies/news/3662/greenerth-energy-geelong-geothermal-power-project-ticking-all-the-boxes-3662.html>.

Indonesia: World Bank and JICA Grant Loans to Pertamina Geothermal

The World Bank and the Japan International Cooperation Agency (JICA) will grant loans to Pertamina Geothermal Energy to develop Lumut Balai geothermal power plant in South Sumatra. The funds received were worth US\$500 million each, with the JICA fund having a tenure of 40 years. The company is also awaiting credit from German state-owned development bank KfW. Development is expected to begin next year on the Lumut Balai power plant, with an estimated resource of up to 300 MW.

See http://en.vivanews.com/news/read/113678-world_bank_grants_pertamina_geothermal_loan.

Indonesia. IFC to Fund \$100 million for Indonesian Efficient Energy Projects

The International Finance Corporation (IFC), a unit of World Bank (WB), could fund up to US\$100 million for efficiency energy projects across Indonesia, a senior official told press. "We see that Indonesian firms have a big chance now to convert their non-renewable energy sources into more efficient and renewable ones. The market for financing such energy-efficient projects is huge in the country," IFC Efficient Energy Program Manager Tom Moyes told press. "They can use geothermal or use agricultural waste, such as palm oil and rice husks to generate electricity."

See http://news.xinhuanet.com/english/2009-12/14/content_12644532.htm.

Philippines. DOE Prequalifies 10 Companies for Geothermal Areas

The Philippines DOE has prequalified 10 companies for developing nine geothermal areas up for auction. The geothermal contract will go to the winner who earns the highest point based on criteria of the application. The winning bidder will be required to drill one to two exploratory wells and conduct feasibility and appraisal studies.

Pre-qualified for Daklan, Benguet covering 23,639 hectares: Clean Rock Renewable Energy Resources Corp., Pan Pacific Power Corp., Energy Development Corp. and Envent Holding Philippines Inc.

Pre-qualified for Natib, Bataan 1 for 11,928.72 hectares: Clean Rock Renewable Energy Resources Corp., Magma Energy Corp., Pan Pacific Power Corp. and Energy Development Corp.

Pre-qualified for Labo, Camarines Norte for 9,324.30 hectares. The department will evaluate the proposals of PNOC Renewables Corp., Energy Development, Aragorn Power and Energy Corp. and Envent Holding Philippines Inc.

Lone companies that pre-qualified: Primary Energy Corp. for Acupan, Benguet; Constellation Energy Corp. for Montelago, Oriental Mindoro; PNOC Renewables for Isarog, Camarines Sur; Primary Energy Corp. for Sta. Lourdes Tagbueros, Puerto Princesa City, Palawan; Energy Development for Mainit, Surigao del Norte; and Petro Energy Resources Corp. for Maibarara in Laguna and Batangas.

See <http://www.manilatimes.net/index.php/business-columns/7640-doe-shortlists-qualified-geothermal-bidders> and <http://business.inquirer.net/money/topstories/view/20091214-241878/6275M-in-investments-to-generate-251-MW>.





Notices

Notices

DOE Issues Final Renewable Energy Loan Guarantee Rules

Federal Register — Office of the Chief Financial Officer, Department of Energy

On August 7, 2009, the Department of Energy (DOE or the Department) published a Notice of Proposed Rulemaking and Opportunity for Comment (NOPR) to make certain changes to the existing regulations for the loan guarantee program authorized by Section 1703 of Title XVII of the Energy Policy Act of 2005 (Title XVII or the Act). Section 1703 of Title XVII authorizes the Secretary of Energy (Secretary) to make loan guarantees for projects that “avoid, reduce, or sequester air pollutants or anthropogenic emissions of greenhouse gases; and employ new or significantly improved technologies as compared to commercial technologies in service in the United States at the time the guarantee is issued.” Section 1703 of Title XVII also identifies ten categories of technologies and projects that are potentially eligible for loan guarantees. The two principal goals of section 1703 of Title XVII are to encourage commercial use in the United States of new or significantly improved energy-related technologies and to achieve substantial environmental benefits. DOE believes that commercial use of these technologies will help sustain and promote economic growth, produce a more stable and secure energy supply and economy for the United States, and improve the environment.

