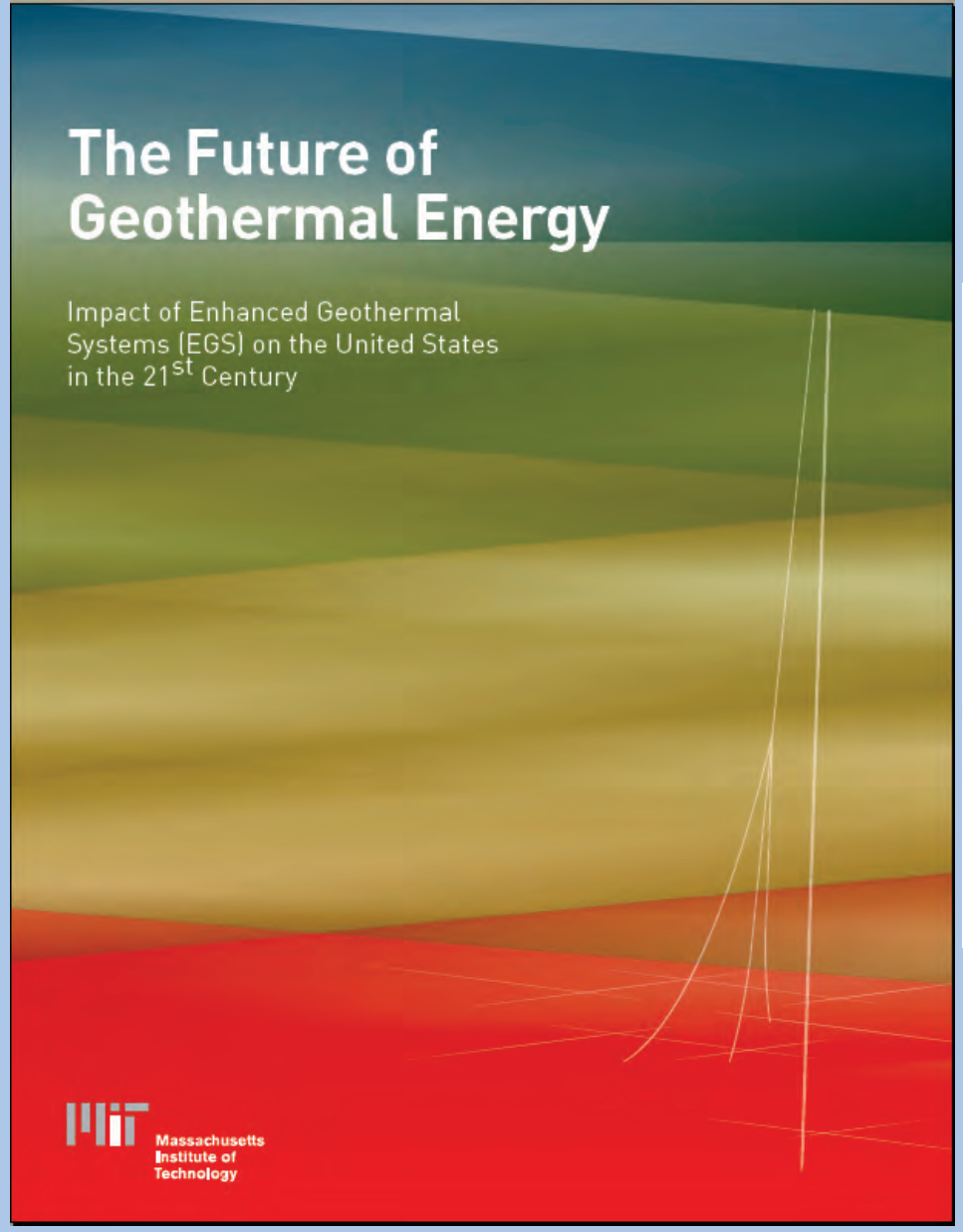
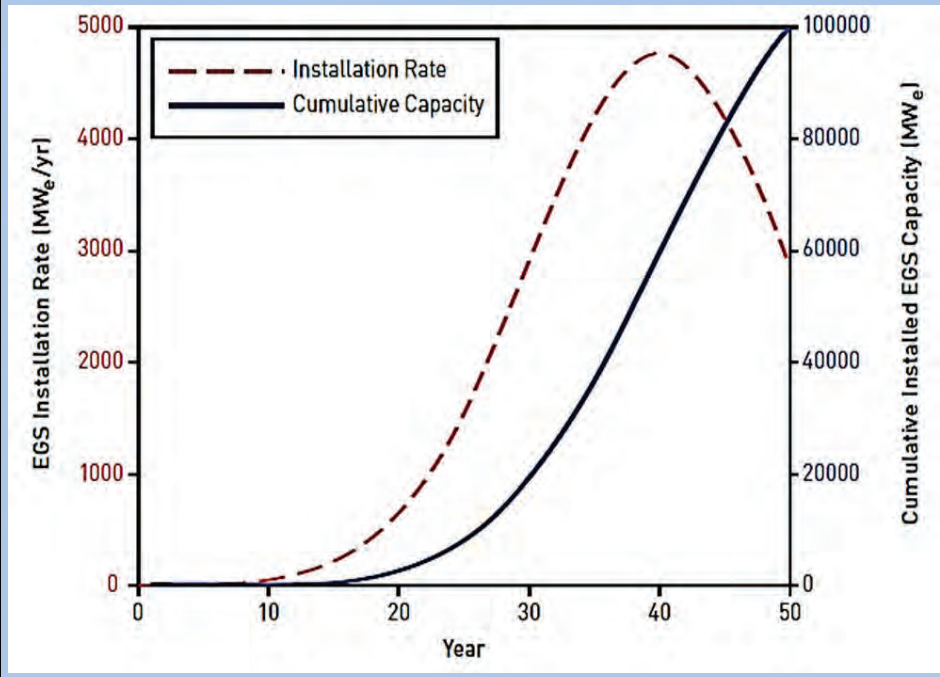




