

Timothy Reinhardt  
Geothermal Technologies Program  
Office of Energy Efficiency and Renewable Energy

# Presentation Outline

‡ 3 U R J U D P ¶ V S D V W

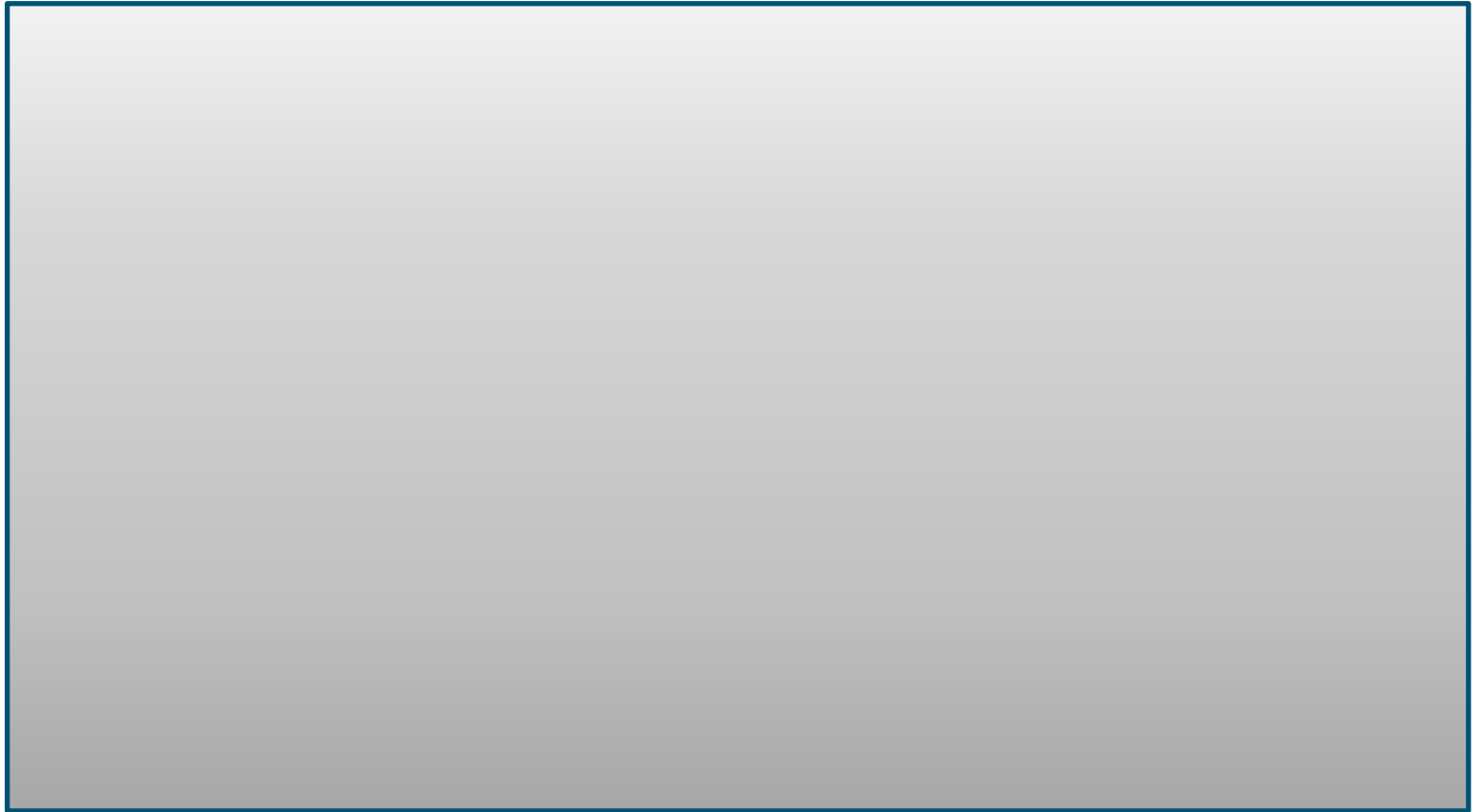
‡ Present status of ARRA projects

