STATE GOVERNMENT WORKSHOP ON
BARRIERS AND INCENTIVES OF
GEOTHERMAL ENERGY RESOURCES

MASTER

Quarterly Report
For Period August 1, 1978 - October 31, 1978

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I. INTRODUCTION

With funds from the United States Department of Energy, Division of Geothermal Energy, the National Conference of State Legislatures has undertaken a project to stimulate and assist the review of state policies that affect geothermal development.

The NCSL Geothermal Policy Project has the following work tasks:

- Prepare background material for state geothermal policy reviews;
- Develop specific geothermal profiles for target states;
- Stimulate state decisions to review geothermal policies;
- Assist states in their analysis of geothermal issues;
- Review state policy analyses and legislative actions; and
- Formally review the project's methods and results.

State assistance will be in the form of

A. Reference Materials

1. "Packet of Background Materials" -- a comprehensive gathering of information on the nature of geothermal resources and the various development opportunities available including important state legislation and research studies;
2. "Geothermal Pamphlet" -- an introduction to the nature of geothermal resources, their beneficial uses, the role of state policies and the NCSL Geothermal Policy Project;
3. "State Profile" -- a concise description of a state's leading policy concerns and potential benefits from geothermal development, including an outline of the location and character of the state's geothermal resources and their potential applications;
4. "Summary of State Actions" -- a summary of state study results and legislative actions taken during the year.

B. State Presentations and Technical Assistance

As part of the policy review process, the project will provide individual assistance at the request of the state. In the form of workshops or through more informal contacts, project staff will assist in such areas as analyzing policy alternatives, describing legislative action taken in other states, and identifying important studies, expert witnesses and concerned parties available for assistance.

C. Assistance from Experts

To insure that the policy reviews conducted are thorough and complete, the project is designed so that the states receive the expertise of all parties concerned with geothermal development. Participating in the multifaceted effort will be

- State legislators;
- State legislative staff;
- State and local officials;
- Geothermal developers, investors, utilities and other concerned private groups;
- Consultants from public and private research institutions; and
- Representatives of the Division of Geothermal Energy, U.S. Department of Energy.

This third quarterly report--covering the period of August 1 through October 31, 1978--includes a discussion of project activities in the areas of

- State Activities,
- Development of Project Materials, and
- Liaison Activities.

Potential problem areas also are identified and future plans are discussed including an assessment of prospects for future progress.

II. EXECUTIVE SUMMARY

In its third quarter of activity, the National Conference of State Legislatures' Geothermal Policy Project concentrated its efforts in working directly with project states.

The most important area of state activity was conducting seven workshops in five project states. The specific purposes of these workshops varied, but their overall objective was to set agendas for the policy studies in the individual states by outlining the range of issues that need to be considered to encourage the efficient development of geothermal resources and prioritizing those problem areas that appear most pressing. In two project states--New Mexico and Utah--project activities progressed further to the stage of considering specific actions the legislature could take to deal with the problem areas that had been identified as impeding geothermal development in their states.

In addition to planning and conducting the workshops, the project concentrated its efforts on preparing various materials for the policy review process in project states. Particular emphasis was placed on preparing state profiles to bring together and organize all available information on geothermal energy for each state. Also, background reports were prepared for those project states where specific policy areas were being reviewed and actions considered as solutions to existing problems.

III. ACTIVITIES

A. State Activities

1. Workshops

Seven workshops were held in project states during the third quarter.

For each workshop, planning efforts consisted of:

- Developing agendas,
- Recruiting resource persons,
- Developing state profiles and other workshop materials,
- Sending workshop announcements,
- Contacting attendees, and
- Overall meeting coordination.

Summaries of the workshops follow (see Appendix A for workshop agendas).

a. Hawaii (August 2)

A workshop on "State Legislative Issues in Geothermal Development" was held at the State Capitol in Honolulu, Hawaii. The workshop began project activities in the state and its goal was to set an agenda for the policy study--to determine the parameters for the study and also to prioritize the issues that need to be addressed. Representatives from the following groups attended the all-day meeting:

- Private officials, including developers and utility representatives,
- Hawaii Geothermal Energy Project and other university officials,
- Federal agencies,
- State agencies (legislative and executive), and
- County officials.

