

Texas Geothermal Working Group Newsletter

Summer 2006



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*Enthusiastically increasing public awareness
of geothermal energy through outreach and networking.*

There are many new names in the Texas Geothermal Working Group database, Welcome! We already have over 550 names as part of the networking program. The SMU Geothermal Lab received a grant in March 2005 from the Texas State Energy Conservation Office (SECO) for geothermal outreach and networking, under the Department of Energy GeoPowering the West program. This newsletter is part of the program. The program goal is to increase geothermal awareness among Texas citizens and develop additional geothermal projects in Texas

Through creating a Texas Geothermal Working Group of individuals, companies, schools, organizations, etc., we are focusing on the advancement of all aspects of geothermal: ground source heat pumps (GSHP), direct use, and electrical generation from oil/gas wells or geopressure. Consumers in Texas are looking for improved energy efficiency. Geothermal energy has the ability to meet that need through energy reduction in buildings and increased production of renewable electricity to the grid. Thus it saves on consumer energy costs, while becoming a significant component of the state's renewable energy portfolio.

The Texas Geothermal Working Group held the first Texas Geothermal Meeting in November 2005, highlighting individuals in the field to showcase the potential in Texas for the development of geothermal energy. Direct use of geothermal water is currently the area with the least amount of project consideration in the state, although there is much potential in the areas of greenhouse, aquaculture, and heating applications. On the opposite side is the GSHP industry with much more enthusiasm and experience than initially realized. Converting the waste fluids from oil/gas wells is a new concept being researched, but is expected to positively impact the Texas energy industry. Presentations from last year's meeting are online for downloading.

This year's Texas Annual Geothermal Meeting will be in conjunction with the Texas Renewable's Conference in Austin, November 13-14, 2006. The goal of this meeting for geothermal is to develop a strategic plan, expand the resource knowledge base, and broaden the outreach program. Rather than having speakers there will be three specific sessions for those interested in geothermal to work together on focused topics. Registration information will be sent out in early Fall, as well as posted on our website.

As a diverse Working Group, it is helpful to know what information you would like to have. Please feel free to email or call Maria Richards with suggestions and requests. Send Maria your email address for future online updates.

The Right Climate By Greg and Robin Gillian

As a nation of "super-consumers" we have the responsibility to explore alternative sources of fuel for all applications, but we often overlook existing answers in favor of searching for the next best thing. One need only to turn on the nightly news to be inundated with critical concerns both political and environmental due to our reliance on fossil fuels. The climate seems to be optimal for increasing information to the average consumer about household and commercial uses for geothermal technologies.

There is the story of a little girl on the beach facing the enormous task of attempting to help a school of stranded starfish. Her reliance on saving only one starfish at a time may be the lesson we need to remember in improving consumer access to the benefits of geothermal application for heating, cooling, domestic water and more. Geothermal systems - GSHP - are the most environmentally friendly way to heat and cool a home according to the Department of Energy and the EPA. Because there is no burning of fossil fuel, they emit no air pollutants. In fact the savings in the power plant electrical production from currently installed GSHP units in the United States is estimated to be nearly eight billion kWh or forty trillion BTUs of fossil fuels annually based on more than one million installed units (per the *Geothermal Heat Pump Consortium, Inc.*). That's in addition to the benefit of reduced energy cost for consumers!

Clearly we are only beginning to tap into the possibility of reducing our reliance on nonrenewable sources of energy. Now, more than ever, the climate is right to educate ones self as well as consumers about the possibilities of savings through a GSHP. For further information on geothermal heat pumps contact *Geothermal Heat Pump Consortium, Inc.* (www.geoexchange.org) or Quality Air Conditioning in Tyler, TX - Greg Gillian, Owner/CEO.



Texas Geothermal Fact Sheet

Texas now has its very own Geothermal Fact Sheet. You can download it at http://www.eere.energy.gov/geothermal/gpw/fact_sheets.html. This is an overview of the history and present day use of geothermal. The document will be updated as we develop more Geothermal projects.

Do you know how many and of what size GSHP units your company has installed in Texas? The SMU Geothermal Lab would like to know, so we can start estimating how much energy savings Texas receives through their usage.

Geothermal Industry Group Applauds House Resources Committee Bill

“We applaud the House Resources Committee for including in its new energy legislation provisions to help bring into production two currently untapped geothermal resources – geopressured gas deposits and co-production from oil and gas fields,” commented Karl Gawell, Executive Director of the Geothermal Energy Assn. (GEA).

The legislation, HR 4761, the Deep Ocean Energy Resource Act, was approved Wednesday June 21st by the House Resources Committee. Section 26 of the bill directs the Secretary of the Interior to support innovative technologies to demonstrate geothermal production from these resources.

“Today we are using less than one tenth of one percent of our nation’s geothermal potential,” Gawell noted. “This bill will help reduce energy imports by using more of our largely untapped geothermal resources,” he said.

The House Resource Committee bill makes the following findings:

(A) Vast quantities of geothermal hot water ranging from 150 to 300 °F are created during oil /gas production.