Through experience gained implementing the loan guarantee program authorized by section 1703 of Title XVII, and information received from industry indicating the wide variety of ownership and financing structures which participants would like to employ in implementing projects seeking loan guarantees, DOE believes it is appropriate to make certain changes to the existing regulations to provide flexibility in the determination of an appropriate collateral package to secure guaranteed loan obligations, facilitate collateral sharing and related intercreditor arrangements with other project lenders, and to provide a moreworkable interpretation of certain statutory provisions regarding DOE’s treatment of collateral, consistent with the intent and purposes of Title XVII. Having considered all of the comments submitted to DOE in response to the NOPR, the Department today is issuing this final rule.

DATES: This rule is effective December 4, 2009.

FOR FURTHER INFORMATION CONTACT:

David G. Frantz, Director, Loan Guarantee Program Office, 1000 Independence Avenue, SW., Washington, DC 20585–0121, e-mail: lgprogram@hq.doe.gov; or Susan S. Richardson, Chief Counsel for the Loan Guarantee Program, Office of the General Counsel, 1000 Independence Avenue, SW., Washington, DC 20585–0121, e-mail: lgprogram@hq.doe.gov.

Public Selection for 7 Members of Technical Committee on Geothermal Energy in Amiata (December 16)

The Tuscany Regional Council – through Scuola Superiore Sant'Anna – has opened a public selection for international scientists, with outstanding expertise in earth sciences and engineering, whom wish to be considered for the appointment as members of the Technical Committee for Geothermal Energy in Amiata. The committee which is funded by the Tuscany Regional Council will cover a prestigious advisory role for the Council itself and for the local Municipality authorities of Amiata in technical and scientific matters concerning the management and sustainability of geothermal resources in the Monte Amiata area.

The Committee consisting of seven members, will be chaired by one member elected by the afore mentioned Tuscany Regional Council and will be aided by the staff of the Center of Excellence for Geothermal Energy of Larderello which will provide technical and logistic support. It is requested that the members of the Technical Committee for Geothermal Energy be present in Larderello for periodical meetings.

Release date : 17-11-2009, Deadline for admission :16-12-2009. See

http://www.sssup.it/news.jsp?ID_NEWS=2830>emplate=default.jsp.

Special Financing Programs Available for Mustang 4-F1 (December 31)

Atlas Copco Customer Finance North America has partnered with Wells Fargo Equipment Finance – Construction Group to offer beneficial financing and leasing programs for new Mustang customers. Atlas Copco's Mustang Geothermal Drill Finance Special offers 36-, 48- and 60-month options. There is no advance payment on a standard loan and only one advance payment on the lease special.

These special financing programs are available until December 31, 2009, and local Atlas Copco representatives will have the most current rates and terms available. All transactions are subject to credit approval.

For further information please contact

Shawn McGill, Business Development Manager, Atlas Copco Customer Finance North America, Telephone: 803-817-7435; Fax: 803-817-7467, E-mail: shawn.mcgill@us.atlascopco.com

Joanna Canton, Marketing Communications Director, Atlas Copco Construction Mining Technique USA Telephone: 303-253-6922; Fax: 303-217-2840, E-mail: joanna.canton@us.atlascopco.com

Christina Fisher, Public Relations Manager, Ellenbecker Communications, Inc., Telephone: 507-945-0100; Fax: 877-572-9860, E-mail: chris@ellcom.us

GEA Supports Announcement from DOE on Awards for Geothermal Projects

Access this weeks' article from GEA on "A Turning Point for Geothermal: DOE Funding Wins Industry Approval" at <http://www.renewableenergyworld.com/rea/news/article/2009/11/a-turning-point-for-geothermal-doe-funding-wins-industry-approval>.

