This Week

February 24, 2011

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

National News

House Passes Spending Cuts Effective March 4, Senate Blasts House Proposal -- Congressional Stalemate May Lead to Government Shutdown

After almost a week of long days debating and voting on amendments to HR 1, the Continuing Resolution to fund federal government programs, the House Leadership applauded the results. House Appropriations Chairman Hal Rogers (R-KY) today praised the passage of H.R.1, the Continuing Resolution (CR):

> "This bill is a monumental accomplishment for each and every American who believes that their government is spending too much. It dramatically scales back the size and scope of domestic government programs, eliminates $100 billion in spending compared to what the President asked for last year, and will mark the beginning of a new trend of reductions that will take place throughout the next year.
>
> "We held no program harmless from our spending cuts, and virtually no area of government escaped this process unscathed. While these choices were difficult to make, we strived to spread the sacrifice fairly, weeding out waste and excess, with a razor-sharp focus on making the most out of every tax-dollar.
>
> "My Republican Committee members and I promised to slash spending and to help reduce our nation's dangerous levels of deficits and debt so that our economy can grow and businesses can create jobs. This bill does just that," Rogers said.

The House Appropriations Committee also released a detailed summary of the long list of cuts in the final legislation. The detailed House list is at: http://appropriations.house.gov/index.cfm?FuseAction=PressReleases.Detail&PressRelease_id=264&Month=2&Year=2011

In the Senate, Appropriations Chair Daniel Inouye (D-HI) blasted the House action. Senator Inouye said: "It is clear from this proposal that House Republicans are committed to pursuing an ineffective approach to deficit reduction that attempts to balance the budget on the back of domestic discretionary investments, which constitute only a small percentage of overall federal spending. The priorities identified in this proposal for some of the largest cuts - environmental protection, healthcare, energy, science and law enforcement - are essential to the current and future well-being of our economy and communities across the country. Such an approach would knock the legs out from under our nascent economic recovery, kill jobs, and do virtually nothing to address the

long-term fiscal crisis facing our country. Try as they might to convince the American people otherwise, it is simply not possible to balance the budget by targeting 15 percent of federal spending - no matter how deep the cuts are.

The Senate Appropriations Committee has released its analysis of the final House cuts, which is available at: http://appropriations.senate.gov/news.cfm?method=news.view&id=bb13b76d-42bb-47ea-b444-2a87595f173f

Senator Dianne Senator (D-CA), Chair of the Energy and Water Appropriations Subcommittee, also criticized the House, and in particular sounded her opposition to the House proposal to terminate renewable loan guarantees. "What we saw in the House was an ideological budget-cutting session. If they didn't like a program, they cut it. Unfortunately, cutting by political bias produced a bill that will slash hundreds of thousands of jobs, many in the private sector," said Senator Feinstein. Details of Senator Feinstein's criticism are available at: http://feinstein.senate.gov/public/index.cfm?FuseAction=NewsRoom.PressReleases&ContentRecord_id=4e29f070-5056-8059-76e9-9b0e1d62e80c

Surprisingly, we have been told that analysis of the impact of the House Continuing Resolution on DOE and, in particular, their renewable energy programs, is still being conducted at the time this article is being published. In general, DOE's efficiency and renewable programs would face a 20%+ cut in their annual spending, but because that cut is coming half way through the year the actual impact for the remaining months may be closer to a 50% cut.

When the Senate returns from its President's Day Work Period next week, it will take up the spending bill on an urgent basis. Starting next Friday, March 4, federal agencies will have no congressionally appropriated funds and a government-wide shutdown could result.

DOE Geothermal Technologies Program and GEA Discuss FY2012 Budget Request

On February 17, JoAnn Milliken, Acting Geothermal Technologies Program Manager, along with the Geothermal Energy Association provided a telephone briefing on the FY2012 budget proposal. Milliken discussed details of the GTP's plans moving forward and answered questions from 55 participants in a live forum. In the budget request, geothermal technologies, currently apportioned $43,120,000 received a congressional request of $101,535,000, or a $135.5% increase. DOE is looking at ways to bring down the cost of geothermal development and deploy new technologies.

Milliken noted that the budget request proposes increased RD&D in all geothermal resources. The overall strategic goal is to lower the cost of geothermal electricity and enable an installed capacity of 12 GWe by 2020, reflecting the Administration's support for geothermal RD&D and increased renewable energy generation in general. The Budget structure includes five subprograms: Innovative Exploration Technologies, Low

Temperature and Coproduced Resources, Permeable Sedimentary Resources, Enhanced Geothermal Systems, and Systems Analysis (see pie chart).

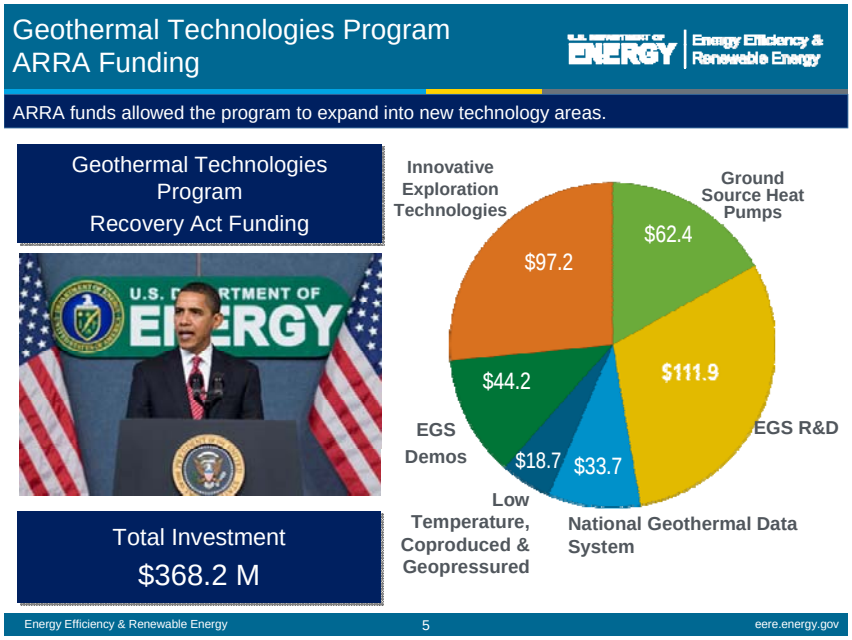
Efforts in enhanced geothermal systems (EGS) have been expanded to work with exploring the use of CO2 as a geofluid through using monitoring tools, methods and models to track CO2 in geothermal reservoirs.