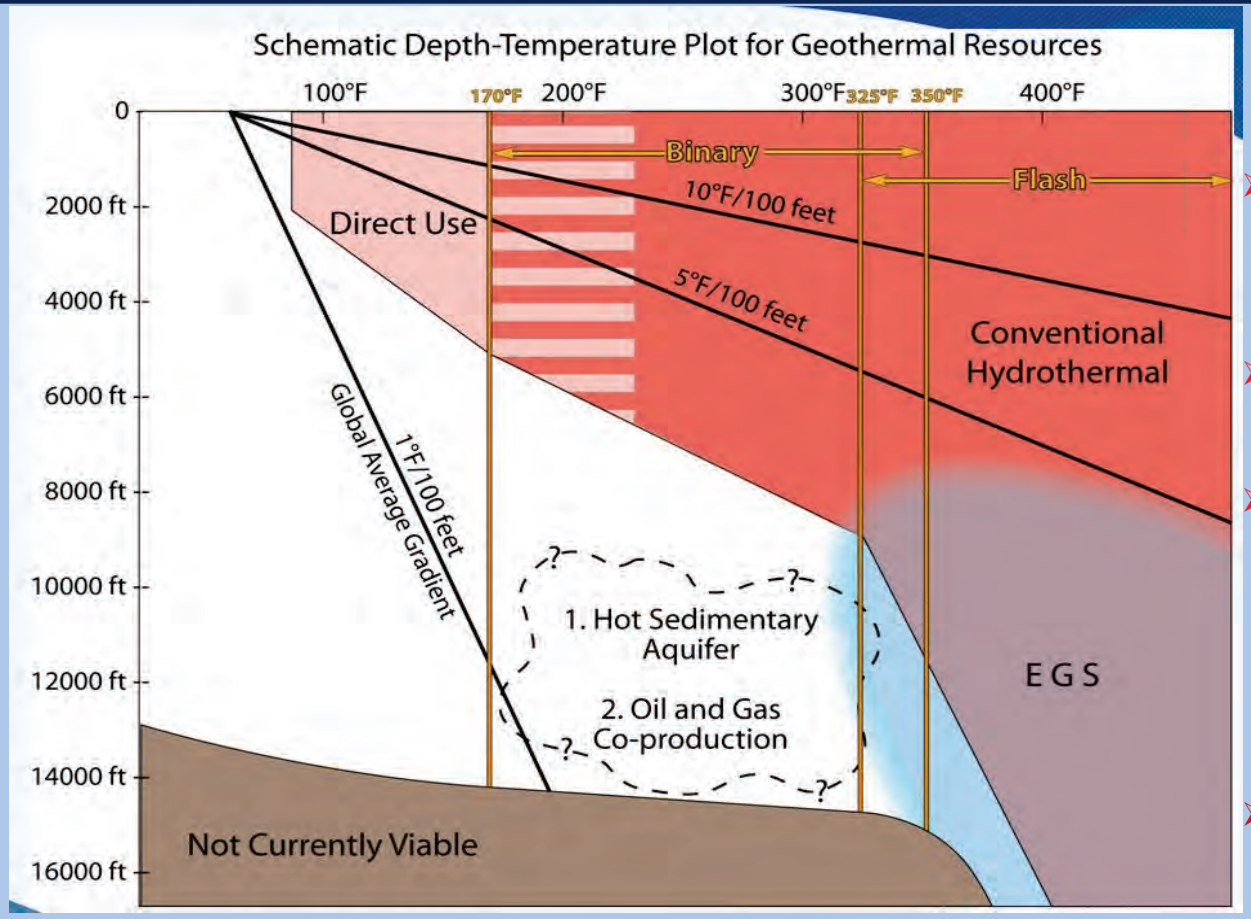
SMU | ROY M. HUFFINGTON DEPARTMENT OF EARTH SCIENCES

