GEOTHERMAL POTENTIAL IN THE UNITED STATES

Osman Ulug

University of Queensland
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"BBC GCSE Bitesize" http://www.bbc.co.uk/schools/gcsebitesize/science/aqa_pre_2011/energy/mainselectricityrev5.shtml
The Future of Geothermal Energy


States with Geothermal Power Production in 2011*

States with Geothermal Capacity in Development in 2011

Engineered Geothermal Systems

- EGS expands where geothermal energy can be generated significantly.
- Still several kinks to work out before it becomes economically competitive – cheaply drilling the wells, fracturing the reservoirs in a more controlled manner, generating sufficient water pressure out of the production well.

• Only 2% of the heat 3 - 10 km below the continental United States could meet 2,500 times the United States' current total energy use, using current EGS.
  • In Australia, it is estimated that 1% of that nations' thermal resource could meet 26,000 times Australia's current total energy use.

• All 50 US states have substantial thermal resources at varying depths, which can be harnessed using EGS.

• Current EGS geothermal plants being tested are Coso, Desert Peak, and Glass Mountain/Geysers-Clear Lake, all in western US near existing conventional geothermal fields. However, far less EGS work is being done in the US relative to Australia.
Advantages, Disadvantages, Conclusion

• Can be used to supply baseload energy due to its consistency (thermal resources are not affected by clouds, lack of wind, or instability in oil-producing countries).
• Does not require fuel (or sunlight or wind, for that matter).
• Also can be used residentially – many homes already have geothermal heating systems.
• High capital costs - can be reduced by government subsidies, similar to subsidies provided for other energy sources.
• Potential earthquake risk - requires more research to understand.

In conclusion, expect to see geothermal energy growth in the United States. While whether the government will increase support for geothermal energy is still up in the air, there is plenty of natural thermal resources available and improving technology to harness them.