Milliken clarified that while ground source heat pumps are part of the Buildings Technologies Program, direct use geothermal systems are part of the Low Temperature and Coproduced Resources subprogram in the GTP. Currently, 150°C is used as the cut-off for the Low Temperature and Coproduced Resources subprogram, as identified by EISA. Milliken noted that GTP would be willing to revisit that definition if deemed necessary.

Milliken also referenced two other programs relevant to the geothermal industry: Section 1603 received a FY2012 request to be extended through the 2012 calendar year. This program provides direct payments in lieu of tax credits to companies that create and place in service renewable energy facilities.

The section program she referred to, Section 48c (the Advanced Energy Manufacturing Tax Credit), received a FY2012 budget request for an additional $5 billion. This program authorizes the Treasury to give tax credits for qualified investments in manufacturing for renewable energy, storage, transmission or conservation.

Milliken indicated that the questions and feedback provided by engaged industry partners during the briefing were extremely helpful to the Geothermal Technologies Program.



Geothermal Energy Association Announces New Program, Recognizing Industry Advances

Press Release, Washington, DC, February 17 – Today the Geothermal Energy Association (GEA) announced the call for entries for the first-ever GEA Honors award program.

"We are excited about the awards and the opportunity to recognize the geothermal industry's most innovative and inspiring developments from the past year," said Karl Gawell, Geothermal Energy Association Executive Director. "The GEA Honors will shine a light on the contributions being made by the individuals and companies who are doing an exemplary job of promoting and growing geothermal power."

Nominations are currently being accepted for the awards program. In this inaugural year, awards will be given to GEA member companies in the following categories:

- Technological Advancement – Awarded to an individual or company that has developed a new, innovative, and/or pioneering technology to further development
- Environmental Stewardship – Awarded to an individual or company that has fostered outstanding environmental stewardship through the use of geothermal systems. Award to be presented in conjunction with the environmental and Energy Study Institute (EESI)
- Economic Development – Awarded to an individual or company that has made a substantial contribution to the development of local, regional, or national markets through the development of geothermal systems

Additionally, the GEA Honors will be accepting nominations for special recognition of those individuals and companies who have made outstanding achievements in the geothermal industry. These awards are open to GEA members as well as non-member companies and individuals.

The GEA Honors program deadline for entries is April 4, 2011.

For more information about the GEA Honors program or questions about the Geothermal Energy Association, please contact Garret Drexler at 646-695-7042 or garret@rosengrouppr.com.

Company News

Íslandsbanki Launches Geothermal Industry Dashboard

As part of our continual efforts to promote geothermal energy, Íslandsbanki is proud to announce the launch of our Geothermal Industry Dashboard. The Dashboard is a collection of data sets for those following or interested in the geothermal industry. The information is presented through interactive charts and graphs covering geothermal usage globally as well as specific data on Iceland and the United States.

The following are examples of data users can find on the Dashboard:

- Geothermal capacity by country
- Potential capacity by country
- Comparisons of geothermal with other renewable energy technologies
- Daily and historical quotes for Geothermal Industry stocks as well as oil and natural gas prices including forward curves

The Geothermal Dashboard is accessible free of charge. To view the Dashboard go to: www.islandsbanki.is/energy-dashboard. The Dashboard is a joint effort by Íslandsbanki and Iceland based data portal, DataMarket.com.

Nevada Geothermal Power to Purchase Iceland America Assets in Imperial Valley

Press Release [Full Story], Vancouver B.C., February 23 — Nevada Geothermal Power Inc. (NGP) (TSX.V: NGP, OTCBB: NGLPF) and Iceland America Energy, Inc. (IAE) are pleased to announce that they have signed an agreement giving NGP the exclusive right to purchase a 100 percent ownership of IAE's geothermal assets comprised of the New Truckhaven, East Brawley and South Brawley Projects in the Imperial Valley, Southern California, for US$4,150,000. NGP will pay US$100,000 in cash and the balance in NGP shares having a deemed value of C$0.65. Reykjavik Energy Invest hf, a subsidiary of the City of Reykjavik's geothermal utility Orkuveita Reykjavikur (Iceland), is the majority owner of IAE with an 83.7% interest and will thus become a significant shareholder of NGP. The deal is expected to close by March 31, 2011.

The Imperial Valley is one of the world's premier geothermal areas with highly productive, high temperature geothermal resources occurring over a large area in an active structural belt. Existing power plants operated by Cal Energy and Ormat Inc. have an aggregate capacity of approximately 560 MW. Among other current projects in the region, Energy Source is constructing the Hudson Ranch 49.9 MW geothermal power facility and Ram Power is drilling production test wells at their 50 MW Orita geothermal power project.

Ormat Technologies Reports 2010 Year End and Fourth Quarter 2010 Results

Press Release [Full Story] — RENO, Nev., February 22 -- Ormat Technologies, Inc. (NYSE: ORA) announced today the financial results for the fourth quarter and full year ended December 31, 2010.

The highlights for the year and recent development:

- 15.5 percent increase in Electricity Segment revenues;
- Annual net income of $37.2 million, or $0.82 per share;
- Completed the 15 MW Jersey Valley Plant in Northern Nevada and the 8 MW Puna expansion;
- Raised approximately $250 million in debt offering;
- Refinanced $24.9 million in tax equity transaction for OPC power plants;
- Increased land position to 343,000 acres;
- Acquired the balance of the Mammoth complex; and,
- Continued progress in greenfield development sites.

Commenting on the results, Dita Bronicki, Chief Executive Officer of Ormat, stated: “The significant resources we have invested in the acquisition, exploration and development of new leases, as well as project enhancements, are reflected in the steady growth of our total generation. This positively impacted revenue in our Electricity Segment, which reached $291.8 million, a 15.5 percent increase over last year. We currently have ten projects in various stages of construction and development that we expect will add significantly to our generation and top-line growth through 2013.”

U.S. Geothermal Secures $96.8 Million Project Loan for Neal Hot Springs

Press Release [Full Story] — BOISE, Idaho - February 24 — (NYSE Amex: HTM; TSX: GTH) U.S. Geothermal Inc., a leading renewable energy company focused on the development, production and sale of electricity from geothermal energy, today announced the financial closing with the U.S. Department of Energy ("DOE") of a $96.8-million loan guarantee to construct its planned 23-megawatt-net power plant at Neal Hot Springs in Eastern Oregon.

