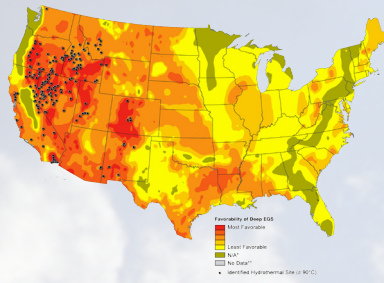


A Demonstration of EGS Technology

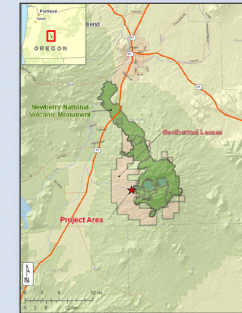
Newberry EGS Enhanced Geothermal Systems DEMONSTRATION

Project Location - Central Oregon, USA

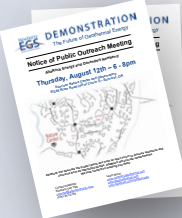


- American Reinvestment and Recovery Act
- Department of Energy, Energy Efficiency and Renewable Energy, Geothermal Technologies Program
- AltaRock awarded \$21.45m as part of total budget of \$43.81m
- In association with: Davenport Newberry, EGI, USGS, Temple University, Texas A&M, LBNL
- Demonstrate EGS at Newberry for future application across the United States

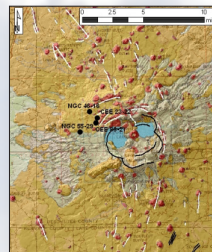
- 10 miles northeast of La Pine, Oregon
- 23 miles south of Bend, Oregon
- Deschutes National Forest
- Northwest flank of Newberry Volcano, Deschutes Co, OR
- Federal geothermal leases outside western boundary of monument



Phase I - Pre-Stimulation 2010-2011

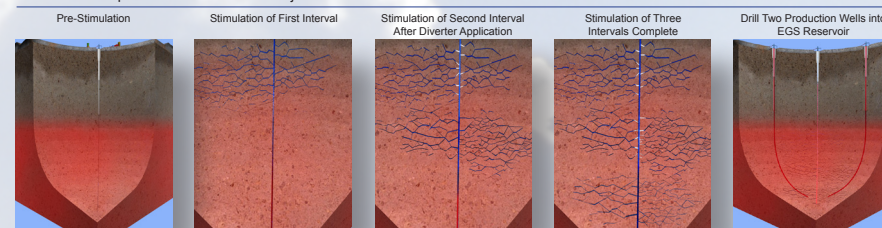


- Community Outreach
- Geoscience review and lab studies
- Baseline Monitoring
- Permitting
- Stimulation Plan
- DOE Stage-Gate Review



Phase II - Injection Well Stimulation / Summer-Fall 2011 Drill and Test Production Wells / Fall 2011-Fall 2012

Preparation for Stimulation • Injection Well Stimulation • Drill and Test Production Wells • Conduct Circulation Test



Phase III - Conceptual Modeling 2013

- Develop conceptual model of fully developed EGS wellfield and power plant
- Supply project reports to Department of Energy
- Issue peer-reviewed publications
- Post demonstration data to National Geothermal Database



Monitoring Seismicity

Regional

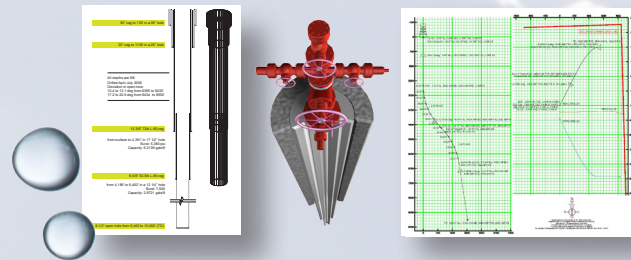
- Low historic seismicity – no measurable events since 1980 within 10 km of demonstration
- Existing stations at Bend, Pine Mountain, Fort Rock, and SE flank of Newberry
- Installed additional stations at River Meadows and La Pine

Local

- Coupled with regional array to provide baseline data and initial indication of Phase II array performance
- High density station array of short period seismometers to measure smaller, local events
- Final array will consist of up to 10 borehole installations and 7 surface stations