‡ 3 U R J U D P ¶ V Q H D U I X W X U H

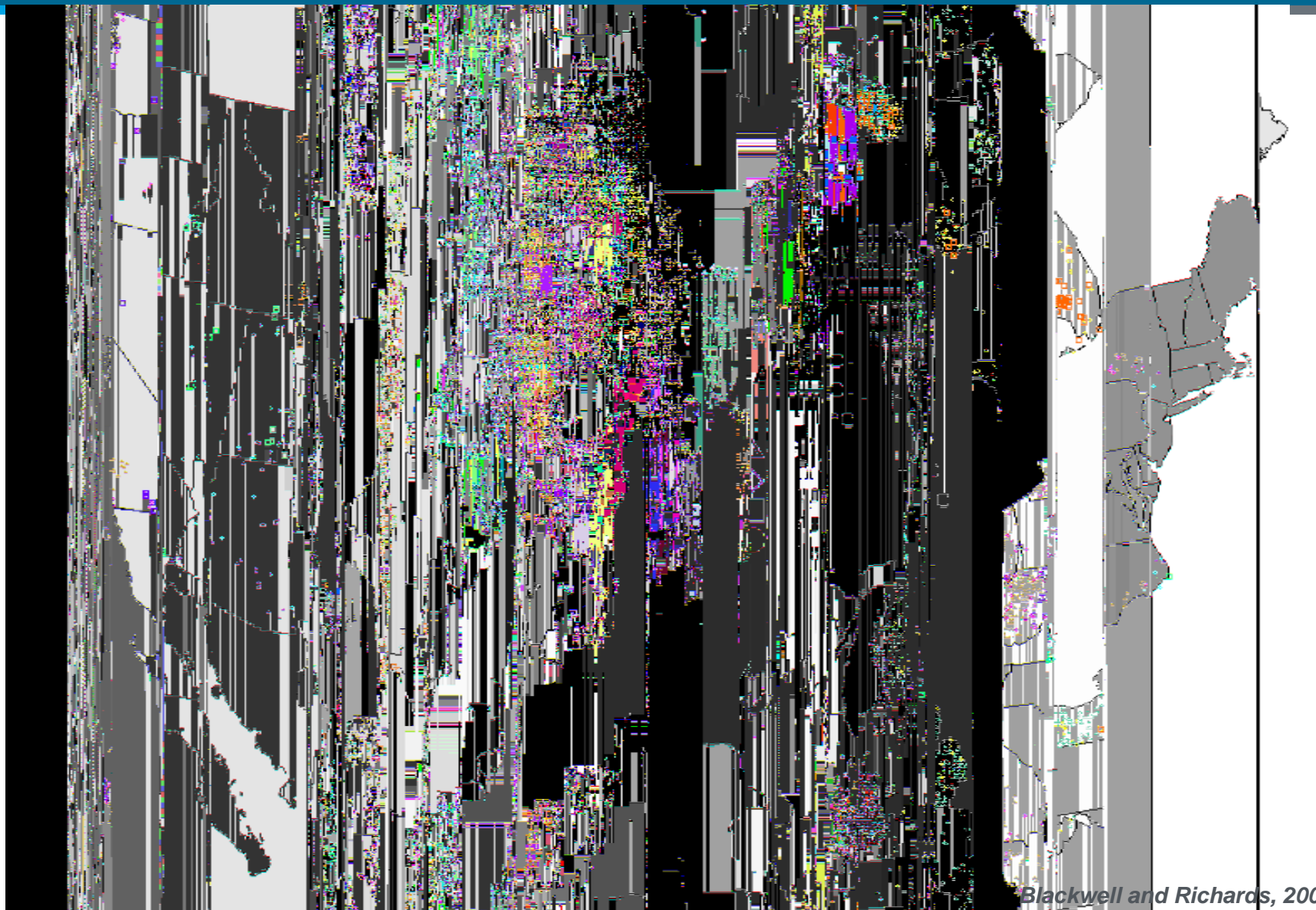


# Recovery Funding Enabled Expanded Geothermal Program Portfolio

The Program currently supports a diverse portfolio that spans near- to long-term resourctf 01



