

U.S Department of Energy  
Semi-Annual Program Report

**Geothermal Outreach**

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**Date received:**

**Final report:**

**Comments:**

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***Geothermal Energy Outreach in the State of Oregon  
Sixth Semi-Annual Report  
September 2007***

**Statement of Objectives**

The Oregon Department of Energy (ODOE) provides information and services to the geothermal community and other stakeholders. By leading the GeoPowering the West (GPW) effort for Oregon, ODOE maintains working relationships with others, including but not limited to: Tribes, Oregon Department of Geology and Mineral Industries, USDOE, U.S. Forest Service, Bureau of Land Management, National Park Service, the Oregon Institute of Technology, Geothermal Resources Council, and the Geothermal Education Office. This effort will help expand direct use of geothermal energy in Oregon and may lead to overcoming barriers to geothermal power plant developments. Appendix A contains the **Strategic Plan** outlining objectives for this program. Oregon Geothermal Working **Group members** are listed in Appendix B.

**Program activities**

The following highlights the principal accomplishments during the third half-year starting in April 1, 2007 through September 30, 2007:

The Program in **April** provided information to a title company officer regarding Austin Hot Springs in Clackamas County, Oregon. Gaye Bell of First American Title Co. sought high-temperature geothermal well information. The Program steered her to several sources: DOGAMI, Water resources Department and the OIT Geo-Heat Center.

The Program in **May** gave a presentation before the 2007 Joint Engineering Conference in Bend, Oregon on May 18, 2007. (Marty Stipe of ODOE is the current President of conference sponsor the Professional Engineers of Oregon.) The talk title was *Geothermal Energy in Central Oregon*. Prominent mention was made of both the Oregon Department of Energy and the US DOE GeoPowering the West programs. In discussing the GeoPowering the West initiative, one key goal made to the approximately 80 member audience was educating a new workforce – including them - about geothermal energy. Questions following the talk indicated an engaged audience representing multiple engineering disciplines. Andrew Chiasson of the OIT Geo Heat Center also gave a presentation on ground source heat pumps at the conference. A copy of the conference agenda and presentation file are included with this report.

The Program in **June** continued assisting in the development of new state ground source heat pump tax credit certification requirements by instructing on a technician training conference call. A copy of the training call agenda was provided in the March 2007 report.

June 2007 saw the Oregon Dept. of Geology & Mineral Industries (DOGAMI) deploy the GTILO (Geothermal Information Layer for Oregon) Release-1 on its website. An interactive map displays thermal spring and well data, Ref ID data, and on the Download Data page, metadata files, a geothermal data download zip file, and geophysical logs in zipped files. This project was completed for the Oregon Program on budget and by its June 30 deadline. See <http://www.oregongeology.com/sub/gtilo/index.htm>.

The Program in **July** focused on making OGWG meeting number 8 happen on July 23. It was planned to tie into two additional meetings occurring the same day and venue. The sequence began with a Pacific Northwest Section of the Geothermal Resources Council luncheon and was then followed by a scoping session for the BLM Nationwide Geothermal Programmatic EIS. About 25 folks attended the luncheon to hear Curt Robinson Executive Director of the GRC say a few words. He was followed by Daniel Fleischmann of ORMAT Nevada speaking on "Getting Geothermal Electricity Projects On Line". Following his talk, 31 audience members attended the OGWG meeting. Minutes of that report have been submitted to ODOE.

At the **July** meeting the Oregon Department of Geology & Mineral Industries (DOGAMI) released the Geothermal Information Layer for Oregon. This project is a significant step forward because it 1) adds a substantial amount of known information about geothermal resources and 2) makes it available in an interactive map format on the internet. As Clarke Niewendorp of DOGAMI noted, 12 file cabinets of data - instead of 2 as forecast - were added to this database. Details are below.

### **Minutes of the Eighth Meeting of the Oregon Geothermal Working Group**

**Portland, OR, July 23, 2007**

The meeting was preceded by a luncheon hosted by the Pacific Northwest Section of the Geothermal Resources Council. As part of the lunch, Daniel Fleischmann of ORMAT Nevada Inc. gave a presentation titled "Getting Geothermal Electricity Projects On Line". His talk concluded that many opportunities exist for geothermal power projects. He also called for an organized effort in the state to show how geothermal development can work in concert with the environment.

