Geothermal Permitting
Exploration to Power Generation

Geothermal Resources Council
Portland, Oregon
September 27, 2014
Presented by Scott Nichols, Manager of Permitting & Lands
Integrating Federal, State & Local Regulations

Permitting a geothermal project is like promising the final layout of a jigsaw puzzle when you can only see the border.

Primary Authorities

- National Environmental Policy Act
- BLM Regulations 43 CFR 3200
- State Geothermal Regulations
- County Conditional Use Permitting
- Agency Consultations
- Minor Permits
Regulatory Summary (Federal Lands)

- Property Control & Lease Agreements
- Resource Discovery and Continuing Evaluation
  - Well Permitting
- Interconnection Request
  - Interconnection Study; 18 – 36 months, $20,000 - $150,000
  - Transmission Right of Way (Applicant)
  - Interconnection Agreement
- Power Purchase Agreement
- County Conditional Use Permit & Building Permits
- State & Federal Permits
- Geothermal Injection Plans
- Utilization Plan
1- National Environmental Policy Act (NEPA), 42 CFR § 4321
- Signed by President Richard Nixon, January 1, 1970.
- Planning and Decision making which may have an impact on man's environment.
- Systematic, interdisciplinary approach.
- Insure the integrated use of the natural and social sciences.
- Legislation and other major Federal actions significantly affecting the quality of the human environment require a detailed statement by the responsible official.

2- Legal Evolution of NEPA
- Abandoned key terms (Management Planning, Major Actions, Significant Effects).
- Required for all Agency Decisions and Management Actions.

3- Geothermal Regulations 43 CFR § 3200
4- Washington Office Memorandums
5- Administrative Interpretation
Summary of NEPA Evaluations

- **Pre-Lease Analysis**
  - EIS for Programmatic Geothermal Development (completed)
  - EIS for the Resource Management/Land Use Plan (completed)
  - EA for Lease area (completed)
    - Will include stipulations for wildlife, cultural, & other resources.

- **Post Lease Analysis**
  - EA for Drilling and Land Disturbance, Permit to the Perimeter

- **Continue NEPA Analysis**
  - For approval of the Utilization Plan (Determination of NEPA Adequacy [DNA])
  - For approval of the Commercial Use Permit (DNA)
  - NEPA Decisions and Biological Evaluations Expire after 5 years.
Federal Regulations

- **Data & References**
  - Washington Office Memorandums
  - Regulatory Road Map (http://en.openei.org/wiki/RAPID/Roadmap/Geo)

- **Title 43 Part 3200**
  - Leasing Part 3200
  - Drilling Part 3262
  - Utilization Part 3270

- **Administrative Guidance Documents**
  - Geothermal Resource Orders
  - Use of Determination of NEPA Adequacy
State Oversight

Permits Include
- Production Well Design
- Injection Well Design
- Storm Water Permitting
- Stream Alterations or Encroachments
- Land Application

Agency Staff
- Demonstrate good, practical, & technical experience.
- Focus on engineering design, & resource protection.
- Understand site specific issues and practical expectations.
- Ensure an Inter-Agency participation.
County Conditional Use Permitting

- Community Compatibility
  - Local Revenues
  - Employment
  - Local Opposition/Support
  - Rights of Way
  - Visual/Noise
# Baseline Clearances & Project Permits

<table>
<thead>
<tr>
<th>Leasing &amp; Public Outreach</th>
<th>Air Quality Management Designation</th>
<th>State Agency Production &amp; Injection Permits (10)</th>
<th>State Building Permits</th>
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</thead>
<tbody>
<tr>
<td>Public Utility Commission</td>
<td>Water Quality Monitoring</td>
<td>Environmental Quality Storm Water Discharge Permit</td>
<td>Malheur County Building Permit (Occupancy)</td>
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<td>PPA Approval</td>
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<tr>
<td>US Fish and Wildlife</td>
<td>Federal NEPA Review (multiple)</td>
<td>Environmental Quality Temporary Underground Injection Permit</td>
<td>FERC Market Based Rate Approval</td>
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<td>Service (Endangered Species Act Consultation)</td>
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<tr>
<td>Archeological Clearance</td>
<td>Water Resources Temporary Water Right</td>
<td>County (Conditional Use Permit and Powerline Alignment)</td>
<td>FERC Qualifying Facility Energy Utility Filing</td>
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<tr>
<td>Wetlands Delineation</td>
<td>Bureau of Land Management (3 Rights-of-Way)</td>
<td>County Road Maintenance &amp; CUP Conditions</td>
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<tr>
<td>Confirm Local Land Use</td>
<td>Bureau of Land Management (4 Temp. Gradient Permits)</td>
<td>Environmental Quality Final Underground Injection Permit</td>
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<td>Designation</td>
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<tr>
<td>Visual Resource Determination</td>
<td>State Agency Temp. Gradient Permits (11)</td>
<td>ODEQ (Air Quality Division - Permit to Construct for Diesel Generator)</td>
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**CLEAN GREEN RENEWABLE ENERGY**

**USGeothermal**
Managing Change & Critical Paths

- Communicate the Known and the Unknown.
  - Geothermal exploration is high risk.
  - The design you permit will change.
  - Provide certainty about “the perimeter”, not the “pieces of the puzzle”.
- Rules don’t change, staff interpretation can.
  - Prepare agencies for change.
  - Communicate technical information and results on a continuous basis.
  - Continuous communication builds some resilience into the process.
  - Don’t debate agency requirements, don’t take it personal.
- Every agency works at a different pace.
  - Manage expectations at all levels.
  - Coordinated Processes……may not be.
Geothermal Advantages

- Near Zero Emission Facilities.
- Small Footprint to Energy Produced.
- Can be Designed to Avoid Resource Conflicts.
- Provides Base Load Power.
- Limited Community Impact and No Mandatory Infrastructure Improvement.