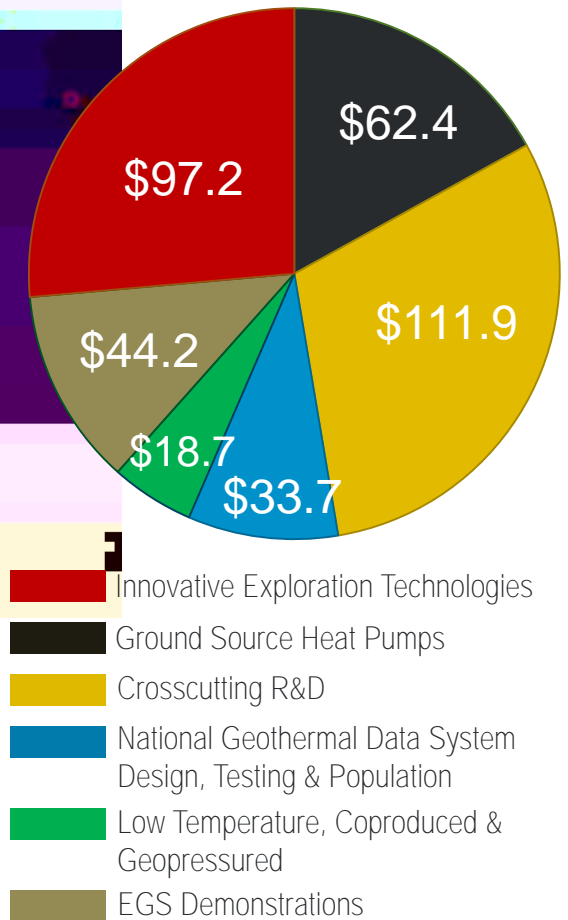
# Low Temperature, Coproduced & Geopressured



*Blackwell and Richards, 2005*

# The Recovery Act has provided a much needed boost to geothermal RD&D

Under Recovery, DOE has invested \$368.2 million in geothermal projects in 39 states.





ARRA Topic	Grantee	Project Title	Objective	Status
Geothermal Demo	Beowawe Power, LLC	Beowawe Bottoming Binary Project	Installed a new low temperature binary unit that is attached to an existing plant providing 10% additional power.	Operational
Geothermal Demo	City of Klamath Falls	Klamath Falls Geothermal Low Temperature Power Plant	Construct a low temperature power plant combined with a district heating system to help power the city of Klamath Falls, OR.	In process of returning federal funds
Geothermal Demo	J 6 257.6 316.18 Tm ET Co1 ET BT96 257.5 Tm [(De)Tm ujhc.(De)T8.18 Tm [( ) TJ ET 5C /P <</MCID 26>> BDC BT 1 0 0 1			





## MEMORANDUM OF UNDERSTANDING BETWEEN

7+( '(3\$570(17 2) (1(5\* < ¶6 \*(27+(50\$/ 7(&+12/2\*,(6 352\*5\$0  
\$1' 2)),&( 2) )266,/ (1(5\* < ¶6 52&.< 02817\$,1 2,/),(' 7(67,1\* &(17(5  
REGARDING THE DEVELOPMENT OF GEOTHERMAL PROJECTS AT THE ROCKY MOUNTAIN OILFIELD  
TESTING CENTER

### Products and Deliverables;

RMOTC Site Visit: July 27-28, 2010

Draft MOU Agreement: August 6, 2010

Final MOU Agreement: August 31, 2010



# Geothermal Blue Ribbon Panel Asked to Help Shape the Future

Fifteen geothermal experts identified the obstacles to geothermal energy growth, discussed the appropriate role of DOE, and recommended priority R&D areas for the Program.