The official OGWG meeting began with introductions from the 31 attendees. Following introductions Carel DeWinkel of ODOE covered renewable energy legislation that came out of the recently concluded 2007 Oregon legislature. The most significant of the several laws he discussed is a Renewable Portfolio Standard (RPS). This law requires all Oregon utilities and electricity service suppliers to include in their portfolio of power sold to retail customers a percentage of electricity generated from qualifying renewable energy sources. A summary of the standard can be found at the ODOE and OPUC websites. Other related legislation increases the Business Energy Tax Credits from 35 percent of eligible costs up to 50 percent, spread evenly over 5 years.

Note: most of the following speakers used power point presentations, which are posted on the same ODOE web page as these Minutes.

Al Waibel of Columbia Geoscience presented a short update of activities his client, Davenport Power LLC, operator for Northwest Geothermal Co. Davenport submitted a Plan of Exploration to the BLM in February 2007, and is defining the resource. The company is proposing to drill and test deep exploration wells to evaluate and define the extent and characteristics of the geothermal reservoir on the western flank of Newberry Volcano. Nine wells from three well pads are proposed. An Environmental Assessment for the proposed activities is underway.

Invited speakers from Nevada Geothermal, US Geothermal and Eugene Water & Electric Board (EWEB) were unable to attend so Alex Sifford of Sifford Energy Services filled in. He provided information on each firm's geothermal activities in Oregon from press releases and personal communications. Nevada Geothermal is concentrating its efforts at Blue Mountain Nevada but continues to investigate power transmission options for its Crump Geyer prospect in Oregon. The US Geothermal Neal Hot Springs project currently consists of 9.6 square miles located in Malheur County Oregon. A geophysical program using gravity and magnetic surveys was completed in February 2007 and will be used to develop drill targets. U.S. Geothermal is planning a production well drilling program to determine the commercial viability of the geothermal resource. The current development plan anticipates 26MW of power production. EWEB continues discussions with US Geothermal for possible power purchases, most likely from Raft River, Idaho. EWEB seeks renewable power sources including geothermal energy starting around 2011.

Joe Eberhardt provided an excellent talk on Portland General Electric's (PGE) interest in geothermal energy. Joe works in the trading floor of PGE so is familiar with current short and long term energy prices. PGE's latest Integrated Resource Plan describes an energy supply strategy for 2008 through 2015 that targets additional renewable resources, energy efficiency, demand-side resources, and power purchase agreements of varying terms. PGE will be seeking 300 MW of power from renewable sources starting in the 2012 period, 50 MW of which is earmarked for geothermal sources. PGE forecasts ideal geothermal power costs at about \$67 per megawatt-hour. Joe encouraged developers to prepare proposals accordingly. In the interim, the utility is screening geothermal prospects, transmission hurdles and examining participation options. More information and a press release can be found at [http://www.portlandgeneral.com/about\\_pge/news/irp\\_filed\\_07.asp](http://www.portlandgeneral.com/about_pge/news/irp_filed_07.asp)

Nick Rahn of PacifiCorp Energy shared that utility's interest in geothermal energy, past, current & future. More than 15 years ago, PacifiCorp subsidiary Rocky Mountain Power (formerly Utah Power) teamed with Phillips Petroleum to build the Blundell Plant, the first geothermal electric plant outside of California. The geothermal reservoir at Blundell in southern Utah is 3,000 feet deep, more than 500 degrees Fahrenheit and with a pressure of 500 pounds per square inch. PacifiCorp Energy is adding 11 MW of new capacity at Blundell, using an ORMAT bottoming cycle binary system. Going forward, PacifiCorp has a 2007 Integrated Resource Plan that indicates plans to acquire 1400 MW of new cost-effective renewable resources by 2015. Nick also encouraged developers to prepare proposals to meet that goal. More information can be found at <http://www.ppl.com/Navigation/Navigation23807.html>.

