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On March 4, 2009, the Department of Energy (DOE) released two Funding Opportunity Announcements (FOAs) for up to $84 million to support the development of Enhanced Geothermal Systems (EGS) technologies in an effort to expand geothermal power generation opportunities to a broad variety of geographic locations.

Conventional geothermal energy systems must be located near easily-accessible geothermal water resources, limiting their nationwide application. EGS technology would allow power generation in a broad variety of geographic locations. EGS makes use of available geothermal resources to heat engineered reservoirs, which can then be tapped to produce electricity.

The announced FOAs are part of the DOE's Geothermal Technologies Program (GTP), which develops innovative geothermal energy technologies to find, access, and use the Nation's geothermal resources. GTP works in partnership with industry, academia, and DOE's national laboratories to establish geothermal energy as an economically competitive contributor to the U.S. energy supply.

The FOAs will explore two specific areas: (1) component research and development/analysis; and (2) support for EGS demonstration projects.

The first FOA seeks advanced technology to address important aspects of engineered geothermal reservoir creation, management, and utilization. DOE anticipates making 20 to 30 awards for a total value of up to $35 million under this FOA, based on annual appropriations. Proposals will be evaluated based on their applicability to the program's multi-year research, development, and demonstration plan; level of technical innovation; and ability to introduce new technologies into the marketplace. Applications for this FOA are due no later than April 30, 2009.

Projects are sought to develop innovative technology for cost-effective creation, management, and utilization of EGS in reservoir environments. Projects will be evaluated based on their ability to advance technology toward ultimate, specific target specifications to drive market development of EGS. Teaming between academia, industry, and National Laboratories/Federally Funded Research and Development Centers is

encouraged.

Supporting technological improvements and overall geothermal systems analysis to establish critical energy, environmental, and economic baseline information are needed in the following topic areas: air cooling; drilling systems; high temperature downhole tools; high-volume lifting and pumping; zonal isolation; integrated chemical, thermal and hydrological modeling; image fluid flow; induced seismicity; geophysical exploration technologies; stimulation Prediction Models; geothermal analysis; smart tracers; supercritical carbon dioxide/reservoir rock chemical interactions; tracers and tracer interpretation; and working fluids for binary power plants.

The second FOA seeks domestic projects in a variety of geologic formations that will quantitatively demonstrate and validate reservoir creation techniques that sustain sufficient fluid flow and heat extraction rates for 5-7 years and that produce at least 5 MWe per year per project. DOE anticipates making 5 to 10 awards under this announcement for up to $49 million, based on annual appropriations. Applications for this FOA are due no later than May 14, 2009.

DOE will also consider projects to further characterize, stimulate, and validate underutilized geothermal resources, particularly in urban and rural regions with high electricity costs such as Alaska, Hawaii, the eastern U.S., and Indian Reservations.

Awards made under this announcement will be cooperative agreements that will include well stimulation, data collection, and analysis over three phases. These phases will have go/no-go decision points during and after Phase I; after Phase II; and during Phase III, as appropriate. Projects funded will add to the general EGS knowledge base and/or help accelerate technology improvements in order to fully commercialize unproductive or underproductive geothermal resources.
