

GEOHERMAL DIRECT USE

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Introduction

Enormous potential exists in the United States for geothermal direct-use and ground-source heat pumps to make a significant contribution to our national energy needs, while offsetting the use of fossil fuels. Implementation of geothermal projects will reduce gaseous emissions and acid rain from the combustion of fossil fuels that impact our environment. Geothermal direct use has practically zero emission of greenhouse-type gases and essentially no thermal pollution.

The low-to-moderate temperature (<190 to 300°F) geothermal resources base (38,900 Quads) is much more plentiful and widespread than the high-temperature (>300°F) resource base (4,800 Quads). A recent report prepared for DOE by Meridian Corporation (Meridian, 1989) compares the magnitudes of the energy resource base in the U.S. as shown in Table 1. There is nearly 20 times more geothermal energy than the energy we could derive from burning all the coal in the U.S., and 300 times the energy available in oil and gas. Geothermal energy is a domestic resource that contributes to our national energy security and decreases our trade deficit, while saving petroleum for higher priority uses.

Table 1

U.S. ENERGY RESOURCES (BBOE)*			
Energy Source	Resource Base	Accessible Resources	Energy Reserves
Coal	15,079	6,577	908.0
Biomass and Solar	178,438	101,153	—
Biomass	—	—	57.7
Geothermal	256,992	3,897	42.5
Natural Gas	294	153	39.9
Petroleum	477	190	26.9
Hydro	170	27	8.0
Uranium	203	126	7.3
Solar	—	—	3.0
Wind	176,370	960	<1
Shale Oil	27,518	2,018	<1
Peat	244	61	<1

* Billion Barrels of Oil Equivalent