Where the Hot Springs Blow: Geothermal Electricity

Something like 95% of the solid mass of the earth is at a temperature of 100 centigrade or more. So in a very hypothetical sense, we could provide all the electricity we need for thousands of years from this source. At the moment we have the technical ability to access a very tiny portion of that potential, and the ability to access a tiny portion of that tiny portion economically.

In the U.S., we could produce up to 22 gigawatts of capacity with today's technology[267]. However, probably only about 6.5 of those gigawatts could be produced economically. This translates into slightly less than .2 quads of electrical energy.
According to the World Bank, the levelized cost of geothermal electricity produced in large plants from plants runs from 4 to 6 cents per kWh[268]. The Public Renewables Partnership (a partnership of several DOE programs, several large utility associations, and the non-profit Center for Resource Solutions gives the price for binary plants (which can utilize lower temperature sources and are more environmentally sound) as around 5.8 cents per kWh[269]. The California Energy Commission, (which tends to be very careful, working as they do in a state Enron peeled like a banana) gives the cost as 7.37 cents per kWh[270], which we will use.

End Notes

[267] Geothermal Energy Association, *Geothermal Electric Production Potential*. 2004, Geothermal Energy Association, 22/Aug/2004 <http://www.geo-energy.org/UsResources.htm>.

[268]World Bank, *Geothermal Energy: Assessment*. 7/Sep 2000, World Bank, 22/Aug/2004 <http://www.worldbank.org/html/fpd/energy/geothermal/assessment.htm>.

[269]Roger Hill, *Public Renewables Partnership, About PRP - Geothermal:Geothermal Costs*. 10/Jun 2004, The Public Renewables Partnership, 22/Aug/2004 <http://www.repartners.org/geothermal/geocosts.htm>.

[270]California Energy Commission, *Levelized Cost of Electricity Production<*. Jan 2004, California Energy Commission, 7/Jun/2004 <http://www.energy.ca.gov/electricity/levelized_cost.html>.