Neal Hot Springs is the first geothermal project to complete a loan guarantee under DOE's Title XVII loan guarantee program, which was created by the Energy Policy Act of 2005 to support the deployment of innovative clean energy technologies. The DOE loan guarantee will guarantee a loan from the U.S. Treasury's Federal Financing Bank. The $96.8-million Federal Financing Bank loan represents 75% of total project cost. When combined with the previously announced equity investment by Enbridge Inc., the loan provides 100 percent of the capital remaining to fully construct the project.

"Today's Federal loan guarantee announcement cinches the deal to bring more renewable energy jobs to Eastern Oregon and adds another milestone in Oregon's march back to economic growth," said Senator Ron Wyden of Oregon. "Development of renewable energy is not just a slogan in Oregon, it's a genuine opportunity."

Renewable Energy and Climate Change

NYT Discusses U.S. Geothermal Industry Needs

An article in the *New York Times* discusses the geothermal energy industry's underdog status among the renewables in the U.S., despite it being the one renewable energy sector that the U.S. dominates on a global level. Part of the problem is that tax credits and DOE loan guarantees that were only recently extended to geothermal could just as quickly be rescinded. As termed by Jonathan Zurkoff, vice president for finance at U.S. Geothermal: "Just as we've caught up, Congress might cut all those programs."

Geothermal energy is still often simply overlooked in discussion of renewable energy. "We've been seeing a lot of fast-track discussions with wind and solar, but somehow geothermal gets left off the list," the article quoted Karl Gawell, executive director of the Geothermal Energy Association.

This despite the value of geothermal equipment manufacturers, who source most and sometimes all of their production chain within the U.S. Some geothermal companies, such as U.S. Geothermal and Nevada Geothermal Power, have gone north to trade at the Toronto Stock Exchange, where they feel they are noticed, despite doing most of their business in the U.S.

The U.S. industry is working to change that and get noticed domestically. The GEA Finance Forum in Lower Manhattan was one way of accomplishing that and alerting the U.S. financial world to the existence and financial need of the geothermal community, according to the article.

GEA Joins NGA Roundtable on Opportunities for State Clean Energy Actions

On February 23, the National Governors Association Center for Best Practices convened an expert roundtable to discuss the opportunities for clean energy actions. GEA's Director, Karl Gawell, was one of 25 experts participating in the dialogue. The NGA Center called the meeting "an opportunity for clean energy experts to discuss the challenges and opportunities in increasing the deployment of clean energy, hear about promising state approaches and best practices, and brainstorm strategies for near term state actions. Te group will focus on the connection between clean energy and economic development and the barriers to statewide planning, financing and outreach."

"NGA's Center for Best Practices convened this session at a unique time when challenges are great and risks are possible even greater," Gawell said. "At the same time we are facing the potential for another global energy

crisis, states are face enormous deficit problems, and this program provided an opportunity for a wide range of thinking to develop about how to address this critical situation. I commend NGA for their forward thinking."

State News

California: CPUC Report Shows Renewable Energy Contracts Expensive

A report from a division of the California Public Utilities Commission examines the costs of a 2002 law requiring utilities to get 20% of their power from renewable sources by the end of 2010. According to the report, 59% of the renewable energy contracts that have been signed have been more expensive than electricity from new power plants burning natural gas.

The report suggests that utilities set a contract price limit. But Pacific Gas and Electric company spokesman Denny Boyles told press that if the commission set a price limit and tried to keep it confidential, renewable power developers might figure it out anyway and raise their prices to meet it. "If you set a price limit, prices naturally rise to that limit," Boyles said.

The report also recommends the commission give contracts more scrutiny, since geothermal energy can cost 36% less than power from a natural gas plant, according to a California Energy Commission data.

California: Board Hears Testimony on Bottle Rock Plant EIR Appeal

The Board of Supervisors heard testimony and public comment this week on the Lake County Planning Commission's certification of the final environmental impact report for the Cobb Mountain geothermal project. Bottle Rock Power is proposing an expansion to plant, but Friends of Cobb Mountain have appealed the EIR certification, which they say does not adequately address their concerns, including sulfur smells and complaints of lowered air quality.

County Air Pollution Control Officer Doug Gearhart said monitoring has not revealed significant changes in the air, and county Community Development Director Rick Coel said the EIR was "the most detailed environmental impact report" he had seen in his 20 years with the county. The board agreed to continue discussion at 1:30 p.m. Tuesday, March 1.

Nevada: DOE Loan Guarantee Goes to Nevada Transmission Line

The U.S. DOE has finalized a $343 million loan guarantee to build One Nevada Transmission, making Nevada the first state in the country to build an electric transmission line. Great Basin Transmission and NV Energy will build a 235-mile, 500-kiloVolt AC line from Ely to just north of Las Vegas. It will be capable of transporting 600 MW of electricity, including power from renewable energy sources.

Senate Majority Leader Harry Reid of Nevada noted his support for renewable energy development and its potential for job creation. "We talk a lot about it, but here is some action. We need to continue to take advantage of western states' natural resources. And frankly across the country," Reid said.

The project will cost about $500 million and is expected to be completed in late 2012 or early 2013. It is also Phase I of the larger Southwest Intertie transmission Project (SWIP). The multi-state line would transmit about 2,000 MW of electricity from Wyoming, Idaho and Nevada to California.

International News

Asia

Geothermal Investments Await Indian National Policy; Policies, Feed-in Tariffs Necessary for Renewables in S.E. Asia

India's Ministry of New and Renewable Energy hopes to have a geothermal energy policy in place by March, Ramesh Narayan Sawant, a director at the ministry's geothermal department told press. "We must consult with each of the states and hopefully that is done by the end of this month so the policy framework can be drafted by the end of March," Sawant said. He added that some states are trying to stake a claim to the natural resource: "We need to work with those states to make the most of India's geothermal resources."

A national geothermal policy framework could instantly attract investment from companies such as Tata Power and Thermax, who have shown interest in developing geothermal sites in the country, which currently has no on line geothermal electricity stations. Thermax is looking at the Ratnagiri region in western Maharashtra state, while another company, Geosyndicate Power, is awaiting tariff approval for a 25-MW demonstration plant in Andhra Pradesh state.

