

UTAH GEOTHERMAL WORKING GROUP

Minutes/Summary

Site/Time: The fourth meeting of the Utah Geothermal Working Group was held February 24, 2005 at the Utah Department of Natural Resources, 1594 W. North Temple in Salt Lake City, Utah.

Objectives: (1) inform and educate members about geothermal resources and development in Utah, and (2) help remove barriers to geothermal development by creating a set of action items to focus the working group.

Facilitation: Kathleen Rutherford (Resolve, Inc.), Jon Allred (Utah Energy Office), Bob Blackett (Utah Geological Survey)

The meeting convened at 10 a.m. followed by Introductions of all participants.

- Activity updates: GeoPowering the West – Patrick Laney, Idaho National Lab; Utah laws and regulations, Federal production tax credit and DOE’s geothermal budget – Gordon Bloomquist, Washington State University Energy Program; Geothermal website update – Bob Blackett, Utah Geological Survey. See Attachment A.
- Crystal Hot Springs (Bluffdale) geothermal projects – Utah State Prison space/water heating, Bluffdale Flowers greenhouse space heat, Hi-Tech Fisheries aquaculture – Jon Allred (UEO), Bruce Munson (Johnson Controls). See Attachment B.
- Ground-water mapping at Salt Wells geothermal area, Nevada using the Aquatrack technique, Mr. Brett Pinegar, Willowstick Technologies. See Attachment C.
- Working Lunch. New Utah Department of Natural Resources Director, Mike Styler, will be available to discuss the Huntsman administration’s natural resource and energy-related policies. Kathleen Rutherford, Resolve, Inc. description of the recently completed Geothermal Collaborative EIS Public Comment Analysis. See Attachment D.
- UGWG Action Plan – facilitated discussion and development of a plan to (1) help educate the public about the benefits of geothermal energy, and (2) create guidance for removing barriers to geothermal development. The objective within the next few months is to develop a strategic plan. See Attachment E.
- Meeting adjourned at 4 p.m.

Attendee list for UGWG meeting – February 24, 2005, DNR, SLC, Rm. 1050
In order received

- | | | |
|----|-----------------|--|
| 1. | Susan Juch Lutz | University of Utah, Geology & Geophysics |
| 2. | Shem Jessop | South Valley Impulse Clinic |
| 3. | Sarah Wright | Utah Clean Energy Alliance |
| 4. | Patrick Laney | Idaho National Laboratory |

5.	Sandy Glatt	U.S. DOE, Central Region
6.	Ed Hickey	Utah Division of Water Quality
7.	Candace Cady	Utah Division of Water Quality
8.	Rick Allis	Utah Geological Survey
9.	Bob Blackett	Utah Geological Survey
10.	Jon Allred	Utah Energy Office
11.	Kathleen Rutherford	Resolve, Inc.
12.	Gordon Bloomquist	Washington State Univ. Energy Program
13.	Bruce Munson	Johnson Controls
14.	Andrea Coon	Utah Public Utilities
15.	Dave Tabet	Utah Geological Survey
16.	Mike Styler	Utah Department of Natural Resources
17.	Bob Henricks	U.S. Bureau of Land Management
18.	Frank Gallardo	Chevron Energy Solutions
19.	Jaime Luna	Chevron Energy Solutions
20.	Bryce Tripp	Utah Geological Survey
21.	Brett Pinegar	Willowstick Technologies
22.	Paul Rollins	Willowstick Technologies
23.	Glade Sowards	Utah Energy Office
24.	Nykole Littleboy	Utah Energy Office
25.	Chris Atkins	University of Utah
26.	Joe Moore	Energy and Geoscience Institute
27.	Mike Wright	U.S. Department of Energy
28.	Marge Tempest	Utah Division of Water Rights

