GEOTHERMAL POWER – Keep tapping into it!

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SMU | GEOTHERMAL LABORATORY

The Geysers Geothermal Power Field, CA

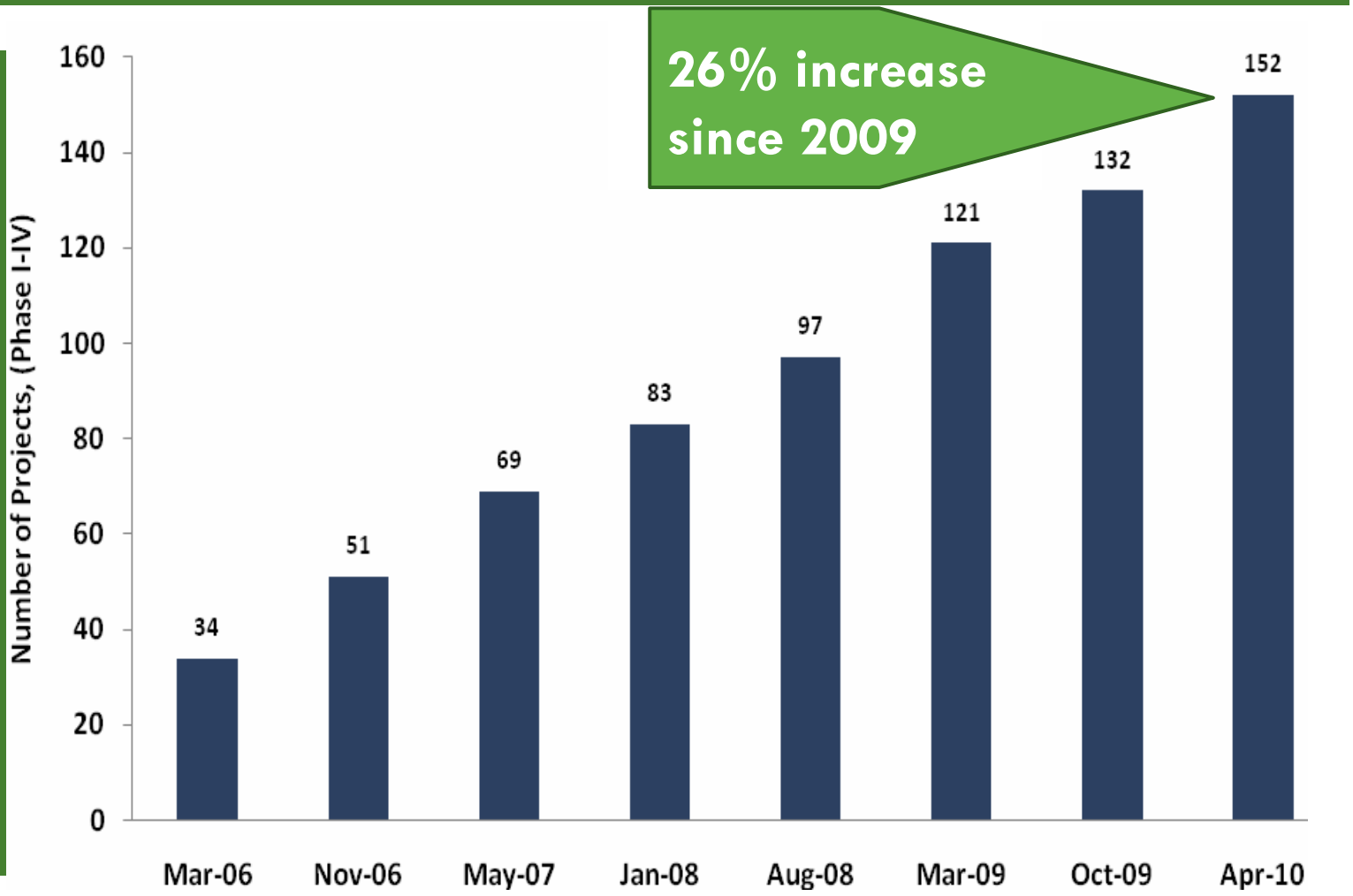
How much GEOTHERMAL Energy is Stored?

