

BLM GEOTHERMAL RESOURCE RESPONSIBILITIES

Bend, OR
November 7, 2006



- What the United States Owns
- Leasing Features
- Operations Features



FEDERAL DEFINITION

- geothermal steam and associated geothermal resources means (i) all products of geothermal processes, embracing indigenous steam, hot water and hot brines; (ii) steam and other gases, hot water and hot brines resulting from water, gas, or other fluids artificially introduced into geothermal formations; (iii) heat or other associated energy found in geothermal formations; and (iv) any byproduct derived from them;

- Competitive leases
- Over the counter leases
- Direct use leases—noncompetitive to first qualified applicant



- A lease grants exclusive right to drill for, extract, produce, remove, utilize, sell, and dispose of all geothermal resources...with the right to build and maintain necessary improvements thereon for a primary term of *10 years*.



LEASING

- **Term:** ten year primary term, w/ two five year extensions; 5 year extension for drilling; production extension up to 35 years; renewal of up to 55 years.
- **Size:** nte 5,120 acres per lease; no lease more than 51,200 acres in any one state, excluding acres committed to a unit agreement or development contract.



- **Rent:** competitive leases: \$2/ acre thru year ten; \$5/ acre thereafter
- **Royalty:** for electricity: 1st 10 years: 1-2.5 % (1.75 %) of gross proceeds from sale of KWH (not steam); 2-5% (3.5%) of gross proceeds in later years.



- Initial work requirements: By the end of the initial ten year term, expend at least \$40 per acre in development activities that provide additional geologic or reservoir information: e.g., drilling temperature gradient wells, core drilling; geophysical surveys.
- Or pay \$ 40/ acre



- In years 11-15, spend \$15 per acre per year
- In years 16-19, spend \$25 per year
- Excess work can be applied forward



BONDING

- Bonding:(a) The lessee or operator must post a bond with BLM before exploration, drilling or utilization operations begin.
- Bond must cover (a) Any activities related to exploration, drilling, utilization, or associated operations on a Federal lease; (b) reclamation of the surface and other resources; (c) royalty payments; and (d) compliance with the requirements of § 3200.4 [i.e., everything else].



- Production incentives: new or expansion facilities in production by 8/11/2011 may receive a four year 50% reduction in royalty from what is otherwise due



OPERATIONS

- Exploration operations
- Drilling operations
- Inspection & Enforcement
- Utilization & Site License & Commercial Use Permit



EXPLORATION OPERATIONS

- BLM to approve Notice of Intent to Conduct Geothermal Resource Exploration Operations (NOI)
- Includes temperature gradient wells: depth, casing & cementing; circulation, logs, BOP, expected water, expected LOC, well site layout & access



- BLM-approved exploration operations must:
- (a) Meet all operational and environmental standards;
- (b) Protect public health, safety, and property;
- (c) Prevent unnecessary impacts on surface and subsurface resources;
- (d) Be conducted in a manner consistent with the principles of multiple use; and
- (e) Comply with the requirements of § 3200.4.



- Conduct exploration operations in a manner that:
- (1) Protects the quality of surface and subsurface waters, air, and other natural resources, including wildlife, soil, vegetation, and natural history; (2) Protects the quality of cultural, scenic and recreational resources;
- (3) Accommodates other land uses, as BLM deems necessary; and (4) Minimizes noise.



DRILLING OPERATIONS

- Drilling wells and conducting related activities for the purposes of performing flow tests, producing geothermal fluids, or injecting fluids into a geothermal reservoir.
- Also redrilling, deepening, plugging back, and other subsequent well operations
- Not exploration wells



- Drilling operations must:
- (a) Meet all environmental and operational standards;
- (b) Prevent unnecessary impacts on surface and subsurface resources;
- (c) Conserve geothermal resources and minimize waste;
- (d) Protect public health, safety, and property; and
- (e) Comply with the requirements of § 3200.4.



UTILIZATION

- In order to use Federal land to produce geothermal power, you must obtain a site license and construction permit from BLM before you start preparing the site.



- This includes:
- (1) Electrical generation facilities;
- (2) Direct use facilities;
- (3) Related utilization facility operations;
- (4) Actual and allocated well field production and injection; and
- (5) Related well field operations.



- Utilization operations must:
- (a) Meet all operational and environmental standards;
- (b) Prevent unnecessary impacts on surface and subsurface resources;
- (c) Result in the maximum ultimate recovery;
- (d) Result in the beneficial use of geothermal resources, with minimum waste;
- (e) Protect public health, safety, and property; and
- (f) Comply with the requirements of § 3200.4.



ROYALTY DISTRIBUTION

- County: 25%
- State: 50%
- Federal treasury: 25%



CURRENT LEASES

- 58 leases in OR - 54,791.49 acres
- 12 pending offers in OR - 12,994.47 acres
- 4 pending offers in WA - 9,450.20 acres