The major discussion areas during the workshop were:

- The Hawaii Legislature's role in geothermal energy,
- Geothermal development opportunities and problems in Hawaii,
- Hawaii in the U.S. Department of Energy Geothermal Program,
- Federal environmental standards applied to geothermal development,
- State geothermal policies and the needs of industry,
- Concerns of county government, and
- Regulations on leasing of geothermal resources and drilling for geothermal resources in Hawaii .

b. Utah (August 30)

A workshop on "State Legislative Issues in Geothermal Development" was held for the Utah Interim Legislative Committee on Energy and Natural Resources at the State Capitol in Salt Lake City, Utah. The purpose of the meeting was to outline for the committee members the range of issues that need to be considered to encourage the efficient development of geothermal resources and those problem areas that now appear most pressing.

In addition to overviews of geothermal development in the state and federal programs affecting Utah, presentations were made to the committee on two possible study areas outlining actions the committee may wish to consider in developing legislative recommendations. These areas were:

- "Issues in Resource Definition, Ownership and Field Utilization," and
- "State Policy Concerns in Direct Heat Applications."

c. New Mexico (September 15)

A workshop on "Problems in Geothermal Energy Development in New Mexico" was held for the Interim Legislative Committee on Natural Resources in Grants, New Mexico. The purpose of the meeting was to present testimony to the committee on problem areas impeding the efficient development of geothermal energy in the state. The following persons made presentations before the committee on actions they felt the legislature should take to encourage geothermal development:

- Representative Robert Grant, Albuquerque, New Mexico
- Thomas McCants, Private Rancher, Animas, New Mexico
- Harry Olson, AMAX Exploration, Inc., Denver, Colorado
- Edward Kaufman, Los Alamos Scientific Laboratory, Santa Fe, New Mexico

d. Utah (September 27)

Project staff met with the Subcommittee on Water and Public Lands of the Interim Committee on Energy and Natural Resources at the State Capitol in Salt Lake City, Utah, to begin the development of specific legislative recommendations for consideration in the 1979 session.

Two background papers were developed for the committee:

- "Background Report on Resource Definition"
- "Background Report on Direct Use"

This background material outlined the major issues that warrant legislative attention and described actions taken in other states.

e. Oregon (October 4)

A workshop on "State Legislative Issues in Geothermal Development" was held at the State Capitol in Salem, Oregon. The purpose of the meeting was to set an agenda for the legislative review of state actions to encourage geothermal development by ascertaining from individuals and organizations involved in geothermal development in Oregon what problem areas exist and what areas need to be studied. Representative from the following areas were invited to attend the meeting:

- Federal agencies,
- State executive agencies,
- State legislative officials,
- Local and regional agencies,
- Universities and research institutions,
- Private consultants,
- Private developers, and
- Public and municipal utilities.

The workshop was designed around a series of panels in the areas of:

- Exploration and Development: What Can the State Do To Encourage the Development of Geothermal?
- Electricity Production: What Can the State Do To Encourage the Use of Geothermal?
- Industrial and Agri-Business Applications: What Can the State Do To Encourage the Use of Geothermal?

In addition, presentations were made on federal and state programs affecting geothermal development in Oregon and on recommendations of the Oregon Inter-agency Geothermal Fluid Task Force.

f. New Mexico (October 13)

Project staff made a presentation before the New Mexico Interim Legislative Committee on Natural Resources at Carlsbad, New Mexico. The objective of the presentation, based on a "Background Report on Geothermal Policy" prepared for the committee's consideration, was to outline the problem areas that had been identified as hindering geothermal development and present options the committee could take in making legislative recommendations.

Options the committee might wish to consider, either in changing existing laws or programs or in implementing new programs, were presented in five areas:

- Legal Status of Geothermal Resources,
- Direct Use (Non-Electrical Applications) of Geothermal Energy,
- Energy Research and Development,
- Known Geothermal Resources Field, and
- Geothermal Leases.

g. Virginia (October 27)

A "Workshop on Geothermal Energy" was held for the Virginia Study Commission on Coal and Energy at the State Capitol, Richmond, Virginia.

The workshop initiated the program of geothermal policy review by the Virginia General Assembly. Its purpose was to give the study commission members an overview of geothermal energy and its potential uses in Virginia. Also, discussion was begun on what current state laws exist that will affect development of geothermal energy, what potential problem areas exist and what areas the legislature will have to address in dealing with geothermal development. At the conclusion of the presentations, a work plan was approved by the commission to guide the development of geothermal legislation.