The Energy Trust of Oregon has an interest in geothermal energy, as speaker Betsy Kaufman shared with the audience. The avenue for support is the Open Solicitation program, designed to support renewable energy projects that are not eligible for other Energy Trust renewable energy programs. The program also provides opportunities to receive financial incentives and support for innovative commercial applications of renewable energy technology. Eligible projects must either be located in or deliver power to the Oregon service territories of Portland General Electric or Pacific Power. Energy Trust may fund all or a portion of the above-market

costs of a project, defined generally as the difference between the net present value of the electricity produced by the project, and the net present value of the costs and expenses incurred to generate that electricity. There is no fixed percentage for the amount of the above-market costs Energy Trust will pay. Each project is unique and incentives are based on many factors. The Energy Trust is currently accepting proposals for projects. More information can be found at <http://www.energytrust.org/RR/os/index.html>

Clark Niewendorp, with the Oregon Department of Geology and Mineral Industries officially unveiled the Geothermal Information layer for Oregon (GTILO) database and geographic information system. It compiled information for all known well and spring data in Oregon. The work is just completed and can be found at <http://www.oregongeology.com/sub/gtilo/index.htm>

Following the OGWG at 4:30 in the same Portland location, the BLM put on a Scoping Session for the Nationwide Geothermal Programmatic EIS. It was one of ten scoping meetings the BLM and Forest Service are hosting to share information and get input. The meeting included an open house from 4:30 – 6:00, followed by a brief presentation and comment period. Draft EIS will be available for public review in winter 2008 (with public meetings). The Final EIS will be available in summer 2008. More information can be found at [www.blm.gov/geothermal\\_eis](http://www.blm.gov/geothermal_eis).

In **August** the Program followed up with a July meeting attendee seeking to develop energy projects in Oregon. Dr Jagadeeswara R. Kodali of Skegness, England is actively pursuing geothermal power generation opportunities in Oregon and other states. The Program provided detailed development information to Dr. Kodali.

The Program reviewed in **August** the draft report *GeoPowering the West: Supporting America's Domestic Energy Future Today* and provided comments.

The Program in **September** assisted Mr. Joe Eberhardt of Portland General Electric this month. Joe is learning geothermal power and acquainting himself with the industry on behalf of the utility. The same month saw an announcement of consequence from the Eugene Water & Electric board. It follows.



**Sept. 19, 2007**

**EWEB to purchase geothermal power from Idaho**

(Eugene, OR) The Eugene Water & Electric Board is adding geothermal power to its rapidly expanding mix of wind, solar and other renewable energy sources.

The municipal utility's Board of Commissioners on Tuesday night (Sept. 18) authorized the utility's staff to sign a contract to buy up to 15 megawatts of electricity from U.S. Geothermal Inc.'s Raft River Project in southeastern Idaho. The power will be available starting in 2009, when U.S. Geothermal completes the second phase of the power plant 200 miles southeast of Boise.

EWEB already owns part of a wind farm in Wyoming, and has signed contracts to buy electricity from the Stateline wind farm near Walla Walla, Wash., from the Klondike wind project in central Oregon, and from EWEB customers who have installed solar power systems in Eugene.

The geothermal power purchase significantly increases EWEB's commitment to renewable energy. It will nearly double the amount of wind, solar and other non-hydro renewable energy EWEB currently generates or has contracted to purchase, to more than 10 percent of Eugene's average daily electricity demand. About 80 percent of EWEB's electricity comes from hydropower, a clean, renewable energy source that doesn't produce carbon dioxide or other emissions that cause global warming.

Three years ago, the utility's commissioners adopted an energy resource policy that calls for meeting the growth in Eugene's energy needs by continued investments in conservation and renewable energy. For years, EWEB has devoted 5 percent of revenues into conservation.

Geothermal is a highly desirable form of renewable energy, because it is a steady, predictable source of electricity, said Jim Maloney, EWEB's senior energy resource planner. Wind energy isn't as reliable, because it is subject to changing weather conditions and wind speeds.