ATTACHMENT A

Patrick Laney, Idaho National Laboratory, – DOE's GeoPowering The West program

DOE Geothermal Technologies Program - \$25M Program with components: Resource Development; Enhanced Geothermal Systems (EGS) Technologies; Systems Development; Technology Verification; Technology Deployment (includes GeoPowering The West)

Past GPW Activities:

State Energy Program Grants - 14 States
Working Group Meetings - OR, ID, UT, NM, WA, AZ, TX
Strategic Plans - ID, OR, NM
State Summits - Boise 2003, Palm Springs 2004
Field Trips
Trade Missions - Idaho, Alaska
Subcommittee Meetings

State Energy Program (SEP) Grants, New Projects & Activities

Conduct educational forums
Host a statewide geothermal conference
Provide technical expertise to areas interested in developing their geothermal resource
Identify barriers to the use of geothermal resources. Define ways to overcome barriers
Conduct a Trade Mission
Conduct Farm Bill renewable grants workshops
Update and distribute the state's geothermal energy publications
Develop a GIS website to disseminate geothermal information
Provide cost-benefit analysis for the priority development of geothermal projects
Broadly characterize the current state of geothermal development
Estimate geothermal district heating and cooling (DHC) system sizes
Increase the use of geothermal energy on Tribal lands
Finalize a GeoPowering the West working group
Develop an action plan and hold regular informational meetings
Prepare case studies of four developed sites and two high potential sites
Prepare a case study of the benefits and costs of geothermal direct use applications

Upcoming Meetings

PowerGen – Renewables - Las Vegas, NV March 1-3
Utility Geothermal 101 - Yakima, WA March 29th
Texas Working Group – Austin, TX March 30th
Utility Geothermal 101 - Boise, ID April 13th
Idaho Working Group - Boise, ID April 14th
Utility Geothermal 101 - Salem, OR May 11th
New Mexico Working Group - Las Cruces, NM May 10-11
Electric Utilities Geothermal Workshop – Reno, NV September 24
GRC Annual Meeting - Reno, NV September 25-28
GPW State Summit - ???

GPW Calendar - www.Geothermal-Biz.com

R. Gordon Bloomquist, Ph.D., Washington State University Energy Program, Utah laws and regulations relating to geothermal ownership, development, and use; federal geothermal production tax credit; DOE geothermal budget.

Definition of Geothermal: Statute and No.: Geothermal Resource Conservation Act, Section 73-21-3, Utah Code Annotated (UCA) 1953. “Geothermal resources” means:

- a. The natural heat of the earth at temperatures greater than 120° C; and
- b. The energy, in whatever form, including pressure, present in, resulting from, created by, or which may be extracted from the natural heat, directly or through a material medium. Geothermal resource does not include geothermal fluids.

“Geothermal fluid” means water and steam at temperatures greater than 120° C. naturally present in a geothermal system.

Geothermal is Characterized as: Water

Ownership: Statute and No.: Geothermal Resource Conservation Act, UCA, Section 73-21-4.

Ownership of geothermal resource derives from an interest in land and not from an appropriated right to geothermal fluids. This chapter shall apply to all land in the state of Utah, including federal and Indian lands to the extent allowed by law. . . In effect, the right to geothermal resource is based on ownership of the mineral rights or surface rights, which are usually obtained by direct ownership or by leasing. Because of the potential relationship between geothermal fluids and groundwater resource, however, an approved application to appropriate geothermal fluids is required prior to the production of geothermal fluids from a well (UCA, Section 73-21-8).

Legislative Reference: Utah Code Section 73-22-1 to 73-22-9, and 59-12-02

Leasing

In known geothermal areas lands have been withdrawn and are available for sealed bid competitive leasing upon nomination by a potential lessee. Non-withdrawn lands are available from over-the-counter leasing.

Utah State Agency Responsible for Leasing of State Lands: Utah School and Institutional Trust Lands Administration

Lease Terms:

Primary: 10 years

Renewable: Primary term extendable if spudding or drilling wells. The lease is extendable indefinitely so long as in production.