2009 Excellence in Renewable Energy Awards, Renewable Energy World

Presented by the editors of RenewableEnergyWorld.com and Renewable Energy World North America magazine, these awards recognize the most outstanding projects, programs and technologies in the wind, solar, biomass, geothermal and hydroelectric energy sectors. Awards will be presented during Renewable Energy World North America Conference & Expo in Austin, Texas, February 23-25, 2010. Submit your nominations today! See <http://www.renewableenergyworld.com/partner/rew/online/2009-11-17/>.

SMU Geothermal Conference Presentations

The presentations from the SMU conference on Geothermal Energy Utilization Associated with Oil and Gas Development are ready for you to download. You can access them through the [website \(http://smu.edu/geothermal/Oil%26Gas/Oil&GasPresentations.htm\)](http://smu.edu/geothermal/Oil%26Gas/Oil&GasPresentations.htm). 2009 presentations are mixed with the other years and put in alphabetical order by author's last name. Attached is the agenda for both days listing the presenters and their topics.

Three cheers to each of the presenters for taking the time to learn the information, put together the presentation, and give interesting talks that continue to stimulate much discussion. Not only did they too pay to attend, but they are paving the way for geothermal development in oil and gas settings.

Thank you to the many Sponsors of the conference. Your contribution makes a difference in the life of those attending the conference, the SMU Geothermal Lab, and the thousands of people reached because of the outreach done with the funds.

New Online Geothermal Discovery Guide Available

The Geothermal Discovery Guide, part of a series on alternative energy, is posted at <http://www.csa.com/discoveryguides/geothermal/review.php>. GEA is cited extensively in this guide.

New Article on Distributed Temperature Sensing in Geothermal Energy Applications

Mikko Jaaskelainen, Chief Technical Officer at SensorTran has written a new article on distributed temperature sensing in enhanced geothermal system power plants. Jaaskelainen's introduction to the article. Geothermal power shows promise as an environmentally friendly source for electricity generation not least because fossil fuel alternatives produce at least an order of magnitude more carbon dioxide and consume a hundred times more water per kWh of energy produced. Geothermal energy plants have traditionally been limited to the edges of the tectonic plates but recent advances in enhanced geothermal systems (EGS) should greatly expand its geographical range [1].

Critical to successful and reliable EGS operations [2] is improved subsurface visualization. Fiber-optic distributed temperature sensing (DTS) enables both subsurface visualization and understanding of fracture distribution during both fracturing operations and production. The same DTS system can be used for reservoir

characterization and management, production optimization, surface and subsurface integrity monitoring, fluid injection and short-circuit monitoring.

This article provides summaries of geothermal energy technology and DTS technology, followed by a discussion of the many applications of DTS to geothermal electricity production. The article is available at <http://www.sensorsmag.com/sensors/article/articleDetail.jsp?id=625162>.



Employment

Employment Opportunities

Exploration Geologist, Western U.S.

The Exploration Geologist is responsible for overseeing the planning and execution of geothermal projects including compilation and evaluation of existing data, new file data acquisition and mapping, integration of disparate data sets, and development of geological occurrence models for geothermal resources. The exploration focus is the Western U.S., principally California, Nevada, Oregon, and Utah. This role could grow into Exploration Manager for a major geothermal development company.

Essential Functions: Candidate must have a demonstrated capability to work with a team of geoscientists to achieve corporate goals. The ability to communicate in writing and through speaking is essential. Candidate must be able to identify potential resources in known geothermal districts and to identify possible new occurrences in novel settings.

Education, Experience, and Skills Required:

- Bachelor's in Geology from an accredited university is a minimum requirement.
- 10-15 years experience in geothermal exploration, drilling and logging of exploration holes, and conduct of field surveys.
- The successful candidate may be required to spend up to 50% of their time in the field and must be able to withstand the rigors of extreme heat, cold, and wind for short periods of time.
- Travel within the U.S. will be required.

