

# USING THE EARTH'S ENERGY

## Arizona Geothermal Direct Use Conference

MAY 18, 2006 • FIESTA INN • TEMPE, ARIZONA

### Why Geothermal?

Heat, from the earth's interior, can be extracted from hot water or rock and used to heat buildings, greenhouses, water and more. Using geothermal heat in this manner is known as "direct use." Heating with renewable geothermal energy can drastically reduce or eliminate natural gas, propane or electricity use.

Arizona possesses a substantial geothermal resource that can be developed for direct use applications, which will stabilize energy bills, reduce energy costs, and increase energy independence. This one-day conference will provide comprehensive information on the state's geothermal resource, potential for development, project examples and steps to getting projects in the ground.



### Conference Agenda

▶ **8:00-8:30 a.m.**

#### Welcome

Lee Allison, Director, Arizona Geological Survey  
Arizona Public Service Company

▶ **8:30 -10:00 a.m.**

#### Introduction to Geothermal Resources in Arizona

The first panel will provide the basics of geothermal energy and help familiarize you with ways geothermal energy can be used. The session will also cover where geothermal resources are located in our state, the quality of the resource and the economics benefits of developing geothermal energy.

##### Geothermal Economics, Risks and Opportunities

*Roger Hill, Senior Member of the Technical Staff,  
Sandia National Laboratory*

##### Uses of Geothermal Energy

*Jim Witcher, Principal, Witcher & Associates*

##### Geothermal Resources in Arizona

*Paul Morgan, Professor, Northern Arizona University*

##### Drilling and Evaluation of Geothermal Resources

*Jim Witcher, Principal, Witcher & Associates*

▶ **10:00 – 10:20 a.m. Break**

▶ **10:20 – 11:30 a.m.**

#### Basics of Permitting a Geothermal Project

Project permitting is crucial to development of a successful geothermal project. Projects may be subject to water extraction and re-injection rules and drilling regulations. Rules and regulations vary depending on the location of the project and ownership of the land. These topics will be covered by the permitting agencies.

##### Permitting for Drilling Projects on State Lands

*Steve Rauzi, Administrator, Arizona Oil and Gas  
Commission*

##### Permitting for Drilling Projects on BLM Lands

*Kermit Weatherbee, National Geothermal Program  
Manager, Bureau of Land Management*

##### Water Use Regulations

*To Be Determined*

▶ **11:30– 12:45 p.m.**

### **Luncheon**

Attendees will be free to network during the luncheon sponsored by Arizona Public Service Company.

▶ **12:45– 2:00 p.m.**

### **Planning and Financing a Geothermal Project**

Geothermal projects offer long-term savings in fuel costs but require an upfront investment. This panel will discuss creating business plans and options available to finance projects.

#### **Developing Business Plans and Marketing for a Geothermal Project**

*Jack Whittier, Program Manager, McNeil Technologies, Inc.*

#### **Financing Options**

*Liz Battocletti, Senior Associate, Bob Lawrence & Associates*

#### **Performance Contracting as a Financing Method**

*Dan Hand, Project Development Manager, Chevron-Texaco*

▶ **2:00– 4:00 p.m.**

### **Case Studies of Direct Use Applications**

Experts who developed or currently manage direct use projects will share their insights and advice on using geothermal energy for heating needs. This session will provide essential information on the benefits and challenges of using the earth's heat.

#### **Greenhouses**

*Alexander Masson, Owner, Masson Radium Springs Farm, New Mexico*

#### **Space Heating**

*Brian Fowler, Owner and President, Geosource Distributors, Inc.*

#### **Aquaculture**

*Leo Ray, Owner, Fish Breeders of Idaho*

#### **Government District Heating**

*Ken Neely, Hydrogeologist, Idaho Department of Water Resources*

#### **Spas**

*Lee Foerstner, Owner, River Bend Hot Springs, New Mexico*



▶ **3:00– 3:20 p.m. Break**

▶ **4:00– 4:45 p.m.**

### **Government Policies and Programs Supporting Geothermal Development**

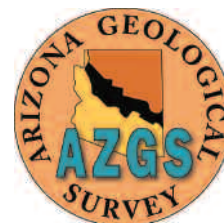
Supportive policy is a key driver for the development of renewable energy resources. This session will provide information on state and federal programmatic and financial policy intended to stimulate and support geothermal development.

#### **Arizona Renewable Energy Standard and Tariff**

*Amanda Ormond, Principal, Ormond Group*

#### **U.S. Department of Energy Geothermal Programs**

*Roy Mink, Program Manager, Geothermal Technologies Program, U.S. Department of Energy*



# ***Using the Earth's Energy*** **Arizona Geothermal Direct Use Conference**

**May 18, 2006**

**Fiesta Inn  
Tempe, Arizona**

Complete the information below

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Organization: \_\_\_\_\_

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Registration for the event, including meals and materials, is \$45.00.

**Please make check or purchase order payable to:**

Northern Arizona University

**Fax or mail to:**

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**For more information visit:**

**[ses.nau.edu/geothermal](http://ses.nau.edu/geothermal)**

**Register by May 4, 2006**

**Space is limited**