A significant factor in EWEB's decision to purchase the geothermal power was the Bonneville Power Administration's willingness to sign an "exchange" agreement, in which BPA would take the output from the geothermal power to serve its customers in Idaho, then provide EWEB with an equal amount of electricity from the federal agency's power "grid" at a point closer to Eugene.

As part of the Raft River purchase, EWEB also will obtain "Renewable Energy Credits," which can be sold separately to other utilities, used as part of its own Greenpower program, or saved and used to comply with Oregon's new Renewable Portfolio. Read more about [U.S. Geothermal and the Raft River project](#).

For More Information Contact Lance Robertson, 541-984-4716.

*Website*

Minutes of the July 23 meeting presentations were in August added to the ODOE website at <http://egov.oregon.gov/ENERGY/RENEW/Geothermal/OGWG-Meetings.shtml>.

*Other Activities*

The Pacific Northwest Section of the Geothermal Resources Council, with financial assistance from the Bonneville Power Administration, provided training to federal land management agency staff in Bend this month. The May 22<sup>nd</sup> course title was an “Introduction to Geothermal Power Exploration and Development”. Twenty two staff from the Deschutes & Boise National Forests, Bureau of Land Management and Oregon Department of Geology & Mineral Industries attended. The primary focus was the respective roles and responsibilities of federal agencies. Additional benefits included conversations between geographically separate but functionally similar staff that are new to the field.

Both Davenport Resources and Vulcan Power released news items in this period.

## Appendix A

### Oregon Geothermal Energy Development Strategic Plan

Proposed Activities  
September 2006 to October 2008

#### MISSION STATEMENT

**The Oregon Geothermal Working Group promotes the use of Oregon's geothermal resources for power generation and direct use applications.**

#### STRATEGIC OBJECTIVES

- Strategic Objective 1:** Organize an Oregon Geothermal Working Group and Implement a Strategic Plan.
- Strategic Objective 2:** Educate the stakeholders and increase public awareness of Oregon's geothermal energy resources, rules, laws, benefits and cost-effective applications.
- Strategic Objective 3:** Promote the establishment of laws, legislation, and policies that encourage the development of geothermal energy for direct use and power generation.
- Strategic Objective 4:** Increase technical knowledge and understanding of Oregon's geothermal resources and their uses.
- Strategic Objective 5:** Promote financial assistance for geothermal energy projects.
- Strategic Objective 6:** Promote innovative and broader use of non-generating applications geothermal energy.
- Strategic Objective 7:** Promote opportunities for geothermal electric power development.
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- Strategic Objective 1:** Organize an Oregon Geothermal Working Group and Implement a Strategic Plan.

#### **Action Plan:**

- a. By November 2004, organize a Oregon Geothermal Working Group to review, adopt, and implement the Oregon Geothermal Energy Development Strategic Plan. The Oregon Department of Energy will facilitate and support this group.
- b. Through September 2008, conduct regular working group meetings to review progress of the Strategic Plan. This will include disseminating information to Oregon geothermal energy stakeholders through the Oregon Geothermal Working Group email list and ODOE website.

- Strategic Objective 2:** Educate the stakeholders and increase public awareness of Oregon's geothermal energy resources, rules, laws, benefits and cost-effective applications.

#### **Action Plan:**

- a. Through September 2008, sponsor and/or coordinate educational activities (e.g., workshops, symposiums, etc.) to promote the uses of geothermal energy (e.g., space

- and water heating, aquaculture, industrial applications, power generation) to various groups.
- b. Through September 2008, network with resource centers i.e., OIT GeoHeat Center, Geothermal Education Office, NREL in developing educational programs for interested parties, potential users and community leaders in the use of geothermal energy.