Rentals: \$1.00 per acre per year escalates to \$4.00 per acre per year after expiration of primary lease term.

Royalties: 10% on production or minimum of \$4.00 per acre per year.

Utah Utility Policy

Utah Code Annotated §54-2-1(30), §54-2-1(16),(26), §54-4-1-25.

Nature of Service: Water corporation Public; Heat corporation (artificial heat)

Public Use: NO

Certificates of Public Convenience and Necessity: YES

Utah's public utility definition covers both water and heat corporations, as follows:

The term "public utility" includes every . . . gas corporation, electric corporation. . . water corporation . . . heat corporation [etc.] where the service is performed for or the commodity delivered to the public generally or in the case of a gas corporation or electric corporation where the gas or electricity is sold or furnished to any member or consumers within the state of Utah for domestic, commercial or industrial use . . . [Utah Code Annotated §54-2-1(30).]

Section 54-2-1 further defines water and heat corporations as follows:

The term "heat corporation" includes every corporation and person, their lessees, trustees and receivers or trustees appointed by any court whatsoever, owning, controlling, operating, or managing any heat plant for public service within this state.

The term "water corporation" includes every corporation and person . . . owning, controlling, operating or managing any water system for public service within this state...

State Regulation Of Geothermal District Energy Systems

Key regulatory questions are under what conditions and to what extent do geothermal district energy systems fall under the jurisdiction of public utility or public service commission, and will thus be treated as regulated entities as distinguished from

unregulated entrepreneurial businesses. The answers to these questions can and will almost assuredly shape decisions on the size and scope of geothermal district energy systems, their ownership, their arrangement with customers, and even the technologies they employ.

Certification

In order to construct or operate utility facilities or provide service, many states require prospective suppliers to obtain a “certificate of public convenience and necessity” or its equivalent from the state commission.

Applicants typically must show that there is adequate demand for the proposed service, that suitable financing is available to complete construction of the system, that the system will be able to provide the service as proposed and that the service will not duplicate existing service in the area.

Rate Regulation

The prospect of commission rate regulation, perhaps even more so than certification, can present serious concerns for developers of geothermal district energy systems.

Under traditional practices, utility commissions calculate allowable rates based on the utilities “cost of service”. The rate of return is thus determined by the state commission, rather than by the market forces which govern competitive enterprises.

Few commissions are accustomed or equipped to address the kinds of risk issues associated with geothermal district energy development and unfamiliar market conditions, and that in itself can discourage developers and investors considering these systems.

Other Regulatory Concerns

Public utility status can discourage geothermal district energy development in any number of ways.

Prospective geothermal district energy system developers may be concerned, that revenues from small-scale systems cannot justify the considerable financial and administrative burden of the utility regulatory process, especially in rate setting proceedings.

“Public utility” status under state law could preclude eligibility for important federal tax credits.

The Energy Tax Act of 1978, adopted as part of the National Energy Act, authorized an additional 10% business investment credit for investments in “equipment used to produce, distribute or use energy derived from a geothermal deposit.” However,

geothermal equipment otherwise eligible for the credit was expressly made ineligible if it was “public utility property”.

State Exemptions from Regulation

If geothermal district energy developers propose to supply steam and/or hot or chilled water covered by state utility definitions in situations considered “public uses”, then they will generally be subjected to commission regulation unless some other state law or judicial decision exempts their activities.

The exemptions are usually statutory. The first consists essentially of refinements and codifications of the “public use”. These exemptions cover specific “limited distribution” situations, and can bear directly on various district energy configurations.

The second exemption category applies to certain types of self-regulated entities, such as municipal corporations and cooperative associations, which are thought to be adequately supervised and controlled by those they serve.

The third category reflects state policy choices to encourage the use of renewable resources, e.g. geothermal or development of alternatives to conventional energy supplies, including district energy.