This is a fulltime position that will be located in Reno, NV. A benefit package is available and includes medical, dental, vision, 401(k), and long-term disability. Salary is negotiable, but dependent on experience and qualifications.

For consideration please email or fax resumes to: kborgna@magmaenergycorp.com, 775.787.7069 (fax)

Senior Director, Business Development, Major Geothermal Company

The Senior Director, Business Development is responsible for overseeing the Business Development function in North America for geothermal market. This role could quickly grow into a VP role and will oversee a sales team currently consisting of 8 sales reps and will grow it by 50%.

Essential Functions:

- Direct and execute the business development strategy to achieve company goals and objectives.
- Identify and develop key strategic partnerships, both internally and externally.
- Responsible for negotiating PPAs and contract changes.
- Evaluate and analyze market expansion opportunities
- Build and lead a business development team that will assist the company towards completion of company goals
- Build relationships with internal departments so that all areas of the company are ready to execute when necessary.

Education, Experience, and Skills Required:

- Bachelor degree in engineering and MBA
- 10–15 years experience in Sales, Marketing, Business Development or Operations roles (preferably a mix of sales and operations in energy industry)
- Willingness to travel up to 60% nationally and internationally
- Ability to negotiate contracts with potential business affiliates
- Experience in the renewable energy field a strong plus
- Proven track record maintaining confidentiality and dealing with company proprietary information

Contact: Paige Carratturo, Executive Recruiter

Richard Wayne & Roberts

877-236-0899 (direct)

206-855-9746 (fax)

paige@rwr.com

<http://www.linkedin.com/in/paigecarratturo>

Geothermal Project Supervisor, Central American Bank for Economic Integration, Costa Rica

The Central American Bank for Economic Integration (Banco Centroamericano de Integración Económica, BCIE) is looking for an expert in geothermal energy to supervise a project in Costa Rica. It is called Las Pailas and it is financed through BCIE.

Contact: Ana Karina Rubi de Reyes, Oficial de Consultorias, BCIE-Tegucigalpa, Honduras
Tel. +504-240-2243, Ext. 5214
Fax. +504-240-2228

Visit the BCIE Web site, www.bcie.org - www.cabei.org



Requests for Proposals

Added This Week

Environmental Management Fellowship Program, EPA (February 5, 2010)

The U.S. Environmental Protection Agency requests proposals for the National Network for Environmental Management Studies Fellowship Program. This program provides students an opportunity to participate in a fellowship project that is directly related to their field of study. Fellowship categories include: Environmental Policy, Regulation, and Law; Environmental Management and Administration; Environmental Science; and Public Relations and Communications. \$400K expected to be available, up to 40 awards anticipated. Responses due 2/5/10. For more info, go to: <http://www.epa.gov/education/students.html>. Refer to Sol# EPA-EED-10-01. (Grants.gov 11/5/09)

Power, Controls and Adaptive Networks, National Science Foundation (February 7, 2010)

The National Science Foundation requests proposals for Power, Controls and Adaptive Networks. This program supports distributed control of multi-agent systems with embedded computation for sensor and adaptive networks. This program emphasizes electric power networks and grids, including generation, transmission and integration of renewable, sustainable and distributed energy systems, such as fuel cells and micro-turbines in large power networks; high power electronics and drives; and understanding of associated regulatory and economic structures. The program also emphasizes energy scavenging and alternative energy technologies, including solar cells, ocean waves, wind, geothermal, low-head hydro, and the hydrogen economy. In addition, the program supports generation and integration in the National Grid (InterGrid), and interdependencies of critical infrastructure in power and communications. Responses due 2/7/10. For more info, contact Radhakishan Baheti at rbaheti@nsf.gov or go to: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13380. Refer to Sol# PD-10-1518. (Grants.gov 11/16/09)