Tea Pot Dome, Wyoming

FORGE (egs)

IDAHO NATIONAL LABORATORY
Location: Snake River Plain, Idaho
SANDIA NATIONAL LABORATORIES
Location: Fallon, Nevada
UNIVERSITY OF UTAH
Location: Milford City, Utah
SANDIA NATIONAL LABORATORIES
Location: Coso, California
PACIFIC NORTHWEST NATIONAL LABORATORY
Location: Newberry Volcano, Oregon

Geothermal Energy Categories

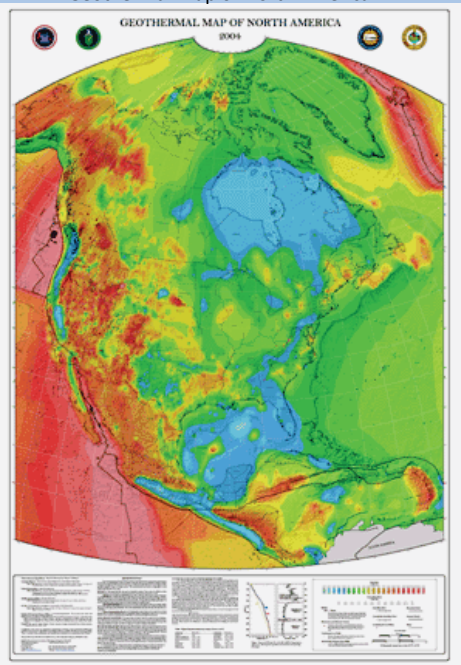


Electricity

- Binary Fluids (195-300°F)
  - Coproduction
- Hydrothermal > 300°F
- EGS > 300°F
  - Sedimentary Basin
  - Hot Dry Rock
  - largest projects
- Geopressured

Paul Brophy, DOE Webinar, 2012

Geothermal Map of North America



Timeline of Geothermal - Oil & Gas Focus

1975 Texas Geothermal Resources Act written
1989 First Geopressure power plant in the US, Brazoria County, TX

2004 SMU completes Geothermal Map of North America

2005 UTC builds prototype of PureCycle® (now under PWPS)
2005 Steve Bergman with SMU "discover" RMOTC's high fluid flow

2006 *Chena Hot Springs, Alaska* develops geothermal power (500 kw)
2006 1st SMU Geothermal Conference on Utilizing Oil & Gas Fields

2008 ORMAT Technology installs binary unit at Rocky Mtn Oilfield Testing Center, WY
2008 ElectraTherm, Inc. demonstrates Green Machine on SMU Campus in Dallas, Texas