2. Work Plans

As a result of the various workshops and meetings with key legislative contacts, final work plans were developed for:

- Hawaii,
- New Mexico,
- Utah, and
- Virginia (see Appendix B).

For each project state, the work plan outlines and prioritizes the areas to be addressed during the policy study and designates the organization taking the lead responsibility and a time deadline for each task.

B. Development of Project Materials

1. State Profiles

Preliminary state profiles were developed for:

- New Mexico (see Appendix C),
- Oregon (see Appendix D),
- Utah (see Appendix E), and
- Virginia (see Appendix F).

The profiles organize available information on geothermal energy for each state in the following categories:

- Description of geothermal resources
 - characteristics
 - location;
- Resource applications and economic value;
- Current state statutes and regulations;
- Areas of policy concern; and
- Contacts.

2. Packet of Background Materials

a. Workshop summaries

In cases where the information would be helpful in the overall policy review process--or where requested by state contacts--summaries of workshop proceedings were prepared. Workshop summaries were prepared for the:

- Hawaii workshop (August 2) on "State Legislative Issues in Geothermal Development" (see Appendix G),
- Utah workshop (August 30) on "State Legislative Issues in Geothermal Development" (see Appendix H),
- New Mexico workshop (September 15) on "Problems in Geothermal Energy Development in New Mexico" (see Appendix I), and
- Utah workshop (September 27) for the Subcommittee on Water and Public Lands (see Appendix J).

b. Background Reports

Background reports were prepared as part of the policy review process in Utah and New Mexico.

Two background reports were developed for the Utah Subcommittee on Water and Public Lands to assist in their development of legislative recommendations:

- "Background Report on Resource Definition" (see Appendix K) and
- "Background Report on Direct Use" (see Appendix L).

These reports presented detailed information on the two subject areas. The report on resource definition described the function of a definition of geothermal resources, gave details on existing definitions and presented comments on various considerations to pursue in deciding on a particular definitional approach. The report also included numerous attachments, including a bibliography, that gave more details on issues involved in defining geothermal resources. The second paper--"Background Report on Direct Use"--discussed the potential for direct heat applications, gave information on the economics of direct use as compared to conventional energy systems and delineated policy areas that should be addressed in encouraging direct use, including a discussion of actions taken by other states.

Secondly, a "Background Report on Geothermal Policy" was prepared for the New Mexico Interim Committee on Natural Resources (October 13 workshop in Carlsbad, New Mexico). The report was divided into five sections:

- Legal Status of Geothermal Resources,
- Direct Use (Non-Electrical Applications) of Geothermal Energy,
- Energy Research and Development,
- Known Geothermal Resources Field, and
- Geothermal Leases (see Appendix M).

Each section presented the issue areas and summarized the problems identified as unnecessarily hindering geothermal development. This information was followed by an outline of options that the committee could consider in making recommendations for legislative action. In addition to the background report, a package of reference materials was prepared which provided in-depth information on the issue areas.

C. Liaison Activities

1. U.S. Department of Energy, Division of Geothermal Energy

Project staff continued to participate in the regional activities of DOE/DGE and, in particular, in the development of regional commercialization plans to assure that the activities of the NCSL Geothermal Policy Project are closely coordinated with the policy development components of the regional plans. Activities consisted of:

- a. Attending two meetings (August 8 and October 27, Portland, Oregon) of regional officials involved in geothermal development to discuss federal activities in the Pacific region;
- b. Attending a quarterly planning meeting of contractors, government agencies and other entities involved in the Eastern Region program (September 19, Johns Hopkins University, Laurel, Maryland); and

c. Meeting with DOE/DGE regional officials in Washington, D.C. to brief them on current project activities.

2. United Indian Planners Association

Project staff attended the Annual Planning Conference of the United Indian Planners Association in Minneapolis, Minnesota, from August 20-24, 1978. At the conference, a presentation on the NCSL Geothermal Policy Project and tribal-state policy issues was made at a "Geothermal Energy Workshop." Also, information on Indian geothermal resources was obtained, and a series of meetings was held with UIPA staff concerning future coordination of the NCSL and UIPA geothermal projects.