An AFP article further discusses renewable energy in Southeast Asia, where in general there is an abundance of renewable resources. Paul Curnow of Baker & McKenzie specializes in climate change policy, and told press most China and India have so far seen most of the investments in renewables in Asia. "It's slim pickings in Southeast Asia because the policy settings are not mature enough," he added, "It's not a question of a lack of capital."

Rafael Senga of WWF International and Marc Lohoff of solar systems manufacturer Conergy added more context to the state of renewable energy in Southeast Asia. Senga told press the Philippines and Indonesia have the biggest potential for geothermal energy. Lohoff said that the tourist draw to Thailand's beaches helps its prospects especially in solar energy. Both the Philippines and Malaysia have renewable energy legislation in

place, and Singapore is active in renewable energy. "Most investors are just waiting for governments to announce and implement their feed-in tariff systems before they get involved," Lohoff added.

Europe

Iceland: Iceland Deep Drilling Project Publishes Magma Findings

The March issue of the Geological Society of America journal GEOLOGY contains research on the Krafla volcano in Iceland. In 2009, geologists exploring the Krafla volcano observed magma flowing into their test well. The goal of the government-industry Iceland Deep Drilling Project was to test geothermal fluids at supercritical pressures and temperatures and determine whether they could be exploited for energy; but when magma filled the lowest 9 meters (30 feet) of the open borehole, the team terminated the drilling and completed the hole as a production well.

"While the magma flow interrupted our project, it gave us a unique opportunity to test a very hot geothermal system as an energy source," said Wilfred Elders, a geologist at the University of California, Riverside. The research shows that although the Krafla volcano is basaltic, like other volcanoes in Iceland, the magma they encountered is a rhyolite.

Supercritical water is used in large coal-fired electric power plants, but has never been used in geothermal areas, where the scientists say it should occur naturally. The Iceland Deep Drilling Project continues the search for supercritical geothermal resources and plans to drill a second deep hole in southwest Iceland in 2013.

UK: Drilling Begins for Newcastle Geothermal System

Newcastle and Durham Universities are teaming up to drill a geothermal borehole at the planned Science Central site in Newcastle. Professor Paul Younger, director of the Newcastle Institute for Research on Sustainability director said: "Our aim is to rise to the challenge of putting a novel form of deep geothermal energy at the very heart of city centre regeneration. It's an incredibly exciting project. If we're right and we pump up water at such elevated temperatures, it would mean a fully renewable energy supply for a large part of the city centre."

The Newcastle Science City Partnership and the Department of Energy and Climate Change are funding the project, which is similar to an operating geothermal/oil/natural gas combined heat and power network in Southampton.

Americas

Costa Rica: Plans Underway for 12-MW Geothermal Pilot Project

The Costa Rican Institute of Electricity is in discussions with the U.S. company GTherm to use the Single-Well Engineered Geothermal System (SWEGS) in a 12-MW geothermal pilot project. The system uses a closed circuit, which reduces the amount of water required for operation. Costa Rica currently has five geothermal units producing 165.5 MW of electricity, or 13% of the country's installed electricity capacity.

Pacific

Indonesia: Government Allocates Rp 350b for Geothermal, Orders PLN to Buy Geothermal

The Energy and Mineral Resources Ministry has announced Rp 350 billion (US$39 million) set aside to "mitigate the risks of geothermal upstream operations," Minister Darwin Zahedy Saleh said in a statement, in hopes of boosting investor confidence. Pertamina Geothermal Energy and the Japan International Corporation Agency were among the entities planning investments in the country's geothermal market. Indonesia contains 40% of the world's geothermal reserves, but only 1,189 MW of developed power.

The announcement follows a ministerial decree ordering state-owned electricity company PT Perusahaan Listrik Negara (PLN) to buy power from geothermal producers at up to 9.7 U.S. cents. "The decree will give a legal platform for accelerating geothermal development and in completing power purchase agreements," Surya Darma, head of the Indonesian Geothermal Association, told press.

New Zealand: SNC-Lavalin Wins Geothermal Energy Contract

Contact Energy has awarded SNC-Lavalin and partners McConnell Dowell and Parsons Brinkerhoff a geothermal energy project. The two units of the 166-MW Te Mihi project will be built near the existing Wairakei geothermal station. When the new units are completed, 45 MW of the Wairakei station will be decommissioned and will result in a net increase of 114 MW from the combined Te Mihi and Wairakei stations. "Geothermal power is playing an increasingly important role in the industry, and our mandate to execute on this contract is a testament of our ability to successfully deliver complex projects all over the world," SNC-Lavalin vice-president Patrick Lamarre told press.

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

Notices

New This Week

Correction to "DOE Geothermal Technologies Program Budget Proposed at $102 million"

Please note this correction to an article in last week's Geothermal Energy Weekly (dated February 15). Under CO2 as a geofluid in EGS the newsletter stated: "In FY 2012 GTP (in partnership with FE R&D) will advance understanding of the geochemical evolution of the reservoir, and flow and *mining* of scCO2 with host fluids. The program will also develop and modify monitoring tools and methods to track CO2 in geothermal reservoirs."

This should have read, ". . . will advance understanding of the geochemical evolution of the reservoir, and flow and *mixing* of scCO2 with host fluids."

Geothermal Power Reverse Trade Mission: Linking U.S. Companies to Export Opportunities in Indonesia (April 10 – 20)

From NEI: The United States Trade and Development Agency (USTDA) will host a delegation of key decision-makers in Indonesia's geothermal power development at the central and provincial levels. The delegation will tour geothermal power project sites across America to observe the design, manufacture and operation of U.S. technology and services in this field.

Mission Itinerary:
Monday, April 11 - Tuesday, April 12, Sacramento, CA
Wednesday, April 13 - Friday, April 15, Reno, NV (Business Briefing, 9 am to 1 pm on April 14th)
Monday, April 18 - Tuesday, April 19, Washington, DC

U.S. companies will also have a chance to discuss Indonesia's upcoming geothermal projects in Sacramento (CA), Reno (NV) and Washington, D.C. As Indonesia gears to escalate its geothermal capacity from 1,200 MW in 2010 to over 9,500 MW by 2025, this Mission presents an exciting and timely business development opportunity for U.S. geothermal companies.