Thermal Transport, National Science Foundation (March 3, 2010)

The National Science Foundation requests proposals for Thermal Transport Processes. This program supports engineering research aimed at gaining a basic understanding of the microscopic and macroscopic levels of thermal transport phenomena (heat and mass transfer) in energy conversion and conservation, the synthesis

and processing of materials, cooling and heating of infrastructure and equipment, the interaction of industrial processes with the environment, the propulsion of air and land-based vehicles, and thermal phenomena in biological and environmental systems. Responses due 3/3/10. For more info, contact Theodore Bergman at tbergman@nsf.gov or go to: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13367. Refer to Sol# PD-10-1406. (Grants.gov 11/16/09)

Energy for Sustainability, National Science Foundation (March 3, 2010)

The National Science Foundation requests proposals for 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. Responses due 3/3/10. For more info, contact Gregory Rorrer at grorrer@nsf.gov or go to: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=501026. Refer to Sol# PD-10-7644. (Grants.gov 11/16/09)

Environmental Engineering, National Science Foundation (March 3, 2010)

The National Science Foundation requests proposals for 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. Responses due 3/3/10. 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-10-1440. (Grants.gov 11/16/09)

Environmental Sustainability, National Science Foundation (March 3, 2010)

The National Science Foundation requests proposals for 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. Research in Environmental Sustainability typically considers long time horizons and may incorporate contributions from the social sciences and ethics. Responses due 3/3/10. 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 10-7643. (Grants.gov 11/16/09)

Environmental Implications of Emerging Technologies, National Science Foundation (March 3, 2010)

The National Science Foundation requests proposals for Environmental Implications of Emerging Technologies. This program provides support to develop and test the environmental effects of new technologies. The program also supports research on the development and refinement of sensors and sensor network technologies. Responses due 3/3/10. For more info, contact Cynthia Ekstein at acekstein@nsf.gov or go to: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=501030. Refer to Sol# PD-10-1179. (Grants.gov 11/16/09)

Technology Solutions, 2010 Tech Awards Nominations (March 31, 2010)

Nominations are invited for the 2010 Tech Awards. This program awards individuals, organizations, and companies from around the world that are utilizing innovative technology solutions to address issues pertaining to health, education, the environment, economic development, and equality. Individual awards \$50K each. Responses due 3/31/10. For more info, go to: <http://techawards.thetech.org/>. (Foundation Center RFP Bulletin 11/6/09)

RFP Announcements**Geothermal Energy Development, Department of the Navy**

Department of the Navy Naval Air Systems Command Naval Air Warfare Center Weapons Division Dept. 3a Recovery Act - The purpose of this Broad Agency Announcement (BAA) is to solicit proposals for investigations of geological properties associated with active geothermal systems within select regions of Naval Air Station (NAS) Fallon, NV; Naval Air Facility (NAF) El Centro, CA; Chocolate Mountains Gunnery Range (Chocolate Mountains), CA; and Hill Air Force Base (AFB), UT. The object is to perform geological investigations that could potentially lead to the discovery of a geothermal resource. This notice constitutes a BAA as contemplated in FAR 6.102(d)(2). A formal Request for Proposal (RFP)/Solicitation will not be issued. The Naval Air Weapons Division (NAWCWD) will not issue paper copies of this BAA. NAWCWD reserves the right to select for award, all, some, or none of the Proposals in response to this BAA. NAWCWD reserves the right to fund all, some, or none of the Proposals received under this BAA. NAWCWD provides no funding for direct reimbursement of proposal development costs. Technical and Cost Proposal (or any other material) submitted in response to this BAA will not be returned. It is the policy of NAWCWD to treat all Proposals as competition sensitive Bid and Proposal Information and to disclose their contents only for the purpose of evaluation. Awards will be to United States (U.S) companies only. All contracts resulting from this announcement are subject to the federal Acquisition Regulation and the Department of Defense Federal Acquisition Regulation Supplement. SEE ENCLOSED ATTACHMENT FOR SPECIFIC INFORMATION AND FORMATTING THAT MUST BE FOLLOWED WHEN PREPARING PROPOSALS FOR THIS CONTRACTING EFFORT. This enclosure calls out another document "Genetic Occurrence Models for Geothermal Prospecting, N68936-04-C-0057", which is attachment 2 to this notice. Place of Performance (if applicable): Naval Air Station (NAS) Fallon, NV; Naval Air Facility (NAF) El Centro, CA; Chocolate Mountains Gunnery Range (Chocolate Mountains), CA; and Hill Air Force Base (AFB), UT.