2009 Texas H.B. 4433 Hydrocarbon Tax Exemption from Severance Oil/Gas Tax for Geothermal Wells
2009 RPSEA.org awards project to Gulf Coast Green Energy and Denbury Resource in central MS
2009 DOE Geothermal Technologies program funds projects in ND, TX, LA

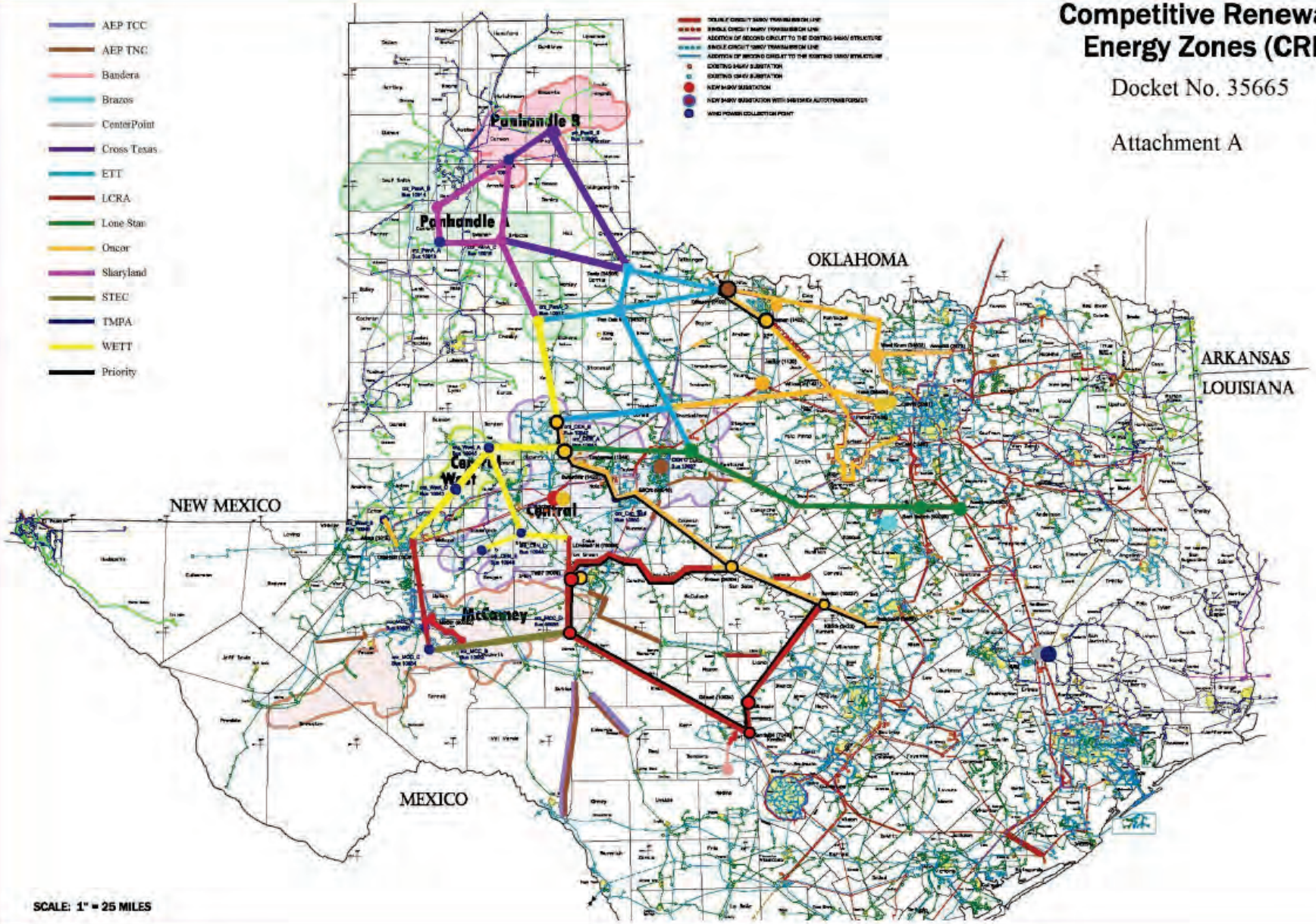
2010 Oregon Institute of Tech. powers-up with PWPS PureCycle®
2010 DOE Geothermal Low-Temperature "Road Mapping" plan established

2011 North Dakota research project compares all current binary technologies for oil field settings and presents at SMU Geothermal Conference in June.
2012 New National Geothermal Database System includes all of Texas RRC O/G data for geothermal projects.