States seriously interested in encouraging the development of geothermal district energy systems should give careful consideration to the enactment of specific legislation explicitly dealing with district energy activities. Such legislation could take the form of limited commission oversight, but with an exemption from traditional cost of service rate regulation to a complete exemption from utility or service commission jurisdiction for all district energy related activities.

Constitutional or Statutory Authority to Engage in Geothermal District Energy Development and Operation

Geothermal district energy systems may be developed by either the private or public sector. If development is contemplated by a public sector entity, its ability to proceed will in all likelihood be contingent upon authority granted to it by the state.

General Law Governments

General law cities and counties, absent statutory or constitutional authorization, may not engage in geothermal district energy development activities. The authority need not necessarily specify such activities but must be clearly broad enough to include such activities. Authority must extend to explorative drilling for resource development, project financing, system construction including the ability to acquire property by condemnation, system operation, and right to service customers both within and outside their boundaries.

Home Rule Governments

Unlike general law governments, home rule cities and counties have some degree of power to exercise local self-government and to take initiative in local matters without the need for additional statutory authorization.

Constitutional home rule provisions offer enumerable specific powers as within the area of local control. For example, Colorado Constitution Article XX, § 1. provides that home rule cities shall have the power to construct and operate utility systems, including heating systems.

Special Districts

Special districts are units of local government established by law to engage in or carry out a single or a limited number of functions. They may be created directly by state legislatures under special statutes that define their purposes, powers, boundaries, and operational procedures, or in other cases the legislature may enact a general enabling statute providing local authority to form a particular type of district.

If existing governmental units are not empowered to engage in the full range of activities required by geothermal district energy development, it may be politically preferable to obtain new legislative authority designed specifically to meet the needs of the project than to amend existing statutes.

This could be especially advantageous in the area of financing where many states have rather severe restraints on financing by general purpose governments.

Special district boundaries and taxing areas can be tailored to the proposed service area of the district energy system.

In addition, because in many states private entities supplying district energy service would be considered to be public utilities and regulated as such, special purpose districts would in all likelihood be exempt from such regulation.

Federal Production Tax Credit

Passed into law in 2004 and extended to geothermal projects

1.8 cents per kilowatt hour produced for 5 years

One year window—project must be on line by January 1st, 2006

Must choose between Investment Tax Credit or Production Tax Credit

Allows geothermal to compete successfully against wind, natural gas, etc.

The President's budget submittal to Congress two weeks ago supported extending the Federal PTC for two years, but only to wind and biomass projects.

If extended, two year eligibility would extend to January 1st, 2008.
NEED SUPPORT of Utah Senators and Representatives
Capital Switchboard: Ph. 202.224.3121

www.senate.gov www.house.gov

DOE Budget Issues

US DOE Geothermal Budget has continued to shrink.

—\$30 million—2002

—\$25 million—2005

—\$23 million—2006

In addition more and more money is being earmarked for special projects.

Result: increasingly difficult to maintain viable programs to reach long term objectives.

Strategic Plan

US DOE Strategic Plan does not include any Direct Use elements.

States with significant direct use potential need to quantify same and provide information to Roy Mink geothermal program manager.

Remember direct use can include space heating, industrial process, agricultural product dehydration, green housing, aquaculture, and space cooling and refrigeration.

ATTACHMENT B

Jon Allred, Utah Energy Office and Bruce Munson, Johnson Controls, Crystal Hot Springs Utah State prison heating project, Bluffdale Flowers greenhouses, and Hi-Tech Fisheries aquaculture presented to the Utah Geothermal Working Group, February 24, 2005.