(B) The United States has more than 10,000 megawatts of potential oil/gas geothermal electrical power.

(C) There are currently more than 500,000 oil and gas wells in the U.S., many of which are unprofitable.

(D) The use of geothermal hot water or geopressure (or both) to produce a renewable source of electrical power at oil/gas well sites could extend the life of many of these known assets.

(E) There are significant environmental, energy efficiency, climate change, and other benefits associated with the development of geothermal oil/gas electrical power.

(F) Focusing on extending the life of existing oil/gas wells enhances energy security while minimizing cost and risk and maximizing potential benefits.

(G) New power generation technology systems have been developed that could transform geothermal hot water at oil/gas well sites into electrical power, but these systems need to be tested in real world operating conditions to validate the technology and its potential benefits.

Article from GEA online newsletter (www.geo-energy.org)
Karl Gawell , Geothermal Energy Association
Tel: (202) 454-5261 karl@geo-energy.org

Thanks to the many individuals in the Texas Geothermal Working Group who sent letters to the House and Senate encouraging them to vote for geothermal energy this Spring. When you get a chance to communicate with a representative, keep educating them about the advantages of geothermal energy. The funding is still not all approved.

Highlighted Members:

Doyle Brewington

Power Tube Inc. has just been assigned a new patent number 7,013,645 B2 for The Prometheus, a device engineered and designed by Doyle W. Brewington, CTO of the Houston based company. The device converts pressure and heat contained in the flow of oil/gas resources from deep offshore platforms to mechanical energy which drive pumps for electrical energy to power machinery, and distillation of sea water for potable use.

Recent tests on another product -Thermal Riser, a device used with the Power Tube, were successful. The oil well used is about 5,000 ft deep, with temperatures of 350°F. The preliminary design transferred sufficient heat temperature through the closed circuit design to produce 4.8 MWe at the surface. The Power Tube is a vertical installation device which converts heat energy to electricity without pollution, using a specially designed downhole turbine that functions at 250+°F. The thermal riser is an extension of the Power Tube heat exchanger.

Power Tube, Inc. won an Outstanding Presentation Award at the NREL 2003 Venture Competition. Congratulations!

TEL: (281) 260 0102 info@powertubeinc.com

Jarle Lillemoen

Sustain -A- Ball Geothermal Outreach

Geothermal Energy information was given out at two of Austin’s Sustain -A- Ball’s big spring events - April 22 and May 20. "The Ball" showcases the businesses, non-profit groups, and educators that contribute to the outstanding quality of life that Austin provides for its rapidly growing population. Thanks to Jarle Lillemoen, for coordinating the two information booths as an extension of the Texas Geothermal Outreach Program. The SMU Geothermal Lab sent him materials to hand out, lists of ground source heat pump installers for the area, and helped him answer participant questions. “The Ball” offers renewable solutions, in an atmosphere that only the Live Music Capitol of the World can offer. According to Jarle, “It’s a fun outdoor green living market, filled with people really wanting to learn more and to implement green living into their lives.” Jarle’s background is in Biochemistry and he is currently in two bands, so it is only fitting that he has written a song for the Geothermal Community named “Geothermal Betty”. Maybe he’ll play it for us in November at our Annual Geothermal Meeting. If you are aware of an energy event in your community, the SMU Geothermal Lab will send materials and work with you.

Dr. Jarle Lillemoen’s email:
krystall_drage@yahoo.com

Bands: Grass (www.glaxor.net) &
Groovinground (www.groovinground.com)



Earth Science Week: October 8 - 14, 2006

What a perfect opportunity for the Geothermal Community to make a difference. What is more like Earth Science than Geothermal Energy!?! Teachers and newspapers are looking for information and speakers to help them highlight this week long focus. Call your local school - Elementary through High School and ask to talk with the Earth Science teachers. Lots of ways to help a teacher ... a Geothermal Heat Pump Demonstration, a series of Math word problems related to installing a system, presentation on the Earth's temperatures and what it is like to drill a well, a materials demonstration for Shop Class, a job description of what you do and what skills you need for success in your field, ... need I say more? Contact your school this month so that the teachers (and you) have time to plan the activity.

There is a special section on our website designed for teachers with materials to support Geothermal Energy education: http://www.smu.edu/geothermal/GPW_TX/GPW_TX_Teachers.htm. The State of Texas also has a resource person for all energy types with free materials: Juline Gurasich, State Energy Conservation Office in Austin Tel: 512-936-9283 juline.gurasich@cpa.state.tx.us



New Texas Geothermal Assessment I35 - East Corridor

The increasing need for electrical power production and current high price of hydrocarbons have changed the geothermal outlook in Texas in a major way. Several methods of geothermal system development may be viable at the present time and help Texas reach its renewable energy portfolio standards. Texas has thousands of wells that reach depths where temperatures are over 225°F and some even 400°F. Some of these wells (or sites) are candidates for the exploitation of geopressed and geothermal resources.