IV. VARIANCES OR PROBLEMS

A potential variance has been identified between the objectives as set forth in the original project goals and the actual work accomplishments of the project. The project proposal calls for a comprehensive review of state policies affecting geothermal development. However, the scope of the policy reviews undertaken in project states has been reduced because of the project's late start (as explained in the last quarterly report). The work plans for four project states, included in this report, reflect a prioritization of issues in these states and an overall strategy to continue working with current project states in the project's second year.

V. PLANS FOR FUTURE REPORTING PERIODS

During its final quarter, the project will concentrate its efforts on assisting states in developing specific recommendations for legislative action. This work will consist of two major activities:

- A. Working with interim legislative committees to develop specific recommendations for submission in 1979 legislative sessions, and
- B. Developing background reports that can be used to initiate policy reviews and development of legislative proposals when legislative sessions begin in January, 1979.

VI. ASSESSMENT OF PROSPECTS FOR FUTURE PROGRESS

The prospects for future progress continue to look bright. The project, during its second quarter of activity, began actual involvement in the states; and the reception to the project by persons in both the legislative and executive branches of all project states was very positive. The level of cooperation and the interest of all members of the geothermal community in the states--both public and private officials--has been high.

STATE LEGISLATIVE ISSUES IN GEOTHERMAL DEVELOPMENT

A Workshop for Hawaii
August 2, 1978

9:00 - 9:30 a.m. INTRODUCTION

Richard Neill, Consultant, State Senate Energy & Natural Resources Committee; Rutherford Harris, Director, NCSL Geothermal Policy Project

9:30 - 10:00 GEOTHERMAL DEVELOPMENT OPPORTUNITIES AND PROBLEMS IN HAWAII:
A PRELIMINARY OVERVIEW

Eugene Grabbe, Manager, State Center for Science Policy & Technology Assessment, Hawaii Department of Planning and Economic Development

10:00 - 10:30 HAWAII IN THE U.S. DEPARTMENT OF ENERGY GEOTHERMAL PROGRAM

Ronald Toms, Pacific Region Manager, Division of Geothermal Energy, U.S. Department of Energy
Donald Elmer, Pacific Region Legal Affairs Officer, Division of Geothermal Energy, U.S. Department of Energy

10:30 - 11:00 BREAK

11:00 - 11:30 FEDERAL ENVIRONMENTAL STANDARDS APPLIED TO GEOTHERMAL DEVELOPMENT

Robert Hartley, Geothermal Program Manager, U.S. Environmental Protection Agency

11:30 - 12:00 WORKING SESSION

What problems do you see in federal geothermal programs and environmental requirements? What should the federal government do? What should the state be doing?

12:00 1:30 p.m. LUNCH

1:30 - 2:30 STATE GEOTHERMAL POLICIES AND THE NEEDS OF INDUSTRY

A panel of representatives from AMFAC, Geothermal Exploration and Development Corporation and the Hawaii Electric Company

2:30 - 3:00 CONCERNS OF COUNTY GOVERNMENT

John Keppeler, Managing Director, County of Hawaii

3:00 - 3:30 ISSUES IN STATE REGULATION: EFFICACY, EFFICIENCY AND ACCOUNTABILITY

Jack McNamara, Attorney and Consultant to the Division of Geothermal Energy, U.S. Department of Energy

3:30 - 4:30 WORKING SESSION

What problems do you see at the state and local levels of government affecting geothermal development? What should be done?

STATE LEGISLATIVE ISSUES IN GEOTHERMAL DEVELOPMENT

Presentations before the
Joint Interim Committee on Energy and Natural Resources
State Capitol Building, Governor's Board Room
Salt Lake City, Utah 84114
August 30, 1978

9:00 a.m. MEETING CONVENED

Senator Edward T. Beck, Chairman, Joint Interim Committee
on Energy and Natural Resources.

9:30 - 10:00 INTRODUCTION

Rutherford Harris, Director, Geothermal Policy Project
National Conference of State Legislatures.

10:00 - 10:30 GEOTHERMAL DEVELOPMENT IN UTAH

Ward Wagstaff, Engineer, Utah Division of Water Rights
442 State Capitol, Salt Lake City, Utah 84114.