Utah Department of Corrections, Oquirrh 4 facility heating project:

- Located in Draper, Utah, near Point-of-the-Mountain
- Crystal Hot Springs is a series of natural warm springs and ponds. Temperatures reported at 195°F in a 400 ft deep well in 2003, consistent with other reports.
- Used since pioneer times for stock watering, recreation, other agricultural uses
- Since pioneer times until recently, the area has been rural but now faces heavy urban development pressure
- Crystal Hot Springs is in a good geographic position for more intensive use
- Huntsman administration has suggested that the prison might need to be relocated in the future
- Regional drought conditions have prevailed over the past six years.

Utah Department of Corrections – Draper Prison Oquirrh 4 wing heating project designed to reduce facility operation and maintenance costs using the available geothermal resource.

In 1983, the Utah Department of Corrections attempted a geothermal heating project, installing a geothermal well and heat exchanger to supply space heat to the Oquirrh 4 facility. The system operated for several months supplying adequate space and water heating for the facility. But it was shut down due to excessive corrosion, scale and fouling of components.

In 2003, UDC contracted with Johnson Controls, an energy service company (ESCO) to do Phase I of the Oquirrh 4 geothermal project to re-establish a geothermal heat and culinary water system as follows:

- Supply building heat and hot water to Oquirrh 4 buildings totaling 40,000 square feet
- Hollow masonry, single pane windows, dampers fixed
- Use existing circulation system with automatic back-up to campus steam system
- Installation cost \$519,000
- \$68,000 minimum annual savings in avoided cost of fossil fuel
- 7.6 year payback on investment
- 17 year equipment life

Phase II geothermal development in 2005 calls for:

- Replace the fixed speed 10-horsepower geothermal well pump by a 25-horsepower variable speed drive that can potentially deliver up to the full water right of 750 gpm
- Add a second heat exchanger
- Expand building heat and hot water to the prison furniture shop, sewing shop and Special Service Dormitory that may total 252,350 square feet of building area.
- Geothermal system success may require improved fan-coil heaters, upgraded insulation and digital controls and improvements to the existing back-up boiler to better fit the geothermal system

Bluffdale Flowers Geothermal Greenhouses:

Commercial greenhouses established on property adjacent to the prison in 1981 by Utah Roses using 450 gpm geothermal water from 1,000 ft deep well. Utah Roses sold the facility in 1998 and is now operated as Bluffdale Flowers.

- Facility includes 250,000 sq ft of greenhouses growing roses and ornamental flowers.
- Presently uses a 40-hp lineshaft pump at a well depth of 200 ft
- Space heat provided through plate-and-frame heat exchanger (input temp – 190°F, discharge temp – 140°F)
- No backup system, winter temps may dip to near freezing in greenhouses
- Bypassing heat exchanger causes rapid scaling in capillary piping.
- Re-injection not possible due to artesian conditions of wells
- Company is in process of expanding greenhouse space to 500,000 sq ft and include natural gas boilers to re-heat discharge water to 180°F in winter for re-circulation and eventual cascade to Hi-Tech Fisheries

Hi-Tech Fisheries and Crystal Springs Fisheries

Discharge water from Bluffdale Flowers and the Utah State Prison is cascaded to two aquaculture facilities. Hi-Tech Fisheries is located just outside the prison, raises tropical fish using geothermal water cascaded and cooled in pipes, ditches, and ponds to 80°F from the space heating projects. Many of Hi-Tech's fish originate in Lake Malawi (Africa). Crystal Springs Fisheries uses 80°F water from Crystal Pond to raise cichlids (African tropical fish).

ATTACHMENT C

Brett Pinegar, Willowstick Technologies, Groundwater mapping at Salt Wells geothermal area, Nevada using the Aquatrack technique,

The challenge of mapping subsurface water resources, organizations frequently spend considerable time and money trying to:

- Map groundwater
- Locate subsurface leaks and the paths that they take
- Delineate contaminated groundwater and reaction fronts
- Determine the location of valuable subsurface resources, such as areas of hot water, steam, oil and gas

Typically, organizations drill wells and conduct resistivity / electromagnetic (EM) surveys to assess the location of subsurface water. However drilling numerous wells is expensive and invasive, while resistivity / EM is rarely able to penetrate to sufficient depths to support effective decision-making.