**Strategic Objective 3:           Promote the establishment of laws, legislation, and policies that encourage the development of geothermal energy for direct use, power generation and cascading applications.**

**Action Plan:**

- a. Through September 2008, educate appropriate legislative committees and others influencing energy policies.
- b. By January 2006, identify organizations to promote the drafting of legislation, which may include renewable portfolio standards, set asides, system benefit charge, and tax credits.
- b. Through September 2008, provide technical support to those involved in drafting legislation.
- d. Through September 2008, work with the Oregon Public Utilities Commission to promulgate rules promoting utility purchase of geothermal power.
- e. Through September 2008, explore for possible links with new farm bill to support direct use applications in agriculture.
- f. Through September 2008, encourage the Oregon Congressional delegation to support legislation to promote development of geothermal resources for direct use and power generation.

**Strategic Objective 4:           Increase technical knowledge and understanding of Oregon's geothermal resources and their uses.**

**Action Plan:**

- a. Through September 2008, promote efforts to improve and update existing geothermal resource databases and maps. Information will be collected from the OIT Geo-Heat Center, the Dept. of Geology & Mineral Industries and the Geothermal Resources Council. Such information will be distributed as part of Strategic Objective 2.

**Strategic Objective 5:           Promote financial assistance for geothermal energy projects.**

**Action Plan:**

- a. Through September 2008, compile and disseminate information on available government financial incentives. These include federal incentives (production tax credits), state incentives (loans and tax credits), and Energy Trust of Oregon incentives.

**Strategic Objective 6:           Promote non-generating applications of geothermal energy.**



**Action Plan:**

- a. By June 2005, identify and characterize geothermal resources in Oregon suitable for non-generating applications, and make such information regarding the same publicly available.
- b. By December 2005, develop a repository of technical, financial, regulatory and other relevant information on non-generating uses of geothermal energy.
- c. Coordinate with the Oregon Economic Development officials and others in conducting studies that document the rural economic impacts of developing geothermal energy resources for direct use.

**Strategic Objective 7:           Promote opportunities for geothermal electric power development.**

**Action Plan:**

- a. By June 2005, identify and characterize resources in Oregon suitable for geothermal electric development, and make information regarding the same publicly available.
- b. By June 2005, make information pertinent to geothermal power plant siting, acquisition of financing, etc. publicly available.
- c. By December 2005, determine from rural electric utilities (including aggregators such as Pacific Northwest Generating Company) their near-term interest in pursuing geothermal development in Oregon
- d. Through September 2008, work with other stakeholders to resolve existing transmission constraints that could impede development of geothermal electric generation.