This Mission is a follow-up to the USTDA-sponsored Geothermal Power Development Training Program held in Indonesia earlier this year. The Training Program included a series of week-long sessions in six different locations throughout Indonesia, targeting provinces and regencies that offer the most potential for U.S. private sector involvement in the country's near-term geothermal developments and tenders. The Training Program was

designed to encourage a transparent and comprehensive tendering process amongst the local authorities vested with the responsibility of geothermal resource development in their regions.

Business Briefing in Reno, NV, Thursday, April 14th, 9am – 1pm

The Business Briefing provides excellent opportunities for U.S. companies to:

- meet geothermal project decision-makers from Indonesia's central and provincial governments;
- hear about Indonesia's geothermal market environment;
- learn from the delegates about specific upcoming procurement opportunities;
- highlight their companies' products and services; and
- participate in one-on-one meetings with delegation members.
- Participating in the Mission

We invite you to showcase your company to the Indonesian delegates during one-on-one meetings, by hosting lunches or dinners, or by participating in the Business Briefing. For more information, visit the Training Program and RTM Website at indonesiageothermal.govtools.us. To arrange meetings with delegates and for sponsorship opportunities, contact Garrett Shields at 410.997.7778 ext. 469 or gshields@bcs-hq.com.

Current Notices

Draft Needs Assessment for Innovative Exploration Technologies Released by DOE GTP

DOE GTP's Innovative Exploration Technologies (IET) Subprogram sponsored a technology planning workshop on October 28, 2010, in Sacramento, California. The workshop brought together a diverse group of experts from industry, academia, and government. IET solicited input from participants to identify technology needs and potential advances for the subprogram to pursue. Input received will be used to guide the strategy for leveraging resources to advance geothermal exploration tools.

The Draft Technology Needs Assessment is a critical component of ongoing technology roadmapping work that will be used to focus future IET efforts to spur the U.S. geothermal industry to seek green field resources by lowering exploration risks and costs through research, development and demonstration.

The Geothermal Technologies Program encourages all stakeholders to review the document and comment on the barriers, challenges and technology needs identified in the assessment. Are there any critical gaps in the assessment and/or is a technology need that is identified already being addressed? Stakeholder participation and feedback are very important elements in the roadmapping process to ensure that all critical technology advancement needs are identified. The comment period will close on March 11, 2011.

GEA Collecting Information for Next US Geothermal Power Production and Development Update

GEA is in the process of preparing its next US Geothermal Power Production and Development Update. If you have any projects in development for which you would like to submit information for inclusion in the Industry Update please contact Dan Jennejohn at danj@geo-energy.org or at 202.454.5261. Information needed for project inclusion in the update includes new projects in development and changes to project status since the last Industry Update (April 2010). Also, if a projects status has not changed since the last update GEA still must be notified that no change has taken place.

For inclusion in the Industry Update project information must submitted to the GEA by Monday, February 28, 2011. If you have questions regarding the Industry Development Update please contact Dan Jennejohn at the email address or phone number previously given. To see a copy of the previous update click the following link: http://geo-energy.org/pdf/reports/April_2010_US_Geothermal_Industry_Update_Final.pdf

Geothermal Resources Council Call for Abstracts (March 4)

The Geothermal Resources Council (GRC) invites you to present your latest technical work in geothermal research, exploration, development and utilization at GRC's 35th Annual Meeting October 23-26, 2011 at the newly renovated Town & Country Resort & Convention Center in San Diego, California. The theme this year is "Geothermal: Sustainable, Green Energy." Authors can submit a poster and/or oral technical presentation at the GRC's 2011 Annual Meeting. The 1-2 page Abstract submission deadline is March 4, 2011.

The online submission form is available at:
http://geothermal.informz.net/geothermal/data/images/2011submissionform.pdf
Content related questions: Andy Sabin at andrew.sabin@navy.mil or (760) 939-4061.
Format and general submission questions: Anh Lay at alay@geothermal.org or (530) 758-2360.
GRC Website: www.geothermal.org.

Join or Contribute to Brita Climate Ride, Geothermal Rock & Rollers powered by GEA (May 13-17)

GEA has assembled a team to participate in the Brita Climate Ride from New York City to Washington, DC, May 13–17. The 5-day ride begins in Manhattan and passes through Princeton, Pennsylvania Amish Country, and Maryland horse country. The ride ends at the US Capitol where riders will have a chance to meet with Congressional representatives.

Climate Ride is a non-profit organization that puts on fully supported, charitable bike rides to support sustainable solutions and environmental causes. Participation in the event helps provide finances and awareness to renewable energy and environmental causes. You can join our team or contribute to help us reach the donation goal at: http://climateride.donordrive.com/index.cfm?fuseaction=donorDrive.team&eventID=501&teamID=5027

Employment

New This Week

Associate Director, California Geothermal Energy Collaborative, UC Davis Energy Institute

For more information on the position, go to the UC Davis staff web page https://www.employment.ucdavis.edu/applicants/jsp/shared/frameset/Frameset.jsp?time=1297906619426 Click on search button and scroll down to the listing. The Quick link to apply will take you directly to the posting - www.employment.ucdavis.edu/applicants/Central?quickFind=58431

Employment Opportunities

Details available at http://geo-energy.org/empl_opport.aspx.

Sr. Engineer, McHale & Associates, Arvada, CO

McHale is seeking a Sr. Engineer to conceive, develop and implement projects of major significance to the business plan.

Consultant to Assess the Geothermal Market in Turkey, EBRD

The European Bank for Reconstruction and Development is considering a wide range of renewable energy proposals in Turkey, some of which are in the geothermal sector, and as such requires a consultant to provide an assessment of the Geothermal Market in Turkey. See http://www.ebrd.com/pages/homepage.shtml and http://www.balkans.com/open-news.php?uniquenumber=91332

General Manager, Geothermal Exploration, Origin Energy (Indonesia)

Jakarta based with domestic and international travel. If you are interested in this opportunity or other geothermal opportunities please contact: Jennifer Blake on +617 3867 0022or email jennifer.blake@originenergy.com.au.