Willowstick has developed a patented geophysical technology, known as AquaTrack(tm), that maps, tracks, and monitors groundwater resources. AquaTrack provides accurate and detailed information about the footprint and flow paths of groundwater. It works by:

- Energizing a water-bearing zone with an AC current. As the AC current flows through the water a magnetic field is generated
- Measuring the magnetic field at multiple points on the surface using patented AquaTrack field system.
- Employing mathematical algorithms to reduce field data and prepare contour maps of subsurface water footprint.

AquaTrack distinguishes itself from other geophysical technologies by:

- Mapping deeper (to depths greater than 1km)
- Delivering greater accuracy and resolution
- Being less intrusive than drilling additional wells
- Creating more value per dollar spent

AquaTrack used for mapping of the Salt Wells, Nevada geothermal area.

ATTACHMENT D

Kathleen Rutherford, Resolve, Inc., description of the recently completed Geothermal Collaborative EIS public comment analysis prepared for the National Geothermal Collaborative (www.GeoCollaborative.org).

Final report is: “Geothermal Outreach Principals and Comment Analysis”, by Laurie McClenahan, Curtis Williams, and Andrew Gentile, MHA Environmental Consulting, Inc.

Purpose – To quantitatively and qualitatively analyze public comments recorded in federal and state environmental and permitting documents for geothermal projects to discern what categories of interest and sectors are involved and which issues they raise.

Use – To design a set of recommended principles for geothermal developers, government and policy makers in developing effective outreach programs.

Analysis represents review of 3,787 comments on eight geothermal development locations in the western U.S. It included a span of proposed actions ranging from a 1979 EIS for geothermal leasing in Gifford-Pinchot National Forest to a 2003 proposed 185 MW project at the Salton Sea geothermal field.

Comment analysis indicated that the comments and issues on geothermal development varied widely, but did not differ substantially by project, geographic region, physical setting, or time period.

Comment analysis also indicated that outreach to the varied stakeholders interested in geothermal development is vital to the success of a project and should result in a reduced schedule for environmental review and permitting.

Key comments addressed effects on air quality, water quantity/quality, recreation, visual resources, noise, and biological resources. Additional issues included project alternatives, mitigation measures, and hazards.

Recommended outreach principles and approaches

- Wide variety of stakeholders participate in the environmental review process
- Many would benefit from education about the need for, impacts of, and benefits of geothermal energy projects
- Geothermal industry and regulatory agencies are the reports intended audience

Basic outreach principles

- Educate about the need for alternatives to traditional energy sources
- Educate before proposing a project
- Establish relationships with key parties in advance of formal review
- Maintain communications throughout the permitting process, construction and operations

Target audience and outreach methods – framework for research, public education, and early public input – objectives include

- Disseminate educational materials
- Provide monitoring and research to enhance availability of data
- Establish and early dialogue with potential interested parties
- Develop mitigation approaches to key impact concerns

Methods include

- Develop informational materials about geothermal development and associated effects

- Prepare standard quality control and reporting for monitoring air, water, and other impacts
- Identify and publish industry-wide approaches to mitigation
- Define techniques for early and consistent public education and involvement
- Establish a project-specific point of contact for stakeholders
- Meet with concerned parties regularly

Outreach to government agencies – staff and decision makers involved in the process are a critical target audience and play an important role in communicating knowledge and understanding to others.

Outreach to policy makers – legislators and agency board members involved in development of rules and regulations are more interested in large-scale benefits and impacts of geothermal development. Key is to supply them with succinct and timely information, plus keep them abreast of emerging issues.

