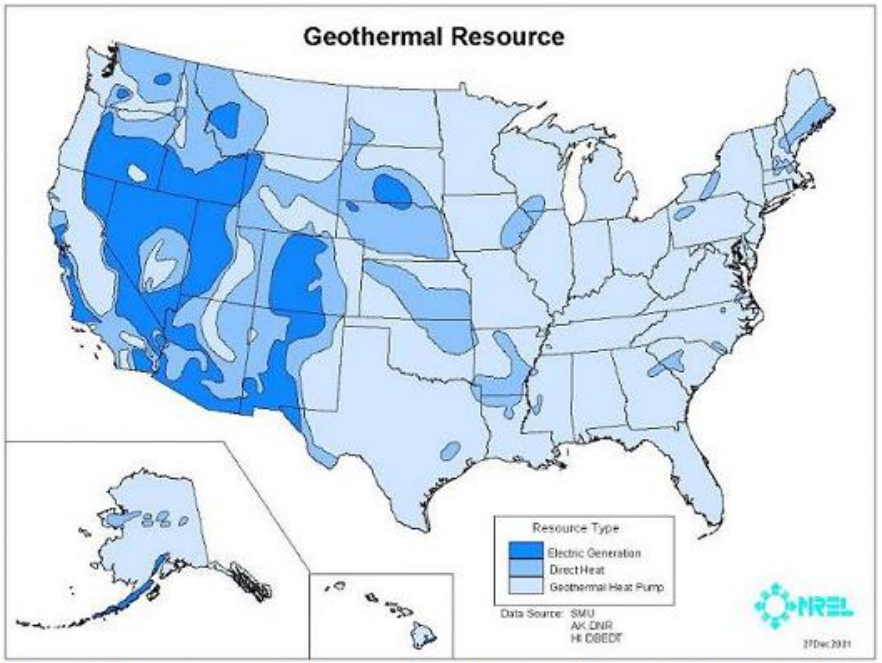
Geothermal Resources and Technologies



The net economic benefits were $35.8 billion (2008$), on the reviewed program investment of $1.4B in:

- Polycrystalline diamond compact (PDC) drill bit;
- Binary cycle power plant technology;
- TOUGH series of reservoir models;
- High-temperature geothermal well cements.

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Renewable Electricity Systems

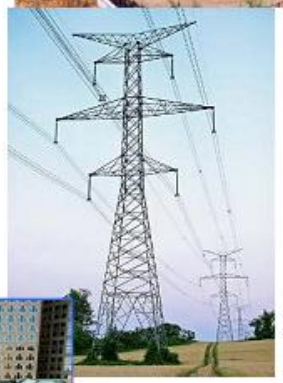
Hydropower

BioPower

Photovoltaics

Geothermal

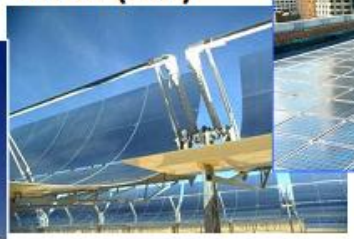
Wind



Distributed Generation
Demand Response
Distributed Storage
Smart Grid

Plug-in Hybrids

Concentrating Solar Power (CSP)



Photovoltaics

- Energy Intensity
- Site Specificity
- Variability & Uncertainty
- System Integration

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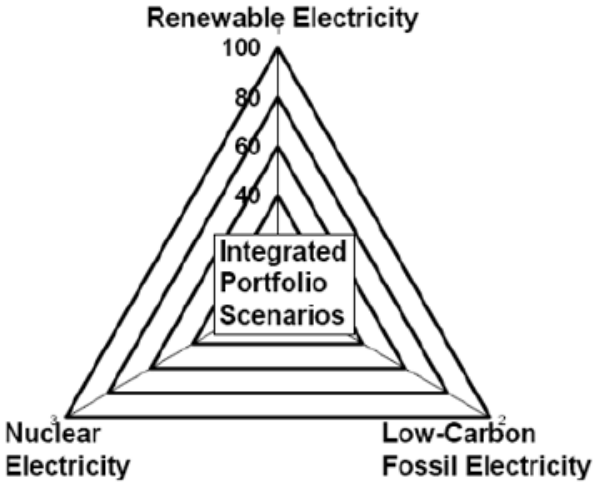
Context

- **Three primary pathways for providing clean electricity:**
  - Renewable energy;
  - Nuclear energy;
  - Fossil energy with carbon capture, utilization, and storage (CCUS).

  All will likely contribute to clean electricity needs for the foreseeable future.



- **Energy efficiency improvements in end-use sectors are a critical contributor to all these pathways**
- **This multi-pathway approach is consistent with the Administration's all-of-the-above energy strategy.**
  - In the electricity sector, this strategy is further defined by the Administration's goal of achieving 80% of electricity generation from clean electricity sources by 2035— renewables, nuclear, efficient natural gas, clean coal.