

Geothermal Blue Ribbon Panel Report - Addendum

The Geothermal Blue Ribbon Panel Report was released for public comment from July 13 to August 5, 2011. This addendum summarizes the comments received and provides a brief response from the DOE Geothermal Technologies Program.

Summary of Comments

The Program received comments from more than 40 individuals and organizations, including more than 20 from universities and other academic organizations, more than 15 from industry, two from national laboratories, and four from outside the U.S. The individuals from academic institutions included many who participated in the National Geothermal Academy.

Many respondents agreed with the Panel's recommendation that DOE focus its research and development efforts on undiscovered hydrothermal resources and enhanced geothermal systems (EGS). A few respondents opposed investment in EGS, with one person opining that successful development of the technology requires substantially more government funding than DOE is currently investing. A couple of people (outside the geothermal industry) argued that regional reconnaissance to identify new prospects, exploration and drilling are not appropriate government roles, and should be fully funded by the industry. Others pointed to the success of previous U.S. programs providing government cost share for drilling, as well as current programs overseas. It was also suggested that the U.S. could learn from permitting processes in other countries.

Several people disagreed with the Panel's view that DOE should not invest in low temperature resources. Respondents argued that low temperature and coproduced resources represent the "low-hanging fruit" and that those systems require further cost reductions to be economical. One person felt that DOE demonstration of co-produced geothermal energy could prompt the oil industry to become more engaged in developing geothermal resources. A couple of people pointed out that the oil and gas industry has a wealth of data that would be useful for the development of sedimentary geothermal resources.

By far, the report's statement on education and workforce development received the strongest objections. Some respondents agreed that the geothermal industry is not facing a workforce shortage, while others expressed the view that many in the geothermal workforce are approaching retirement age. Others pointed out that workforce needs will increase as the industry grows, and that it would be shortsighted for DOE not to invest in education activities that would attract students to geothermal energy careers.

Program Response

The Geothermal Technologies Program acknowledges that most of the activities recommended by those who provided comments would add value to the deployment of geothermal energy in the U.S. The Program convened the Blue Ribbon Panel to identify which activities would add the most value and enable DOE to prioritize and have the greatest impact from available funds. The American Recovery and Reinvestment Act provided \$368 million for geothermal research,

development, and demonstration (RD&D) activities and enabled the Program to invest in all types of geothermal resources. The results of this investment will continue to progress over the next several years. Such broad investments, however, will not be possible with lower budgets, and it is therefore critical that the Program prioritize and focus its activities for maximum impact.

Most of the comments received in response to the Blue Ribbon Panel Report were in the areas of low temperature geothermal resources and education activities. For now, the Program plans to continue the existing low temperature projects, subject to the availability of funding. Future plans in that area will depend on appropriations levels and discussions with stakeholders. A significant portion of the Program's current RD&D effort will be consistent with the Blue Ribbon Panel recommendations, in the areas of undiscovered hydrothermal resources and enhanced geothermal systems.

In considering education activities, the Program received considerable positive feedback on the National Geothermal Academy and the student competition. We prefer that education activities be linked to R&D efforts, i.e. graduate students and post-doctoral fellows working toward geothermal technology solutions with seasoned researchers - and leveraged with funding from the industry. We therefore anticipate continuing a limited investment in education activities. As the geothermal industry grows, the Program will consider expanding education and workforce development activities.