## Appendix B Oregon Geothermal Working Group List as of Sept. 30, 2007

Company	Last Name	First Name	Phone	Email	Address	City	State
Vulcan Power Company	Albert	Mark	541.317.1984	malbert@vulcanpower.com	1183 NW Wall Street, Suite G	Bend	OR
Vulcan Power Company	Cariglia	Frank	541.317.1984	fcariglia@vulcanpower.com	1183 NW Wall Street, Suite G	Bend	OR
	Altschuler	Sid	509.943.2411	salt@bossig.com	1331 Geothals Dr. Apt 8	Richland	WA
Central Oregon Intergovernmental Council	Aycock	Scott	541.548.9525	scotta@coic.org	2363 SW Glacier Place	Redmond,	OR
Oregon State Legislature	Barnhart	Phil	503.986.1411	rep.philbarnhart@state.or.us	900 Court St. NE	Salem	OR
Portland General Electric	Barra	Joe	503.464.8552	joe.barra@pgn.com		Portland	OR
Bob Lawrence and Associates	Battocletti	Liz	703-836-3654	lbatto@att.net		Alexendria	VA
USDA Natural Resources	Berg	Merlin	541.296.2391 x117	merlin.berg@or.usda.gov	2325 River Rd., Ste. 2	The Dalles	OR
Association of Oregon Counties	Bibler	Alice	503.585.8351	abibler@aocweb.org	PO Box 12729	Salem	OR
Davenport Power	Bingham	Hiram	203.531.6777	habingham@davenportresources.com		Connecticut	
Davenport Power	Bingham	Tony	203.531.6777	ahbingham@davenportresources.com		Connecticut	
Washington State University Energy Program	Bloomquist	R. Gordon	360.956.2016	bloomquistr@energy.wsu.edu	PO Box 43165	Olympia	OR
Balzhiser & Hubbard Engineers	Bomar	David	541.686.8478	dbomar@bhengineers.com	P.O. Box 10347	Eugene	OR
Geo-Heat Center, OIT	Boyd	Toni	541.885.1750	boydt@oit.edu	3201 Campus Dr.	Klamath Falls	OR
Stoel Rives, LLP	Bricker	Jennie	503.294.9631	jbricker@stoel.com	900 S.W. Fifth Ave., Ste. 2600	Portland	OR
Oregon Economic Revitalization Team (ERT)	Brown	Janet	541.475.0557	janet.l.brown@state.or.us			
University of Washington-Madison	Burnett	Holly	206.937.2853	hbburnett@wisc.edu	4007 51st Ave SW	Seattle	WA
Crane and Hines, OR	Cain	Jean	541-573-2147 or Crar	jcain@centurytel.net			
Energy Recovery Group, LLC	Carpernter	Mike	503.508.7315	livingfuels@aol.com	PO Box 21420	Salem	OR
Geothermal Support Services	Carter	Anna	707.585.2111	annacartr@aol.com	5467 Petaluma Ave.	Santa Rosa	CA
Geo-Heat Center, OIT	Chiasson	Andrew	541.885.1750	andrew.chiasson@oit.edu	3201 Campus Dr.	Klamath Falls	OR
Deschutes National Forest	Chitwood	Larry	541.383.5618	lchitwood@fs.fed.us	1645 Hwy 20 East	Bend	OR
	Coffey	Nick		coffey-geo@comcast.net			
Symbiotics LLC	Cole	Brian	541.523.0400	bc@orbisgroup.org	PO Box 1088	Baker City	OR
Symbiotics LLC	Cole	Brian	541.523.0400	bc@orbisgroup.org	PO Box 1088	Baker City	OR