Based on SMU research for Google.org/EGS:
10 times the installed capacity of coal power plants

GEOTHERMAL ENERGY
Electrical Projects in Development

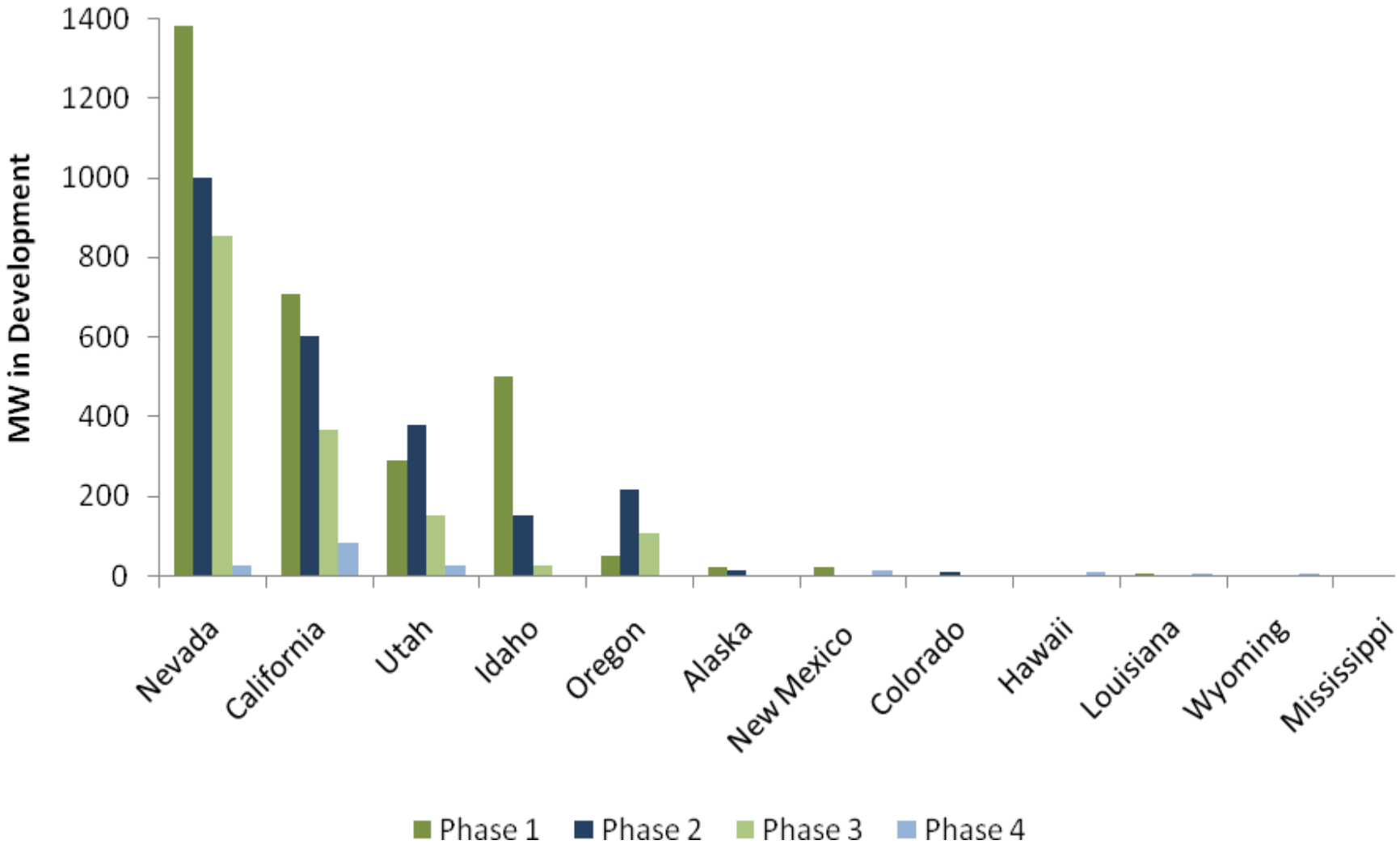
188 Projects
15 States

~5254 to 7875 MW



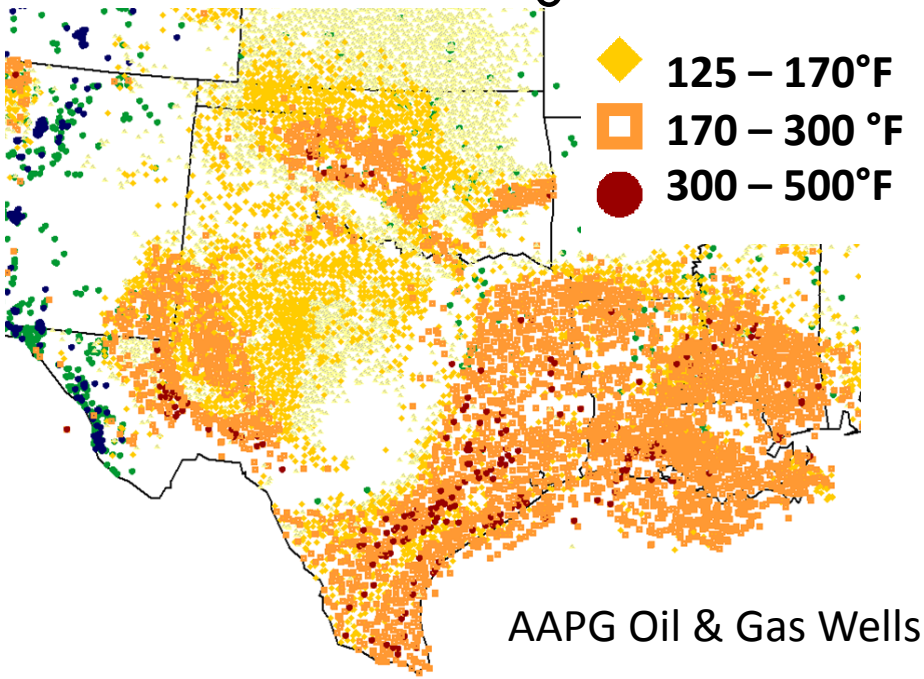
DOE – Reinhardt, 2011 SMU Geothermal Lab Conference

Where is GEOTHERMAL Electric Development ?



GEOTHERMAL ELECTRIC
GEOPRESSURE - Texas Style

- **71,000 – 170,000 EJ (10^{18} J)**
- Trapped fluids
- Elevated pressures
- Temperatures 200 to 500°F
- Dissolved natural gas



AAPG Oil & Gas Wells

Pleasant Bayou, Texas

- Demonstration power plant

  1 MW electricity

  Gas/Heat

1989-90 Geopressure plant
Brazoria, TX

COPRODUCTION
Geothermal Energy + OIL/GAS

- Hot water > 180°F (164°F Alaska)
- Byproduct of oil & gas wells
- billions bbl/yr of water produced
- Binary technology improvements
- Infrastructure already exists
- Electricity for field use or sold
- Extends the life of fields and keeps jobs in the industry

RMOTC Casper, WY
ORMAT Technology
250 kw

COPRODUCTION Demonstration

Jones CO. Mississippi
Denbury Resources - well
Gulf Coast Green Energy - RPSEA
ElectraTherm – Green Machine

Gross Power Output: 23 kW
Runtime Hours: 1,136
Hot Water Input: 204°F
Hot Water Flow: 120 GPM
Ambient Temp Range: 60-105°F

"..designed on a truck bed for simple plug-and-play at the site. "

RPSEA
Research Partnership to Secure Energy for America

Secure Energy for America

RPSEA 2011 Request For Proposals To Be Released

Small Producer Program

RPSEA is pleased to announce to its members as a member benefit that the 2011 request for proposals (RFP) for the Small Producer Program will be posted to the RPSEA website Tuesday, December 13, 2011, by the close of business (5 p.m., Central Time).