In a new project funded by the Texas State Energy Conservation Office (SECO) starting in September, SMU Geothermal Lab will expand the knowledge base of the location and types of potential geothermal resources in the state, focusing on the area east of I35 (Dr. Richard Erdlac of the UTPB, 432-552-2442, is working on west Texas). The project goal is to develop site specific locations for geothermal electrical power production in existing Texas hydrocarbon fields, with the ultimate goal to develop specific examples for proof-of-concept tests of geothermal electrical generation in Texas.

The March SMU Conference - Geothermal Energy Generation in Oil and Gas Settings brought together individuals from many sectors of the energy industry. From the conference talks and discussions it was agreed upon that the use of "hot" waste water from existing hydrocarbon wells is a feasible electrical energy solution and the best way to jump start the process is through demonstration sites.

You too can contribute to this project by informing those connected to the Oil and Gas Industry. Tell them about our

project and pass along our contact information. SMU Geothermal Lab is looking for locations with wells having temperatures of at least 225°F and a combined water production of approximately 500 gpm of fluid. From these criteria 225 kW of electricity can be generated, which is enough energy for about 200 homes year round.

Highlight You!

Submit a press release about your business. When newspapers print stories about geothermal it benefits everyone. Your business receives free advertising, the community learns about geothermal, and Texas becomes a greener state as more people incorporate geothermal uses. If you think there is nothing to highlight, well, how about celebrating the 1st, 20th, 100th installation of GSHP units, return to a customer to see how their energy bills have changed, how about a personal profile on where geothermal has taken you. Today, stories discussing energy are great filler for the press, and geothermal certainly has much energy!

In a similar vein of thought, I received the following email from one of our GSHP installers regarding local advertising. Let me know if you have ideas that we can share with others. "Maria, you might be interested to know about our experience with advertising in the geothermal area through local press. It has fallen absolutely flat almost every time we've approached it! Our only real successes in marketing geothermal have been through word of mouth/customer references and the higher end publications, such as Texas Today. We ran a test ad, aimed at the "average" consumer, in our local paper a few months back and had not one single call - kind of crazy, no? I'm really convinced based on the travel that we've been doing as our geothermal business grew, that the enlistment of builders is the only way to get to the average consumer. Problem is, builders in our local area are very much still invested in the "good ol' boy" "that's the way we've always done it" method of doing business. We've seen excellent presentations brought to our local builder's association that fell flat because of local builders' assumptions and disinterest. Knowing that these are the types of things we face, we began to go outside the local area using our reputation with the manufacturers. The theory is, as we gain success in more metropolitan areas the word will work it's way back to the local builders and perhaps grab their attention. We really do face enormous challenges in more rural areas in gaining a foothold with anyone other than the higher-end consumer who is interested in doing his own research and seeks us out."

Fresh Start—Geothermal Consulting

Roger Sigler (P.G.) specializes in rock and/or soil classifications, and surface & subsurface geologic assessments for construction & environmental sites. Projects include geotechnical investigations, geothermal energy, groundwater control, chemical & pressure grouting, and erosion control. He previously worked for EnLink Geoenergy Services and has recently started a consulting business. 281-450-0557, rsigler@sbcglobal.net, <http://www.siglergeo.com>.

Texas Geothermal Working Group Calendar of Events

Summer NAPE (*North American Prospect Expo*)

Houston, TX August 23-24, 2006
<http://www.nape.com>

Geothermal Resources Council Annual Meeting

San Diego, CA September 10-14, 2006
<http://www.geothermal.org>

Texas Renewable Energy Roundup & Green Living Fair

Fredericksburg, TX September 22-24, 2006
<http://www.theROUNDUP.org>

Earth Science Week - October 8 - 14, 2006

In your local schools and your business
<http://www.earthsciweek.org/>

Texas Renewables '06 Conference

Austin, TX November 13-14, 2006
<http://www.TREIA.org>

NOTE: The **Annual Texas Geothermal Meeting** will be held in conjunction with the Texas Renewables '06 Conference. To participate in the planning, please contact Maria Richards 214-768-1975 or mrichard@smu.edu

Job Opening in SMU Geothermal Lab

The Geothermal Lab has a research position opening in Geothermal Energy, focusing on research related to the thermal regime of sedimentary basins and their potential for geothermal energy development. The Geothermal Laboratory has a number of programs in field terrestrial heat flow, thermal regime of hydrothermal geothermal systems, heat flow & tectonics, and geothermal energy in hydrocarbon settings. Primary responsibilities include gathering thermal data; manipulating & graphically displaying data; giving presentations to oil/gas companies & geothermal meetings; writing reports & publishing articles. Candidates must demonstrate strong communication skills with the ability to interact well with hydrocarbon geologists and engineers. Candidates need to be organized and able to work independently with minimal supervision. A PhD in Geology/Geophysics/Engineering OR a Bachelors' degree with a minimum of five years oil & gas industry experience is required. **DEADLINE TO APPLY: September 12, 2006.** Visit <http://www.smu.edu/employment> to apply or submit resume and cover letter to: Search Committee, 052832, PO Box 750232, Dallas, TX 75275. For more details contact Dr. David Blackwell 214-768-2745 or blackwel@smu.edu.

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