Energy Trust of Oregon	Cowan	Alan	503.459.4074	Alan.cowan@energytrust.org	733 SW Oak St., Suite 200	Portland	OR
DLDavis Enterprises, LLC	Davis	Dennis L.	541.771.6984	dld1151945@yahoo.com	422 West 16th	The Dalles	OR
Oregon Department of Energy	DeWinkel	Carel	503.378.6099	carel.dewinkel@state.or.us	625 Marion St NE	Salem	OR
Power Resource Managers, LLP	Donnelly	Michael	360.693.8484	mdonnelly@prmlp.com	1610 C St. Ste 102	Vancouver	WA
Deschutes National Forest (RETIRED)	Doremus	Alice	541.383.5580	aldoremus@yahoo.com		Bend	OR
PacifiCorp	Dragoon	Ken		ken.dragoon@pacificorp.com	825 NE Multnomah	Portland	OR
Oregon Department of Energy	Drumheller	Bill	503-378-4035	bill.drumheller@state.or.us			
Bonneville Environmental Foundation	Duncan	Angus	503.248.1905	angusduncan@b-e-f.org	133 SW 2nd Avenue, Suite 410	Portland	OR
Dyer Engineering	Dyer	Dan L.	775.852.1440	dan@dyerengineering.com	1575 Delucchi Lane, Suite204	Reno	NV
Central Electric Cooperative, Inc.	Ertner	Douglas	541.923.7157	dertner@cec-co.com	PO Box 846	Remond	OR
ORECA	Evans	Jack	503.393.0180	jevans@oreca.org	4255 Rivercrest Dr N	Keizer	OR
Nevada Geothermal Power Inc.	Fairbank	Brian	866-688-0808	fairbank@nevadageothermal.com			
AMEC Earth and Environmental, Inc	Feild	James	503-639-3400	james.feild@amec.com		Portland	
LPP Resources	Fitzgibbon	Blair	503.916.2000 x4211	bfitz@pps.k12.or.us		Portland	OR
PLU Dept. of Geosciences	Foley	Duncan	253.535.7568	foleyd@plu.edu		Tacoma	WA
US Dept. of Energy, Golden Field Office	Framel	Curtis	303-275-4872	curtis.framel@go.doe.gov	1617 Cole Boulevard	Golden	CO
Recreation, Lands and Mineral Resources	Fujimoto	Bob	503.808.2430	rfujimoto@fs.fed.us	USDA Forest Service Region 6	Portland	OR
Renewable Northwest Project	Gagliano	Troy	503.223.4544	troy@rnp.org	917 SW Oak, Suite 303	Portland	OR
Idaho Department of Water-Energy Division	Galinato	Gerry	208.287.4897	gerry.galinato@idwr.idaho.gov	322 E Front St	Boise	ID
BLM	Geehan	Patrick	503.808.6044	pgeehan@or.blm.gov		Portland	OR
John Geyer & Associates	Geyer	John	360.882.5050	jgeyer@jgainc.com	5910 NE 82nd Ave	Vancouver	WA
Oregon People's Utility District Association	Godard	Donald	503-370-4413	dgodard@opuda.org	727 Center St. NE, Suite 108	Salem	OR
Washington State University Energy Program	Gold	Caryl	360.956.2049	goldc@energy.wsu.edu	PO Box 43165	Olympia	OR
Oregon National Guard	Graham	Wayne	503.584.3165	Wayne.Graham@or.ngb.army.mil			
Harney County Court	Grasty	Steve	541.573.6356	sgrasty@oregonvos.net	450 N Buena Vista	Burns	OR

