EMD Geothermal Committee

EMD's Geothermal Energy Committee Mid-Year Report

Richard J. Erdlac, Jr., Ph.D., P.G., Acting-Chair

November 18, 2010

Vice-Chairs:

- David Blackwell, Ph. D., (Vice-Chair: University), Southern Methodist University, TX
- Richard J. Erdlac, Jr., Ph.D., P.G., (Vice-Chair: Industry), Consultant, Midland, TX
- Tom Anderson, Ph. D.,(Vice-Chair: Government), RMOTC, Casper, WY
- TBA, (Vice-Chair: Representative of DEG)
- TBA, (Vice-Chair: Representative of DPA)

Advisory Committee:

- Paul Morgan, Ph.D., Colorado Geological Survey, Golden, CO.
- Michael D. Campbell, P.G., P.H., I2M Associates, LLC , Houston, TX.
- Steven Tischer, P.G. Arcadis , Midland, TX.
- Cenk Yardimcilar, Ankara, Turkey

Committee Activities

The Geothermal Energy Committee has had all of its positions filled along with an increase in those listed on the observing committee. Richard Erdlac is the Acting Chair while still sitting in the Industry Vice-Chair position. This is temporary as an additional individual is being sought for this Vice-Chair position. The remainder of the committee is comprised of David Blackwell (SMU) as Academic Vice-Chair, Tom Anderson (RMOTC) as Government Vice Chair, and Joel Renner as Special Consultant. The Advisory Committee is comprised of Paul Morgan of the Colorado Geological Survey, Steven Tischer of Arcadis, and Cenk Yardimcilar, a geological engineer and exploration geophysicist from Ankara, Turkey. Finally the Observing Committee is now comprised of 81 individuals from the USA, Canada, Colombia, Ghana, Brazil, Malaysia, Egypt, Nigeria, Scotland, Saudi Arabia, Iraq, Nigeria, Australia, Netherlands, England, Algeria, Wales, Indonesia, Norway, and India.

Geothermal in O&G Regions

Activities involving geothermal energy within traditional oil and gas regions are continuing. Several O&G companies that include Continental Resources (Williston Basin), Denbury

Resources, Inc. (Mississippi), and Hilcorp Energy Company (Louisiana) are continuing in towards development of co-produced geothermal energy to offset their field operating expenses. Pioneer Natural Resources is investigating the drilling of a geothermal production well in the Raton Basin for purposes of providing power for natural gas operations. Louisiana Geothermal, sister company to Jordan Oil, Louisiana Tank, and Central Crude of Lake Charles, is continuing with their project of drilling a geopressured geothermal well for utility scale electrical production. Universal GeoPower is continuing with their investigations in the Liberty County area of Texas on their geothermal project. A discussion of these activities is upcoming in an Explorer article on geothermal energy. Another company called GeoPower Texas had previously acquired geothermal leases in state lands along the Brazoria and Matagorda County shore lines. Presently their activities are unknown due to the leaving of their company president. As a result no further contact had been had with this company and no further knowledge of company activities has been acquired. Finally, Borealis Geopower in Calgary is continuing with its project in the Swan Hills area on a co-production project (see Annual Geothermal Meeting Report 2010 for more information).

On August 18-19, 2010 the Rocky Mountain Oilfield Testing Center (RMOTC) in conjunction with SMU hosted a 2-day Oil Field Symposium with discussion on geothermal from O&G wells. The first day had two field trips, a morning trip to view outcrop of reservoir rock found at the Teapot Dome field and the afternoon trip to the production field to view geothermal operations. RMOTC presently has an Ormat turbine producing around 250 kW gross from a single well. Several other turbine companies are in discussion with RMOTC about bringing their technology in to test geothermal production from various wells. The second day focused on 13 presentations related to geothermal from oil and gas regions from Texas to North Dakota. RMOTC anticipates making this an every year or every other year event.

In July 2010, the Department of Energy's Low-Temperature and Co-produced Geothermal (LTCG) Subprogram hosted a meeting of select professionals at the National Renewable Energy Laboratory in Golden, CO to discuss the low temperature ($<400^{o}$F) geothermal program for furthering its deployment nationwide. This meeting was held to focus on key priorities regarding:

- operational areas where there is the greatest opportunity for improvement,
- technology and process innovations that address the greatest opportunity for improvement, and
- research and development pathways that are most likely to facilitate high-potential technology or process innovations.

Among the various suggestions made at the NREL meeting for developing this resource was the strong opinion that the expansion of low-temperature geothermal requires the inclusion of the oil and gas industry as a critical component. The oil and gas industry brings a large pool of talented geoscience and engineering professionals, and their respective companies, with an understanding of subsurface energy production that would allow geothermal development in sedimentary basins, an unconventional arena for geothermal production, and a bigger world-wide expansion of geothermal development. The recent acquisition of GeothermEx, a comprehensive geothermal consulting and services firm active in over 50 countries, by Schlumberger suggests an increasing interest in geothermal energy as a future area of operations expansion, a potential that is now

under consideration by oil and gas exploration and production companies in many favorable areas of the world.

Other Geothermal Activities

Plans are in the works for geothermal presentations at the 2011 AAPG Annual meeting in Houston. This includes oral presentations in Theme 10: Energy and Environmental Horizons and a planned 1-day geothermal energy workshop. A general plan for the workshop has been devised and several speakers have been lined up for participating in this workshop. A date for submitting PPT presentations will be sent out once AAPG had decided to accept this planned workshop.

Also in 2001, a joint AAPG/SEG/SPE Hedberg Research Conference has been announced with a call for papers (http://www.aapg.org/education/hedberg/index.cfm). This meeting would be held in March 14-18, 2011 in Napa, CA and would be focused on 'Enhanced Geothermal Systems'. While high temperature geothermal is part of the EGS approach, low temperature geothermal as found within sedimentary basins has also been considered to be part of the EGS. Thus the conference is open to presentations related to geothermal production from traditional O&G regions of the world.

Upcoming at the end of October 2010, the Geothermal Resources Conference (GRC) is hosting its annual geothermal meeting in Sacramento, CA (http://geothermal.org/). This meeting is international in scope and covers all aspects of geothermal energy development. For the last several years there have been a number of talks given related to geothermal development in conjunction with oil and gas operations world wide.

A strong source of continuing geothermal news world wide is through the Geothermal Energy Association (GEA) (http://www.geo-energy.org/). The GEA works in conjunction with the GRC in hosting a Geothermal Energy Expo that operates in tandem with the annual GRC meeting. The GEA provides a detailed website of news and activity, and it also emails a weekly newsletter as a free service to anyone interested in this information. These newsletters are also published on their website and can be downloaded by any visitor to the website (http://www.geo-energy.org/updates.aspx).

XXX