Competitive Renewable Energy Zones (CREZ)

Docket No. 35665

Attachment A



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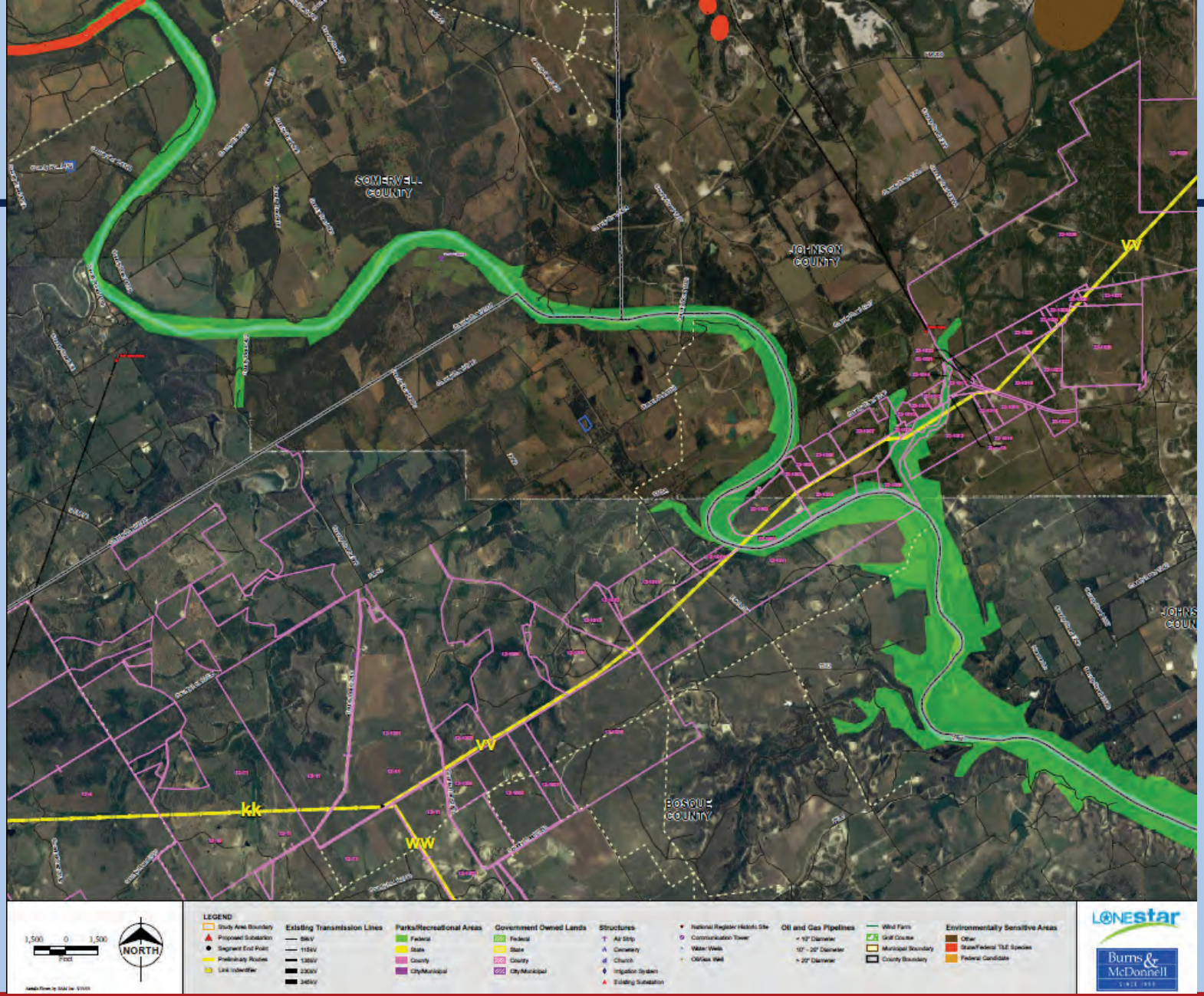