Subsurface Excellence	Hamblin	Jerry	360.378.0866	jerryhamblin@attglobal.net	338 Sunrise Ridge Rd.	Friday Harbor	WA
Chevron	Hand	Dan	253-435-1991	dhand@chevron.com		Puyallup	WA
AHZ, LLC	Hansen	Jim	503.624.1773	jamesnh@teleport.com	5916 Sunbrook Dr	Lake Oswego	OR
Klamath Water Users Assoc.	Hartman	Harold	541-723-4380/c 541-	lynhartconsult@earthlink.net	541-723-4380/c 541-331-3615	chairman general	Malin
E3 Strategies	Hayes	Cylvia	541-617-9013/ c 280-	info@3estrategies.org		Bend	OR
Sandia Laboratory	Hill	Roger	505.844.6111	rrhill@sandia.gov	PO Box 5800 (MS 0708)	Albuquerque	NM
Chena Hot Springs Resort	Holdmann	Gwen	907.590.4577	gwen@yourownpower.com			Alaska
USDA Rural Business-Coop Serv	Hollis	Donald	541.278.8049 x129	don.hollis@or.usda.gov	1229 SE 3rd St, Suite A	Pendleton	OR
OMNI Environmental Services	Houck	Jim	503.643.3788 x115	houck@omni-test.com	5465 SW Western Ave. Ste. G	Beaverton	OR
DOGAMI	Houston	Bob	541.967.20390 x28	robert.a.houston@mlrr.oregongeology.com	229 Broadalbin St. SW	Albany	OR
Town of Lakeview - Town Manager	Huddleston	Roberta	541.947.2029	robertahuddleston@hotmail.com	525 N. 1st	Lakeview	OR
Klamath County and SC Oregon Economic Deve	Ingram	Christina	541-882-9600	cingram@fireserve.net	541-882-9600		
ODEQ - Senior Environmental Engineer	Jennings, PE	Thane	541.388.6146 x247	jennings.thane@deq.state.or.us	2146 NE 4th Street	Bend	OR
Malheur County	Jensen	Jim	541-881-0327	jjensen@malheurco.org			
LPP Resources	Johnson	Carl	503.525.2700		12918 SW 63rd Place	Portland	OR
Golden State Power Coop	Jones	Aaron					
Clean Energy Products	Kennell	Ed		edkenl@msn.com			
	Kilgrow	Sean	253.835.0023	seankil@earthlink.com	32218 47th Ave. SW	Federal Way	WA
NW Power and Conservation Council	King	Jeffrey	503.222.5161	jking@nwcouncil.org	851 SW Sixth Ave, Suit 1100	Portland	OR
Northwest Geotech	Kiser	Jim	971.235.9555	jpkiser@aol.com	2627 NE Knott St	Portland	OR
Epoch Well Services	Krahmer	Michael	503.469.0382	mike.krahmer@epochwellservices.com	12265 NW Lovejoy St.	Portland	OR
Midstate Electric Coop	Kopacz	Bill	541.536.2126	bkopacz@midstateelectric.coop			
Salem Electric	Kuhlman	Roger	503.362.3601	kuhlman@salemelectric.com		Salem	OR
Geologist Extraordinaire	La Fleur	Joe	541.741.7198	lafleur113@clearwire.net	36700 Oak Pt. Rd.	Springfield	OR
Idaho National Engineering & Environmental Lab	Laney	Patrick	208.526.7468	ptl@inel.gov		Idaho Falls	ID
APTECH	Leshuk	James	503.370.9551	leshukj@open.org	PO Box 807	Salem	OR
Liskey Farms Inc.	Liskey	Tracey	541.798.1651	traceywe@aol.com			
Clatskanie PUD	Logie	Lisa	503.728.2163	lisa@clatskaniepud.com	PO Box 216	Clatskanie	OR
Vulcan Power Company	Lonsdale	Sandy	541.317.1984	slonsdale@vulcanpower.com	1183 NW Wall Street, Suite G	Bend	OR
Geo-Heat Center, OIT	Lund	John W	541.885.1750	lundj@oit.edu	3201 Campus Dr.	Klamath Falls	OR
Warm Springs Power Enterprises	Manion	Jim		j_manion@wspower.com			
	Martini	Brigette		martini@hyvista.com			
Association of Oregon Counties	McArthur	Mike	503.585.8351	mmcarthur@aocweb.org			
McClain Associates	McClain	David	503.799.5123	dwmacbevor@aol.com	9023 SW 176th Ave.	Beaverton	OR
Klamath County	McCollum	Bobbie		bobbie@fireserve.net			
DOGAMI	McConnell	Vicki S.	971-673-1550	vicki.mcconnell@dogami.state.or.us	800 NE Oregon St., Suite 965	Portland	OR
OR Dept. of Geology and Mineral Industries	McConnell	Vicki S.	503.731.4100 x228	vicki.mcconnell@state.or.us	800 NE Oregon St., Suite 965	Portland	OR
Vanguard LLC	McFadden	Shawn	479.685.9730	shawnmcf@charter.net	91 Church St	Ashland	OR
LPP Resources - LTD Partnership	Miller	Jim	503.525.2700		12918 SW 63rd Place	Portland	OR
LPP Resources - LTD Partnership	Miller	Jim	503.525.2700		12918 SW 63rd Place	Portland	OR
David Evans and Associates, Inc.	Morrison	Jessica	503-499-0270	Jsmo@deainc.com	2100 SW River Parkway	Portland	OR
CAE Bonneville Power Administration	Morrow	Anne	503.230.3100	amorrow@bpa.gov	905 NE 11th Ave	Portland	OR
Vulcan Power Company	Munson	Steve	541.317.1984	smunson@vulcanpower.com	1183 NW Wall Street, Suite G	Bend	OR
Idaho Department of Water Resources	Neely	Ken	208.287.4852	ken.neely@idwr.idaho.gov		Boise	ID
Nevada Geothermal Power Inc.	Nelson	Ryan	866-688-0808	ryan@nevadageothermal.com			
Springfield Utility Board	Nelson	Jeff	541.746.8451	jeffn@subutil.com	PO Box 300	Springfield	OR
Utility Energy Forum	Nelson	Guy	541.994.4670	gnelson181@aol.com	PO Box 255	Lincoln City	OR
Geothermal Education Office	Nemzer	Marilyn	800.866.4436	mnmemzer@marin.org	664 Hilary Drive	Tiburon	CA
Geothermal Education Office	Nemzer	Marilyn	800.866.4436	mnmemzer@marin.org	664 Hilary Drive	Tiburon	CA
DOGAMI	Niewendorp	Clark	971-673-1540	clark.niewendorp@dogami.state.or.us	800 NE Oregon St., Suite 965	Portland	OR