See <http://www.tradingmarkets.com/site/news/Stock%20News/2650824/>.

People, Prosperity and the Planet, EPA (January 5, 2010)

The U.S. Environmental Protection Agency requests proposals for the 7th Annual P3 Awards. A National Student Design Competition for Sustainability Focusing on People, Prosperity and the Planet. P3 supports R&D and

design solutions to real world challenges involving the overall sustainability of human society. Areas of interest include: Energy, Built Environment, Materials and Chemicals, Water, and Agriculture. \$850K expected to be available, up to 46 awards anticipated. Responses due 1/5/10.

For more info, contact Cynthia L. Nolt-Helms at nolt-helms.cynthia@epa.gov or go to:

http://epa.gov/ncer/rfa/2010/2010_p3.html. Refer to Sol# EPA-G2010-P3. (Grants.gov 8/28/09)

Environmental Justice Small Grants Program, EPA (January 8)

The U.S. Environmental Protection Agency requests proposals for the Environmental Justice Small Grants Program. This program supports projects that addresses a local environmental and public health issue within an affected community. There is a well-established scientific consensus that climate change will cause disproportionate impacts upon vulnerable populations. Therefore, this year the program will emphasize the disproportionate impacts of climate change in communities with environmental justice concerns. Areas of interest include, but are not limited to: Energy efficiency, renewables, water efficiency, Green jobs and green economy capacity building, and smart growth. \$1 million expected to be available, up to 40 awards anticipated. Responses due 1/8/10. For more info, including Regional contacts, go to:

<http://www.epa.gov/compliance/environmentaljustice/grants/ej-smgrants.html>. Refer to Sol# EPA-OECA-OEJ-10-01. (Grants.gov 10/28/09)

Energy Efficiency Block Grants – Recovery Act, CEC (January 12)

The California Energy Commission requests proposals for Energy Efficiency Conservation Block Grants. This program will provide support for energy efficiency projects in small CA cities and counties. \$35.5 million expected to be available. Responses due 1/12/10. For more info, go to:

<http://www.energy.ca.gov/contracts/recovery.html#eeebg>. Refer to PON# 09-001.

Clean Energy Deployment, Recovery Act, New York (February 16, 2010)

The New York State Energy Research and Development Authority seeks proposals for Project Implementation Funding for State Energy Program American Recovery and Reinvestment Act. This RFP will support the implementation of energy conservation measures including energy efficiency, renewable energy, and clean fleet projects. \$74 million expected to be available. Responses due 10/26/09, 12/21/09, and 2/16/10. For more info, contact Ben Fox at bf2@nyserda.org or go to: <http://www.nyserda.org/funding/1613rfp.asp>. Refer to RFP# 1613.