**Recommendation** Narrow the focus of the Program and invest in critical need areas, targeting high-quality near-term resources to help the industry grow and long-term resources to tap the huge geothermal potential.

## Accelerate Near-Term Market Growth **Hydrothermal**

- ‡ Develop an inventory of high-quality prospects using existing technology
- ‡ Advance exploration technologies to reduce the cost and risk of drilling
- ‡ Develop technologies that reduce O&M cost

## Secure the Future **Enhanced Geothermal Systems**

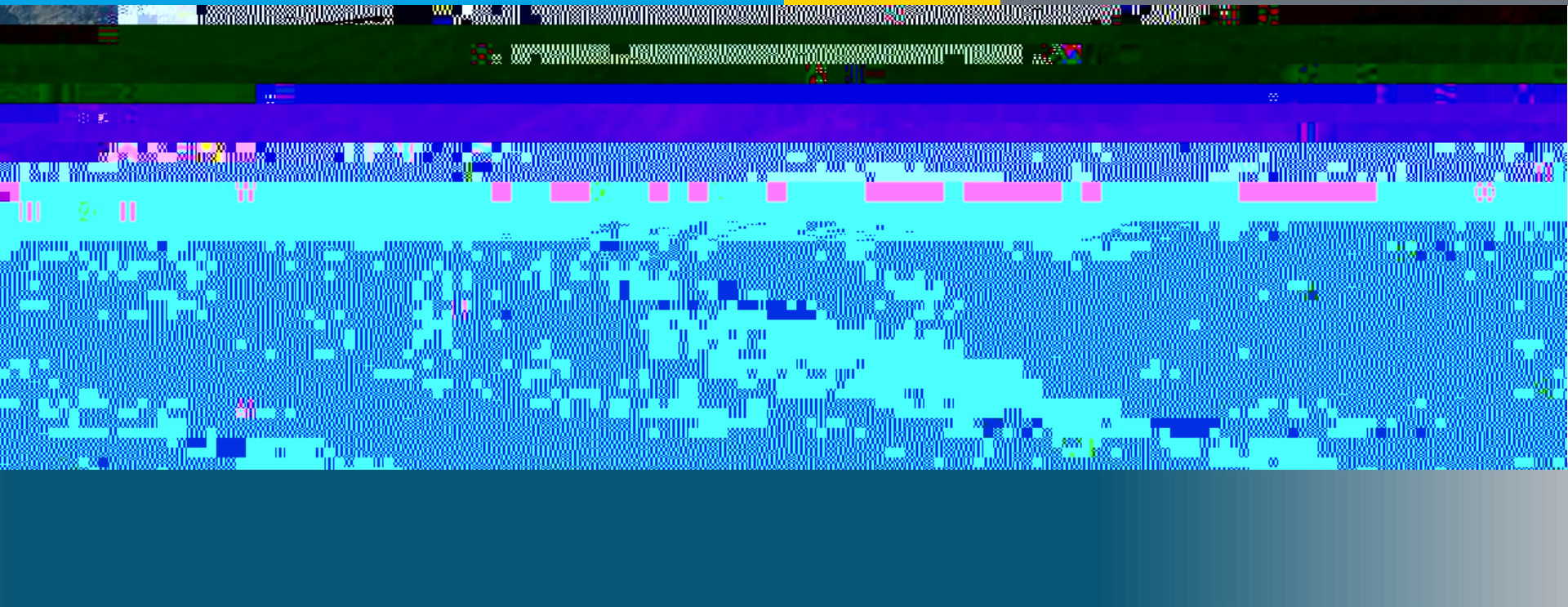
- ‡ Define the optimal conditions for EGS and identify the best prospects
- ‡ Model the feasibility of reservoir creation using existing technology
- ‡ Develop tools to optimize power production and reduce costs
- ‡ Demonstrate the ability to create and maintain a reservoir in multiple geologic conditions

Financing and permitting were identified as major challenges for the industry. Panel members noted that policy in the form of a cost-shared drilling program and streamlined permitting would help overcome those challenges.









Timothy Reinhardt  
Geothermal Technologies Program