LONEstar

Burns & McDonnell

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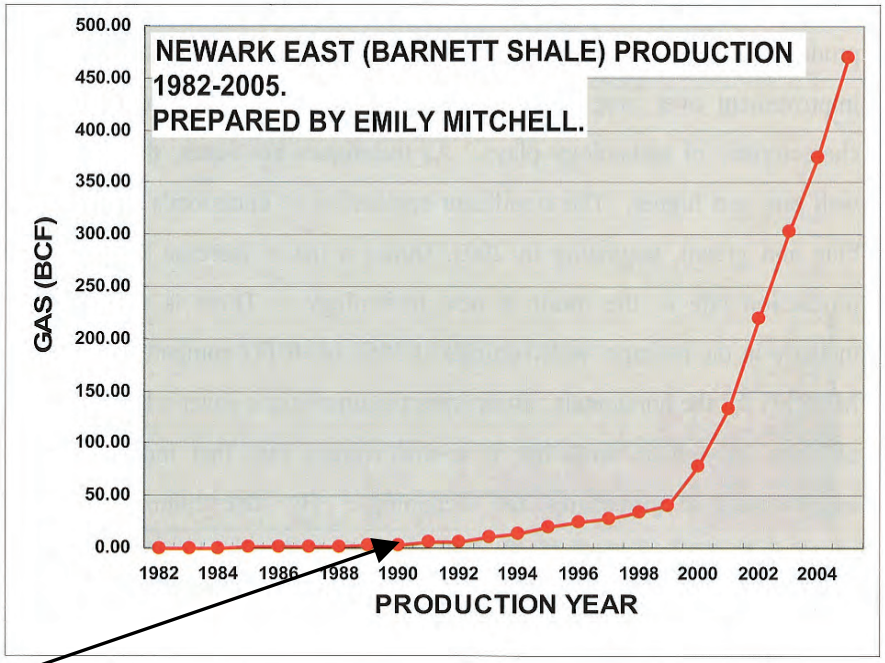
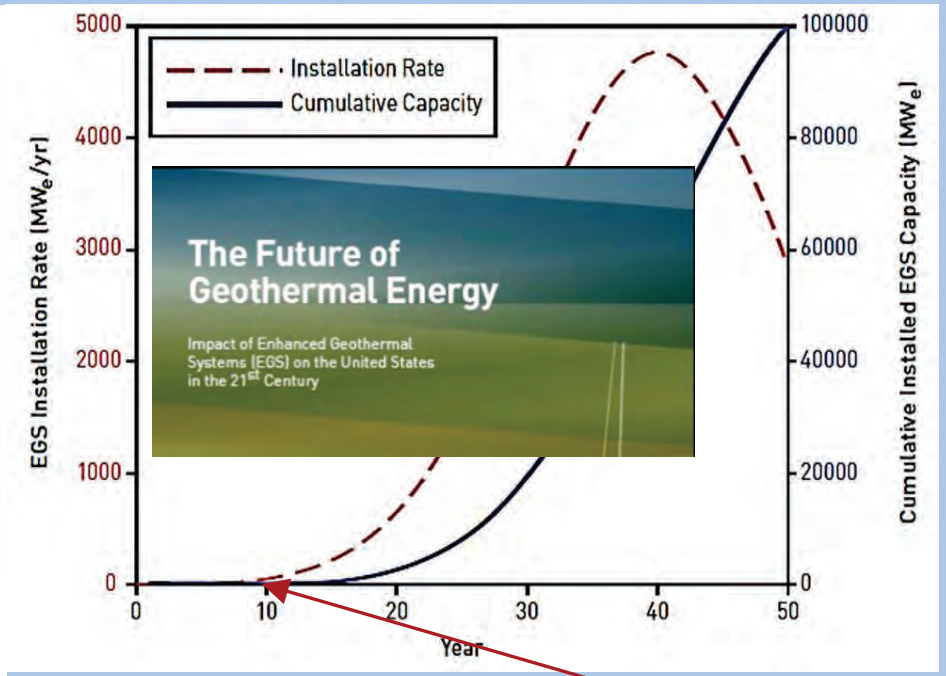
Extending the life of an oil/gas fields





Based on the shale plays

Geothermal development in O/G fields is right on target!