Emerging Frontiers in Research and Innovation (March 31, 2010)

The National Science Foundation requests proposals for Emerging Frontiers in Research and Innovation. Through this new funding opportunity, the NSF seeks proposals from interdisciplinary teams of researchers, with transformative ideas that represent an opportunity for a significant shift in fundamental engineering

knowledge with a strong potential for long term impact on national needs or a grand challenge. Areas of interest include: 1) Renewable Energy Storage, and 2) Science in Energy and Environmental Design (SEED): Engineering Sustainable Buildings. This solicitation is in coordination with the U.S. Department of Energy and the U.S. Environmental Protection Agency. \$29 million expected to be available, up to 14 awards anticipated. Letters of Intent due 10/9/09, preliminary proposals due 11/13/09, final proposals due 3/31/10. For more info, go to: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf09606. Refer to Sol# 09-606. (Grants.gov 8/13/09)

RFP for Smart Grid Investments, DOE, American Recovery and Reinvestment Act (March 31, 2010)

The U.S. Department of Energy announces its intent to request proposals for the Smart Grid Investment Grant Program. Through this program, DOE seeks to stimulate the rapid deployment and integration of advanced digital technology that is needed to modernize the nation's electric delivery network for enhanced operational intelligence and connectivity. The program will support projects that promote deployment, including development of component technologies. Individual award range anticipated to be \$500K to \$5 million. The RFP will open on or about 6/17/09. Three due dates anticipated: 7/29/09, 12/2/09, and 3/31/10. For more info, contact Donna Williams at Smart-Grid.NOIComments@hq.doe.gov or go to: <https://e-center.doe.gov/iips/faopor.nsf/UNID/39COD96768F2083F8525759A0068F216?OpenDocument>
<http://www07.grants.gov/search/search.do;jsessionid=9x3VJydGP2TfWHPRK9mfnphLqsWpm1TQmDJTzS6XLDp1QJKpb2SM!-1267850137?oppId=46833&flag2006=false&mode=VIEW>. Refer to Sol# DE-FOA-0000058. (Grants.gov 4/16/09)



Events

GEA Events

GEA Geothermal Energy Finance Forum, January 14, 2010 (New York, NY)

Ritz-Carlton Battery Park

The Geothermal Energy Association (GEA), with Gold Level Sponsors, Islandsbanki and Vulcan Power, will be holding a one-day Geothermal Energy Finance Forum on Thursday, January 14, 2010 at the Ritz-Carlton, Battery Park in New York City. This program will bring the finance and investment community of New York City together and provide a tutorial on geothermal energy investment with top experts and major players in geothermal development and finance. The day's agenda includes presentations and panel discussion on; project development and design, risk mitigation, costs and financial modeling, government finance and incentives, and case studies from developers and financiers with recent success stories.

For information contact Kathy Kent at Kathy@geo-energy.org.

Renewable Energy World North America 2010, February 23–25, 2010 (Austin, TX)

<http://www.renewableenergyworld-events.com>

Austin Convention Center

CGEC California Geothermal Energy Summit, May 12, 2010 (Davis, CA)

<http://cgec.ucdavis.edu/>

UC Davis Campus

GEA Geothermal Symposium, May 21, 2010 (Washington, DC)

GEA Geothermal Energy Workshop, July 22, 2010 (Las Vegas, NV)

GEA Geothermal Expo and Conference, TBA

GEA's annual Geothermal Energy Expo, date and location to be announced

Why Should You Attend GEA Events?

As the national trade association for the geothermal industry, the Geothermal Energy Association (GEA) strives to create and deliver educational events involving the full range of the geothermal industry, reflecting the dynamic growth of the geothermal market, and communicating the benefits of geothermal energy to all. GEA events offer important opportunities to learn and network within the geothermal community, and to inform and educate companies and organizations outside today's industry that are interested in learning more about geothermal energy. The revenue generated from GEA events is used to advance the goal of the GEA, "to expand the production and use of geothermal energy in the United States and around the world." The revenue supports GEA's workshops and events, communications activities, outreach efforts, policy related activities and analysis, internet publications, and other initiatives designed to help achieve this goal. ONLY GEA puts your dollars to work in all of these ways to advance the future of the geothermal energy industry. And, GEA does not sell your email or postal address to junk mailers or spammers.

To keep track of new events and changes to this calendar go to: www.geo-energy.org

Geothermal Energy Weekly

A newsletter for the geothermal industry written by Leslie Blodgett and Karl Gawell.

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