NREL Seeking Applicants for Geothermal Analysis Group

We're looking for applicants with geothermal or related technical backgrounds that have strong analytical skills and good writing/communication skills. If you have any graduate students, post-docs, former undergrads with some experience, or other contacts that are looking for employment and would be good fits for any of these positions, please forward them the information. They can also apply for the positions online at http://www.nrel.gov/employment/job_openings.html. You may also contact:

Senior Level Assistant Site Manager, Operations and Maintenance

Contact: Richard@mrspokane.com or call 509-340-2852 Ext. 18

Senior Principal Geothermal Geologist – Brisbane, Australia

Shane Stevens / Talent Search Team Manager, Origin
Email: Shane.stevens@originenergy.com.au Phone: +61 00 11 73858 0237

Vice President Geology, Western US

Please send resumes to Bstevens@stmassociates.com

Geothermal Openings, NREL, Boulder, CO

Go to http://www.nrel.gov/employment/job_openings.html and search "geothermal"

Drilling Manager, NV

Contact: Andrew Matkovic / Vice President Clean Tech & Energy
(216) 539–7668 or andrewmatkovic@carmongroup.com

Geophysicist, Calpine, The Geysers, CA

To apply online, see
https://www.hrapply.com/calpine/AppJobView.jsp?link=3645&page=AppJobList.jsp&skimSessionName=com.hrlogix.view.cont.app.JobListTable&skimName=requisition.requisition_id&skimNdx=4&op=reset.

Renewable Energy Mechanical/Systems Engineer, Idaho International Laboratory, ID

Please contact: Vanessa Van Dyk at Idaho National Laboratory: Vanessa.VanDyk@inl.gov, 208-526-6325
OR apply on line at: www.inl.gov/careers

Project Manager

Contact: Andrew Matkovic, Vice President, The Carmon Group Inc.
andrewmatkovic@carmongroup.com or (216) 539-7668
(updated 8/20/10)

Development Manager

Contact: Andrew Matkovic, Vice President, The Carmon Group Inc.
andrewmatkovic@carmongroup.com or (216) 539-7668
(updated 8/20/10)

Project Manager Geothermal Exploration, Europe

Contact: droberts@penderfinancial.com

Requests for Proposals

New This Week

Renewable Energy Certificates, U.S. Air Force and Federal Civilians (March 28)

Issuance of REC solicitation SP0600-R-11-0418 -- A Renewable Energy Certificates (REC) solicitation for U.S. Air Force and various Federal Civilian customers, with total contract quantity of 243,266,000 kWh. Proposals are due March 28, 2011.

Link to Defense Logistics Agency DLA-Energy's current REC solicitation;
https://www.fbo.gov/?s=opportunity&mode=form&id=feae20a86e2041a27bcd24b7b06d7897&tab=core&_cview=0

Questions:
Ashleigh N. Johnson, Contract Specialist, Energy Electricity/Renewables Branch, Ashleigh.Johnson@dla.mil
Chris Boeding, Christopher.Boeding@dla.mil
PH: 703-767-8561 FAX: 703-767-8757

Proposal Announcements

Developing Renewable Energy and Energy Efficiency on Tribal Lands, DOE (March 3)

First Steps Toward Developing Renewable Energy and Energy Efficiency on Tribal Lands
Open Date: 01/24/2011, Close Date: 03/03/2011
Funding Organization: Office of Energy Efficiency and Renewable Energy
Funding Number: DE-FOA-0000422
Summary: The Department of Energy's (DOE's) Tribal Energy Program under the Office of Energy Efficiency and Renewable Energy is soliciting applications to initiate the First Steps Toward Developing Renewable Energy and Energy Efficiency on Tribal Lands. Under this announcement, DOE is soliciting applications for strategic energy planning, energy options analysis, energy organization development, and human capacity building related to sustainable energy efficiency implementation and/or renewable energy development. Please see the Funding Opportunity Announcement for instructions on how to apply, application content, and the criteria by which applications will be selected for funding.
For more information, see the full solicitation.

Refurbished 27-MW Marine Turbine, Ram Power

This turbine, originally designed by Westinghouse for aircraft carrier service, has been completely refurbished for geothermal service. It has been re-rated to 27,350 kW at design inlet conditions of 469,875 lb/h 60 psig, 307F inlet conditions; 3.0" HgA exhaust. At a steam flow of 431,215 lb/h, it is expected that the turbine will produce 25,100 kW.

New engineering performed for this machine includes: New steam path engineering and all new manufacturing/performance drawings are available, including interstage and inner gland steam sealing manufacturing drawings, turbine clearance diagrams, rotor lifting diagrams, and new flow path performance curves at the anticipated steam flow rates.

Hardware includes: New 5 stage rotor, new diaphragms, generator and governor end gland steam packing sets, interstage packing sets, T1 and T2 axial aligning journal bearings, one high capacity active thrust bearing and one high capacity inactive thrust bearing, with directed lubrication and temperature sensors. The machine is set up for mounting five Bently Nevada XL-8mm proximity probes. Also included in the sale package are: turbine casing testing, final turbine assembly check, preparation and compilation of all material certifications, test reports and QA documents. The complete package (rotor, diaphragms, seals, and casings) can be prepared for ocean transport with appropriate preservation for short-term storage.

Turbine current delivery date is 3-4 months after a purchase agreement is established, ex-works Houston, TX, USA. Please contact info@ram-power.com for further information.

Geothermal Resources Development Account, California Energy Commission (February 24)

The Geothermal Program is opening a new funding opportunity through its Geothermal Resources Development Account (GRDA) Program. The overall purpose of the Geothermal Solicitation is to cost share and promote the development of geothermal resources and technologies. Funding up to $6.8 million total is available to fund GRDA grant projects. There are no minimum or maximum funding levels.

Match share contributions are required. Private For-Profit Entities must provide a match contribution of at least 50 percent of the overall project cost. Local Jurisdictions must provide a match contribution of at least 20 percent of the overall project cost. Private entities and local jurisdictions may apply for cost share funding. Eligible private entities include individuals and organizations engaged in the exploration and development of geothermal energy for profit.

Local jurisdictions include cities, counties, any unit of Indian government, school districts and special districts including, but not limited to, regional planning agencies and public utility districts, or any combination thereof formed for the joint exercise of any power. Other entities, such as universities, national laboratories, state and

federal agencies, and not-for-profit organizations, may participate in this program only in partnership with an eligible local jurisdiction or eligible private for-profit entity.

California business entities as well as non-California business entities conducting intrastate business in California are required to register and be in good standing with the California Secretary of State to enter into an Agreement with the Energy Commission. For more information contact the Secretary of State at www.ss.ca.gov.

Project durations cannot exceed 36 months from date of funding. All projects must be located in California.

