

GEOHERMAL
Earth Energy Under Our Feet

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Innovation for Our Energy Future

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Geothermal— The Energy Under Our Feet

Geothermal Resource Estimates for the
United States

Bruce Green and Gerry Nix,
National Renewable Energy Laboratory

Technical Report
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Estimated Developable Resources *

	Estimated Accessible Resource (MWe)	2006 (Actual MWe)	2015 (MWe)	2025 (MWe)	2050 (MWe)
Shallow Hydrothermal¹ (Identified) >90°C/194°F	30,000	2,800	10,000	20,000	30,000
Shallow Hydrothermal¹ (Unidentified) >150°C/302°F	120,000		TBD	TBD	TBD
Co-Prod & Geo-Press²	>100,000	2 ³	10,000 to 15,000	70,000	>100,000
Deep Geothermal⁴	1,300,000 to 13,000,000	0	1000	10,000	130,000
Thermal Uses	(MWt)	(MWt)	(MWt)	(MWt)	
Direct Use⁵	>60,000	620	1600	4,200	45,000
GHP⁶	>1,000,000	7,385	18,400	66,400	>1,000,000
GHP⁶ Avoided Power	120,000	880	2,100	8,000	120,000

Opportunity #1

- Hydrothermal
- Expand Existing Production – Small and Large (Resource: 30,000 MW)
- Unidentified/Hidden Resource (Resource: 120,000 MW)

Opportunity #2

- Coproduction from Oil and Gas Fields
- Geopressured Resources

(Resource >100,000 MW)

Opportunity #3

- Deep Geothermal – Enhanced Geothermal Systems

(Resource: 1,300,000 to 13,000,000 MW)

Other Opportunities

- Direct Uses (60,000 MWt)
- Geothermal Heat Pumps (>1,000,000 MWt)
- Distributed Generation (Undefined)

Priorities for a DOE Program

- Hydrothermal – Cost-Shared Drilling/Technology Improvement Across the Board/Market Incentives (PTC-RPS)
- Hydrothermal (Hidden) – Exploration Technology/Cost-Shared Drilling
- GeoPressured – State of the Art Demonstration
- Co-Production – Resource Information/State of the Art Demonstrations
- Deep Geothermal/EGS – Develop EGS Tools with Goal of EGS Site by 2010