Topics for education in outreach efforts – although an extensive number of issues, several occur regularly. They are:

- Emphasizing the benefits of geothermal energy
- Describing the project and purpose clearly
- Outlining the environmental review and permitting process
- Explaining common misconceptions about geothermal development
- Identifying effective mitigation and monitoring approaches to impacts
- Targeting interested parties for outreach

ATTACHMENT E

UGWG Action Plan – facilitated discussion and development of a plan to (1) help educate the public about the benefits of geothermal energy, and (2) create guidance for removing barriers to geothermal development.– Kathleen Rutherford, Resolve, Inc.

Questions For Breakout Groups:

1. What is our window of opportunity?
 - Push for more types of energy sources
 - Cyclic nature of O& G prices
 - PTC & Utah renewable energy group to promote GT
 - Potential for DU
 - WGA

2. What are negative consequences of inaction?
 - Continuing dependence on fossil fuels
 - Missing opportunities for entrepreneurs
 - If don't address issues (water rights) will impede development in future

3. What could be affected or changed in a positive consequences in 3-5, 5-10 years if did something now?
 - Include GT in pTC
 - QF, independent power producers, change 3 mw cap, while redefining for wind, then
 - Utility greentags defined state by state instead of pacific nw
 - Needs for resource assessment

4. What future desired result or change in the current situation is going to require our persistence & perseverance?
 - Need to create a market
 - Utah knowledge base, regulatory process guide
 - Ongoing need for education, outreach

5. What bold new risks do we need to take?
 - Balanced energy portfolio, coal, renewables
 - Partner-coalitions

What is working that needs to be carefully watched?

- Resource databases
- Keep communications going

Group activities in next year.

- White paper lead – 3 months
- PTC extension

RPS -

Involvement in QF regulatory proceedings

Create market – green pricing program/tags

Partnership w/ other groups production interests

Action components

Education – Utah knowledge base, geothermal how-to

Project proponents – who/where/what

Collect and post case-studies (UCEA is working on complete picture for renewables.

Bob, Rick A., Jon A., Jack Hamilton, Joe, Nykole, Gordon.

Rep to meet with Sarah's group – Nykole

White paper – 1 pg, GT options, opportunities and issues; reliable, economic; circ draft language by march 24; Mar 2 @ 3:00 pm

Is it going to come on line?

Ptc requires industry

State based RPS, Ure & Becker dialog for nrg policy; ongoing monitor at leg & gov office, NCSL; cost study with other renewable groups; ??

Involvement in qf regulatory proceedings;

Create markets, engage industry people in white paper

Partnering w/other groups; experience in other states; IND, ORGs, ID, invite; bring ncls cover gt, solar, wind – cost share; Get partners to go to follow gov't sessions on energy; house senate joint public utilities technology interim committee – meets every month.

Education – education from project proponents – who, where guide – Gordon's DU guide for Utah; website links, survey users, elicit interest in potential direct-use apps; possible workshop for DU users.

Assets to cultivate?

Limits on removing old barriers?

Strategic objectives

Specific

Measurable

Action-oriented

Reachable

Timeline

Strategic juncture analysis

How to keep interest framed w/out price of oil.

Engage industry; white paper due in one month;

Upgrade webpage w/links to recent GHC bulletin (v. 25, no. 4), farm bill

www.geocollaborative.org - randy manion

Primer for legislators on ncs1's website.

Notepad notes

www.geocollaborative.org

Strategic Juncture Analysis

- How to sustain interest in renewables not tied to market price

Geothermal White Paper

- UCEA is working on complete picture for renewables
- Subcommittee consists of Bob Blackett, Rick Allis, Jon Allred, Jack Hamilton, Joe (Moore?), Nykole Littleboy, and Gordon Bloomquist to meet during first week of March 2005 (Wed., Mar. 2, 3 pm in UGS conference room, Gordon will teleconference in).
- White Paper will consist of 1 page to outline Utah geothermal options, opportunities, and issues. Paper will address reliability and economics of geothermal. Will it come on-line when we want it?