You are encouraged to submit proposals well in advance of the due date, which is February 27, 2012, 4 p.m., Central Time, to allow for electronic receipt processing. You should review the documents and instructions concerning these proposals without delay.

http: www.RPSEA.org

GEOTHERMAL RESOURCES
DIRECT-USE

611 MWth installed in Western US
Offseting 2,542 GWh annually

Thus
1) ENERGY SAVINGS
2) RURAL ECONOMIC DEVELOPMENT

Business Incubator Greenhouse,
New Mexico State University
Las Cruces, New Mexico

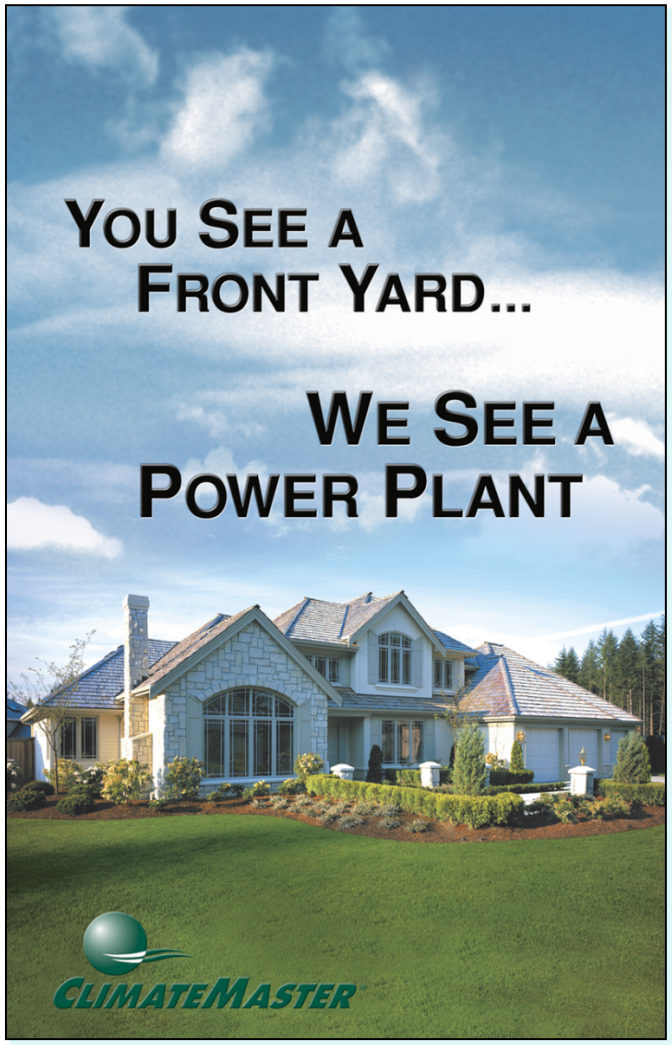
GEOTHERMAL DIRECT USE APPLICATIONS

A Variety of applications

- Space Heating
  - – 2,000+ buildings in 17 states
- District Heating
  - – 20 systems
- Greenhouse Heating
  - – 44 facilities in 9 states
- Industrial/Agricultural Drying
  - – 9 facilities in 3 states
- Aquaculture
  - – 51 sites in 11 states
- Pavement Snow Melting
  - – OR and WY

Raceway Geothermal Shrimp Farm, Gila Bend, Arizona.

WASTE HEAT & HEAT PUMPS



Don't forget the easy savings:

Offset before generating new

Use waste heat sources

Create local jobs

Save on carbon footprint