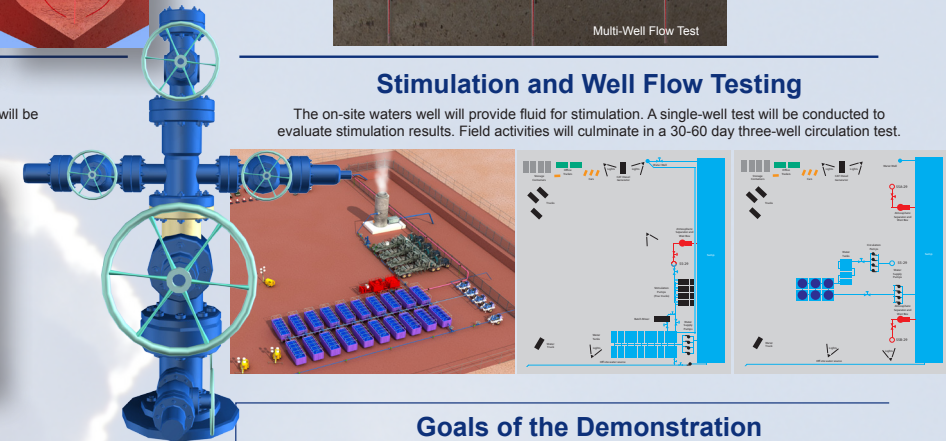
Well 55-29 Profile and Direction Drilling

Existing Well 55-29, completed in 2008, will be stimulated. After stimulation, two additional wells will be directionally drilled from the same pad to intersect the newly created EGS reservoir.

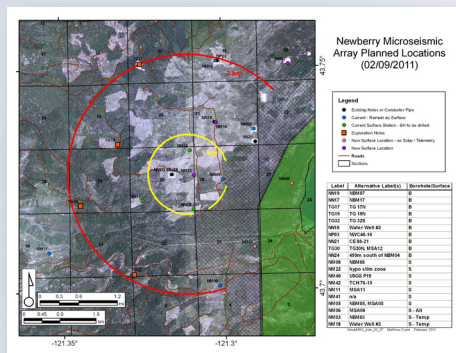


Stimulation and Well Flow Testing

The on-site waters well will provide fluid for stimulation. A single-well test will be conducted to evaluate stimulation results. Field activities will culminate in a 30-60 day three-well circulation test.

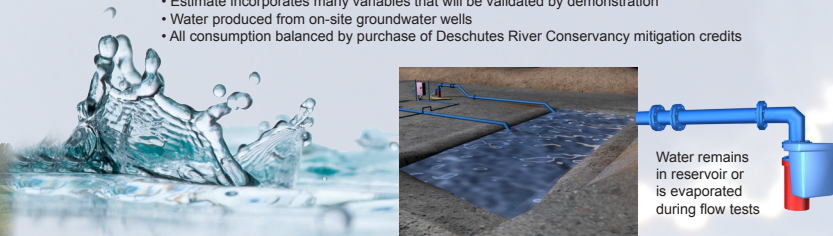


Planned Microseismic Array Stations



Estimated Water Usage

- Project may use between 73 and 142 million gallons (223-435 ac-ft) of groundwater
- Estimate incorporates many variables that will be validated by demonstration
- Water produced from on-site groundwater wells
- All consumption balanced by purchase of Deschutes River Conservancy mitigation credits



Goals of the Demonstration

- Demonstrate current technology and advances in EGS
 - Stimulate at least 3 fracture zones
 - Demonstrate diverter technology for multiple zone stimulation
 - Demonstrate single-well test methods to assess productivity after stimulation
- Drill two production wells into newly created EGS reservoir
- Produce economic quantities of fluid per production well
- Establish circulation through three-well system
- Develop conceptual model of complete EGS system

Milestones

Award Notification – November 1, 2009 • DOE Limited Release of Funds – May 3, 2010 • Filed Notice of Intent – June 8, 2010 • Initiated EA – September 16, 2010 • Completed Seismic Risk Assessment – November 24, 2010
Complete EA – April 29, 2011 • Complete DOE Stage-Gate Review – June 17, 2011 • Initiate Phase II Stimulation Activities – June 20, 2011