Applicants are required to submit both a Pre-Application and Final Application to be eligible for funding. The Application due dates are: Pre-Application: February 24, 2011, 4:00 p.m., Final Application: April 6, 2011, 4:00 p.m. Electronic copies of documents and forms related to this solicitation can be accessed at www.energy.ca.gov/contracts.

Alaska Fairbanks North Star Borough Offers $1M Matched-Funds Grant

Alaska's Fairbanks North Star Borough is putting out a $1 million grant through the Department of Energy for geothermal energy exploration for the proposal venture that can provide matching funds. Former Mayor Jim Whitaker initiated the request based on positive results of deep well testing 50 years ago. Luke Hopkins, Mayor of Fairbanks North Star Borough said researchers at the University of Alaska Fairbanks have shown interest. The goal is to find out whether the university's existing power plant could be replaced with a geothermal power plant.
See http://www.azocleantech.com/details.asp?newsID=12786
Fairbanks North Star Borough http://www.co.fairbanks.ak.us/
PDF: http://co.fairbanks.ak.us/Meetings/Ordinances/2010/2010-20-1o.pdf

Partner Sought for Hot Oil and Gas Wells, Mississippi

Rich McAdoo (rlmcadoo@continentalenergy.com) is seeking local operators or parties with access to properties with hot oil or gas wells (shut-in or production) located in Mississippi. If you are looking for a financial and technical partner to develop coproduction of geothermal fluids with oil and gas in Mississippi, send him an email.

Events

Happening This Week

Renewable Energy and Energy Efficiency Advisory Committee, Department of Commerce (March 1)

Renewable Energy and Energy Efficiency Advisory Committee is on March 1, 2011 from 8:30-3:30 at:
US Department of Commerce, 1401 Constitution Ave, NW, Room 1412, Washington, DC 20230

The meeting is open to the public and there will be a period for public comment. Any member of the public may submit pertinent written comments concerning the RE&EEAC's affairs at any time before or after the meeting. Comments may be submitted to brian.ohanlon@trade.gov or to the Renewable Energy and Energy Efficiency Advisory Committee, Office of Energy and Environmental Technologies Industries (OEEI), International Trade Administration, Room 4830, 1401 Constitution Avenue, NW., Washington, DC 20230. To be considered during the meeting, comments must be received no later than 5 p.m. EST on Thursday, February 24, 2011, to ensure transmission to the Committee prior to the meeting. Comments received after that date will be distributed to the members but may not be considered at the meeting.

See http://www.federalregister.gov/articles/2011/02/11/2011-3095/renewable-energy-and-energy-efficiency-advisory-committee#p-9
National Export Initiative: http://www.export.gov/nei/index.asp
Renewable Energy and Energy Efficiency: http://www.export.gov/reee/index.asp

New This Week

Geothermal Reporter Training, ONRR, Reno NV (May 10-12, tentative)

ONRR (formerly MMS) is planning a Geothermal Reporter Training, possibly for Reno, later this spring.
Contact Leona Reilly, Minerals Revenue Analyst, Office of Natural Resource Revenue
303.231.3024 Fax 303.445.4245
leona.reilly@onrr.gov

Information on BLM-Nevada Competitive Geothermal Lease Sale (March 22)

From BLM: The Nevada State Office is holding a competitive oral sale of Federal lands in the State of Nevada for geothermal leasing. Attached is a list that includes the parcel numbers, legal land descriptions and corresponding stipulations, if applicable.

The list is available on the Internet at: http://www.blm.gov/nv/st/en/prog/minerals/leasable_minerals/geothermal0.html. If the site is not accessible, you may request a paper copy from the Information Access Center by calling (775) 861-6500 between the hours of 7:30 a.m. and 4:30 p.m.

When and where will the sale take place?
When: The competitive sale begins at 9:00 a.m. on March 22, 2011. The sale room opens at 8:00 a.m. for registration and assignment of bidder numbers.
Where: We will hold the sale at the Bureau of Land Management, Nevada State Office, 1340 Financial Boulevard, Reno, Nevada. Onsite parking is available.
Access: The sale room is accessible to persons with disabilities. If you need a sign language interpreter or materials in an alternate format, please tell us no later than one week before the sale. You may contact Irene Hoiby at (775) 861-6641.

How do I register as a bidder?
All bidders are required to register prior to the sale. Before the sale starts, you must complete a bidder registration form and present a photo identification card to obtain a bidding number. We will register bidders from 8:00 a.m. until 8:45 a.m. No bidder registration is allowed once the sale has started. We are now accepting pre-registration by mail or fax by completing the enclosed bidder registration form and mailing to the above address or faxing to (775) 861-6710. On the day of the sale, pre-registered bidders must present a photo identification card to receive a bidder number. A bidder number will be assigned at the completion of registration. Interested parties who will not be bidding are not required to register. Interested parties are welcome to observe the sale, however, if seating becomes limited, bidders will be given seating preference.

GEA Events

Calendar of 2011 GEA and GEA-Sponsored Events

Look for more information on these upcoming events at http://geo-energy.org/events.aspx.
For sponsorship and speaking opportunities, or if you have other questions, contact Kathy Kent at Kathy@geo-energy.org.

- March 7-10: Renewable Energy World North America Conference and Expo, Tampa, FL
- March 8: REW-NA Conference Workshop, Geothermal Energy 201 and Geothermal in the Southeastern U.S., Tampa, FL
- May 4: GEA Geothermal Energy Showcase and International Forum, Washington, DC
- August 17: GEA National Geothermal Summit, Reno, NV
- October 23–26: GEA Geothermal Energy Expo® and GRC Annual Meeting 2011, San Diego, CA

CGEC Events Announced for Spring 2011

April 7, 2011: California Geothermal Energy Collaborative, Education and Outreach Workshop for the public, Davis, CA

May 26-27, 2011: California Geothermal Energy Collaborative Summit, Mammoth Lakes, CA

See http://cgec.ucdavis.edu/

Renewable Energy World North America 2011, Tampa, FL (March 8–10)

Renewable Energy World Conference & Expo North America has been the event leading the way for the renewable industry for eight years. Three sessions for the Geothermal Track will be chaired by the Geothermal Energy Association:

Session: MARKET TRENDS, POLICIES & FINANCE – PANEL DISCUSSION

Date: March 9, 2011

Time: 9:30 – 11:30 AM

Chair: Karl Gawell, Geothermal Energy Association

Co-chair: Behrooz Ershaghi, Ph.D., Atlas Copco Mafi-Trench Co.