Currently experimental in US, Australia, Germany, & UK

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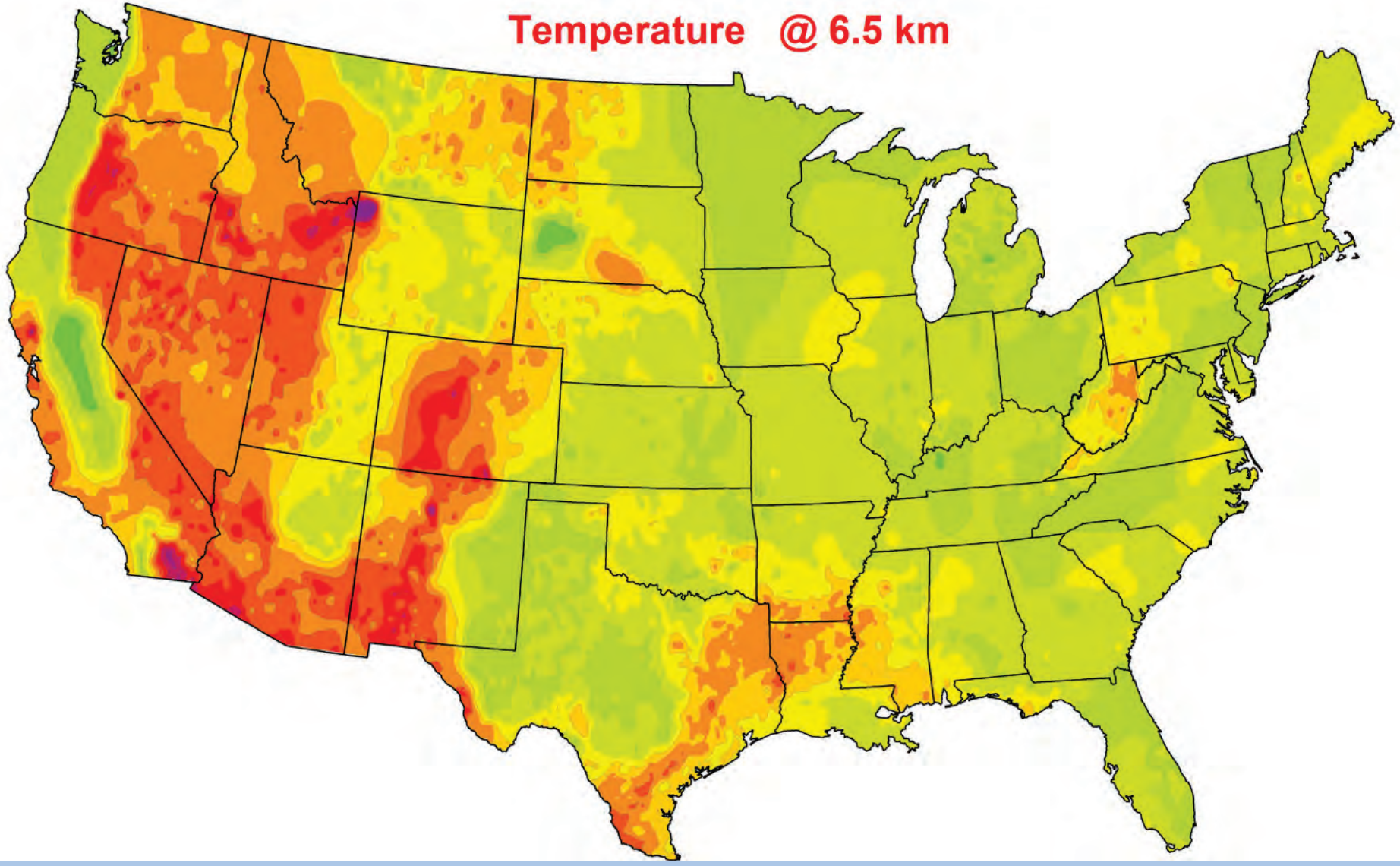

The Future is UP *to* YOU!

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