Federal Production Tax Credit Extension

- Not much to do other than encourage writing of letter of support from Huntsman Administration (?). This requires industry participation.

Renewable Portfolio Standard

- Monitoring energy policy at the legislative level and governor's office
- Work with NCSL for briefings
- Partner with other renewable technologies – DOE special project activities
- Involvement in qualifying facility (QF) proceedings – Timeline is tight, Rick Allis and Sarah Wright to explore.

Create market green pricing program/tags

Partnering with other groups

- Production interests
- Ask other states

Education

- Utah knowledge base
- Project proponents – Who/Where Guide
- Larger public
 - News articles – quarterly update from Nykole if funding available
 - Farm Bill funding

- Showcase successful projects - case studies to newspapers (Linda Nelson), press releases to proceed and follow events – Nykole
- Guidebooks – Gordon B. did “A Regulatory Guide to Direct Use Development – Utah” – should post on Utah geothermal website.
- Case studies – collect and post on geothermal website
- Education website
 - Links to landowners website(s), OIT GHC website
 - Survey users, elicit interest in potential direct use applications

Partnering Opportunities

- Independent organizations
- Industry involvement
- Bring in NCSL, cover geothermal, geo-heat pumps, wind-solar, etc. (cost share)
- Get partners to go to renewables policy development sessions (joint House/Senate public utilities committee(?)).

UGWG Action Plan

Questions/Answers for breakout groups

1. What is our window of opportunity?
 - 3 months, state energy planning process
 - O & G and Mining – get corporations involved
 - Cyclic nature of O & G prices
 - PTC and Utah Renewable Energy Group to promote GT
 - Potential for direct use opportunities
 - WGA’s Clean, Diversified Energy Initiative
 - QF Commission participants claim to own RECs (?)

2. What are the negative consequences of inaction?
 - Increasing dependence on foreign energy sources
 - Missing out on small entrepreneurial opportunities for direct-use geothermal
 - Continue with water rights issues – road blocks
 - Continued loss of investment opportunities – road blocks

3. What could be affected or changed in a positive direction in 3 – 5 or 5 – 10 years if we did something specific now?
 - Include geothermal in Production Tax Credit for a longer period
 - Deregulate geothermal district heating/cooling – utility definitions
 - Tack geothermal on to new wind projects (Mtn. Wind, Spring Canyon) – change caps on renewables.
 - Utility green tags on a state basis.
 - Resource assessments – broaden resource base, quantify it.
 - How would to price geothermal – QF process is 3 MW cap.

4. What future desired result or change in the current situation is going to require our persistence and perseverance?
 - Create carrot – create market
 - Create QF working group with utilities
 - Utah knowledge base – developers/others need to know where/who to go to – applies to regulatory process as well.
 - On-going education & outreach.
5. What bold new risks do we need to take?
 - Balanced energy portfolio – coal, renewables, others
 - Partner – coalitions across renewables
 - ID & address road blocks – i.e. QFs & water rights
6. What is working that needs to be carefully watched, preserved and protected?
 - Resource databases
 - Keep communication going (UGWG)
 - Core group – modest in size
 - Federal funding support
 - Showcase successful projects (i.e. DFCM – prison geothermal project)
7. What are current signs of the future happening now?
 - Rising energy prices – oil, gas, coal
 - Pacificorp IRP – 1400 MW from renewable sources
 - RPSs in surrounding states (NV – 15%, AZ – 2%, CO – 10%, CA, NM...16 states)
 - Energy security/vulnerability
 - Climate change, Kyoto Protocol
 - Governor's interest in energy and economic development – Fed. & State
 - Distributed power needs in west
 - Shrinking federal budgets
8. What is placing new limits on, or removing old barriers to our future?
 - Loss of PTC in Federal budget
 - PUC regulations for district heating – classify them as public utilities
 - Improving economics on energy price hikes
 - DOE strategic plan restricted to utility-scale power projects vs. Utah direct-use resources