Session description: Key players in the geothermal industry discuss market trends in the geothermal industry and how new standards, government polices and the current financial markets are affecting project developments in North America.

- Sasha Jacob, Jacob Securities
- John Pierce, WSGR
- Johua Haacker, US Renewables
- Charles J. Arrigio II, Glacier Partners
- Karl Gawell, Geothermal Energy Association

Session: LOW TEMPERATURE APPLICATIONS & ADVANCEMENTS

Date: March 9, 2011

Time: 3:30 – 5:00 PM

Chair: Halley Dickey, TAS

Co-chair: Leslie Blodgett, Geothermal Energy Association

Session description: Current low temperature geothermal technologies combine power generation with other revenue-producing scenarios integrated in new and exciting ways to expand geothermal power project development and smaller scale development possibilities

The Potential of Oil and Gas/Geothermal Co-Production in Florida, Robert Hunt, Linear Power Ltd.

Using Binary Power Generation in the Oil Field Makes “Cents,” Robert Klenner, Dr. Will Gosnold, Kirtipal Barse and Mark McDonald, University of North Dakota

Geothermal Air Conditioning: Closed Loop or Open Loop?, Theron Jay Egg, EggGeothermal

Modeling a Direct Expansion Geothermal Heat Pump Using Carbon Dioxide in a Transcritical Cycle, Brian Austin, North Dakota State University; Dr. K. Sumathy
Powerverde Gas Expansion and Gas Pressure Motors, Stephen McKnight, PowerVerde Inc.

Session: POWER INNOVATIONS AND NEW DEVELOPMENTS
Date: March 10, 2011
Time: 9:00 – 10:30 AM
Chair: Behrooz Ershaghi, Ph.D., Atlas Copco Mafi-Trench Co.
Co-chair: Halley Dickey, TAS
Session description: Geothermal energy's benefit as a baseload renewable resource as well as a geologically-derived resource means it offers innovative opportunities for applications that expand baseload utility-scale power development, increase resources conversion efficiency and offer more dynamic load support to the utilities.
A CO2 Sequestering Geothermal Power Plant with a Negative Carbon Footprint, Martin Saar and Jimmy Randolph, University of Minnesota (invited)
Full Throttle in Nicaragua: The San Jacinto-Tizate Geothermal Project, Chun Chin, Kevin Wallace and Marshall Ralph, POWER Engineers Inc.; Mike Long, Ram Power; William Harvey, Reykjavik University
Acoustic Image Surveys of Naturally Fractured Resources in Extremely Hostile Downhole Environments (250C+) in Australia and New Zealand, Brennan Campbell and Peter Mercure, Tiger Energy Services
Deep Drilling for Geothermal in England and Germany and its Potential in the U.S., Robert Hunt, Linear Power Ltd.
Innovative Conversion Technology at Bald Mountain, California, Shuman Moore, Oski Energy

For full conference details and to register, visit http://www.renewableenergyworld-events.com/index.html.
Geothermal Preconference Workshop details: http://geo-energy.org/events/REWConference.aspx

REWNA/GEA Preconference Workshop: Geothermal Energy 201 and Geothermal in the Southeastern U.S., Tampa, FL (March 8)

As part of the preconference workshops at Renewable Energy World North America 2011, GEA along with the Geothermal Resource Group, POWER Engineers, Texas A&M University, and Gulf Coast Green Energy will hold a half-day workshop providing a basic overview of the geothermal industry and emerging technologies. The workshop will open with a 101 background including the elements of geothermal energy, market trends, and a status of the geothermal industry in the U.S. provided by the GEA. Our section on drilling is adapted from the Geothermal Resource Group's 3-day geothermal drilling course, which has been delivered to geothermal operating companies around the world and focuses on how geothermal drilling differs from oil and gas drilling. POWER Engineers will cover above-ground components of flash and binary cycles, including the steam gathering, two phase flow, separation systems, turbines, cooling systems, extraction, and electrical development. Texas A&M's GPRI Department of Petroleum Engineering will discuss the oil and gas well brine management,

including potential for re-use and related reservoir issues. The course will conclude with instruction from Gulf Coast Green Energy on low-temperature technologies, including a case study of a geothermal coproduction project taking place in the southeastern U.S.

Instructors:
• Karl Gawell, Executive Director, Geothermal Energy Association
• Bill Rickard, President, Geothermal Resource Group
• Kevin Wallace Senior Project Manager and Renewables Market Manager, POWER Engineers
• Susanne Vaughan, Austin Energy
• Loy Sneary, President/CEO, Gulf Coast Green Energy

Contact: Leslie Blodgett, leslie@geo-energy.org.
See http://geo-energy.org/events/REWConference.aspx

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.

Other Events

Geothermal Heat Pump Training (Various Dates)

Accredited Geothermal Installer Certification -- Offered in partnership with the International Ground Source Heat Pump Association (IGSHPA). Those who pass the open book exam become IGSHPA Accredited Geothermal Installers. Course also includes a hands-on pipe fusion training and certificate. For dates see: https://www.heatspring.com/?id=geothermal_training

BLM Announces Geothermal Lease Sale (March 22)

Next Lease Sale date: March 22, 2011

An Overview of Geothermal Energy, AAPG 2011 Annual Convention & Exhibition, Houston, Texas (April 10)

This year the Energy & Minerals Division of the American Association Petroleum Geologists will hold a Pre-Convention Short Course on geothermal energy at the AAPG 2011 Annual Convention & Exhibition. The course is focused on geothermal in the oil/gas producing states and the O&G industry in general. Date: Sunday, 10 April. Time: 8:00 a.m. –5:00 p.m. Fee: Professionals $200, students $100 (limited). Information and updates at: www.AAPG.org/Houston2011

Geothermal Energy Utilization Associated with Oil and Gas Development, SMU Geothermal Laboratory, Dallas, TX (June 13–15)

http://smu.edu/geothermal/

CanGEA Events (September and November)

September 14th, 2011 - Toronto, ON, Geothermal Investment Forum and Networking Event
November 9th, 2011 – Calgary, AB, Geothermal Power Forum and Networking Event

---

GEOTHERMAL ENERGY WEEKLY
A newsletter for the geothermal industry written by Leslie Blodgett and Karl Gawell

209 Pennsylvania Avenue SE, Washington, D.C. 20003
Phone 202-454-5261 Fax 202-454-5265
leslie@geo-energy.org