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Scientist Says `Heat Mining' Still Holds Potential

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LOS ALAMOS — A scientist who was on Los Alamos National Laboratory's hot dry rock geothermal project more than 30 years ago says "heat mining" to generate electricity is possible.

Jefferson Tester, now the H.P. Meissner professor of chemical engineering at Massachusetts Institute of Technology, led an 18-member panel that wrote a 400-page report released last week assessing the future of geothermal energy.

The study concluded that based on growing demand for clean energy, a combined public-private investment of about $800 million to $1 billion over 15 years could deploy "enhanced geothermal systems" commercially by 2050, producing produce more than 100,000 megawatts electrical or 100 gigawatts.

Another veteran of the Los Alamos geothermal project at Fenton Hill said that's too long to wait.

"You're looking at a total energy resource that is larger than fossil and fissile (nuclear) fuels combined," said Don Brown of Los Alamos, who is working on a book about Fenton Hill with the hot dry rock project's longtime leader.

Tester said a lot was learned at Fenton Hill, a project that was designed to demonstrate that heat from the Earth's dry rock interior could be used to produce power.

The project, for example, found that deep — 15,000 feet — high-temperature wells could be completed in hard abrasive rock and that high-pressure hydraulic methods could extract energy and generate electricity over extended periods.

The U.S. Department of Energy-sponsored report was billed as the first comprehensive scientific evaluation of geothermal energy in 30 years.

The authors estimated the energy potential from geothermal sources at about 2,000 years' worth of U.S. energy consumption — and 20,000 years' worth assuming technological improvements.

The spending that the report recommends would amount to more than has been spent developing geothermal energy in the last three decades, but less than a single new-generation, clean-coal power plant.

The federal government began working at Fenton Hill in 1974, and in the mid-1990s even proposed a commercial-scale demonstration plant at the site.

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