10:30 - 11:00 ISSUES IN RESOURCE DEFINITION, OWNERSHIP AND FIELD
UNITIZATION

Dennis B. Goldstein, Assistant Counsel, Homestake Mining
Company, 650 California Street, San Francisco, CA 94108.

11:00 - 11:30 DIRECT HEAT APPLICATIONS: STATE POLICY CONCERNS

Dr. Don J. Karr, Oregon Institute of Technology,
Oretec Branch Post Office, Klamath Falls, Oregon
97601.

11:30 - 12:00 FEDERAL GEOTHERMAL PROGRAMS AND POLICIES

Dr. John L. Griffith, Chief, Research and Engineering
Branch, Idaho Operations Office, Division of Geothermal
Energy, U.S. Department of Energy, Idaho Falls, Idaho,
83401

National Conference of State Legislatures
Geothermal Policy Project
Workshop on
STATE LEGISLATIVE ISSUES IN GEOTHERMAL DEVELOPMENT
State Capitol, Salem, Oregon
October 4, 1978

9:00 - 9:15 a.m.	INTRODUCTIONS Rutherford C. Harris, Director, NCSL Geothermal Policy Project Senator Edward Fadeley, Chairman, Senate Energy Committee Representative Nancie Fadeley, Chairwoman, House Energy Committee
9:15 - 9:45 a.m.	GEOTHERMAL ENERGY IN OREGON: THE FEDERAL PERSPECTIVE Donald Elmer, Pacific Region Team, U.S. Department of Energy, Division of Geothermal Energy
9:45 - 10:15 a.m.	GEOTHERMAL ENERGY IN OREGON: AN UPDATE OF STATE PROGRAMS Donald Hull, State Geologist, Oregon Department of Geology and Mineral Industries
10:15 - 10:30 a.m.	BREAK
10:30 - 11:00 a.m.	RECOMMENDATIONS OF THE OREGON INTERAGENCY GEOTHERMAL FLUID REPORT Charles K. Ashbaker, Oregon Department of Environmental Quality
11:00 - 12:00 noon	MAKING OREGON A MODEL STATE FOR GEOTHERMAL DEVELOPMENT: AN OVERVIEW OF NEEDED STATE ACTIONS Richard Bowen, Consulting Geologist, Wy'East Exploration and Development Company
12:00 - 1:00 p.m.	LUNCH
1:00 - 1:45 p.m.	EXPLORATION AND DEVELOPMENT: WHAT CAN THE STATE DO TO ENCOURAGE THE DEVELOPMENT OF GEOTHERMAL? Skip Matlock, Republic Geothermal, Inc. Representative, Chevron Resources Company Representative, Phillips Petroleum Company Representative, Union Oil Company of California

(over)

1:45 - 2:30 p.m.

ELECTRICITY PRODUCTION: WHAT CAN THE STATE DO TO ENCOURAGE THE USE OF GEOTHERMAL?

Roger Colburn, Public Utilities Commission

Alan Grant, Portland General Electric Company

Walter Youngquist, Eugene Water and Electric Board

2:30 - 2:45 p.m.

INDUSTRIAL AND AGRI-BUSINESS APPLICATIONS: WHAT CAN THE STATE DO TO ENCOURAGE THE USE OF GEOTHERMAL?

Ray Huff, Oregon Trail Resource Development

Steve Munson, Hot Lake Development Company

Andy Parker, Oregon Desert Farms, Inc.

2:45 - 3:30 p.m.

BREAK

3:30 - 4:15 p.m.

DISTRICT HEATING: WHAT CAN THE STATE DO TO ENCOURAGE THE USE OF GEOTHERMAL?

Harold Derrah, City of Klamath Falls

John Hook, Northwest Natural Gas Company

Don Karr, Oregon Institute of Technology

4:15 - 5:00 p.m.

WRAP-UP AND SUMMARY: RECOMMENDATIONS FOR LEGISLATIVE STUDY

NATIONAL CONFERENCE OF STATE LEGISLATURES

Geothermal Policy Project

Workshop on Geothermal Energy

October 27, 1978

Virginia Study Commission on Coal and Energy
General Assembly Building
Richmond, Virginia

10:00 a.m.	INTRODUCTIONS	Rutherford C. Harris Director Geothermal Policy Project
10:10 - 10:30 a.m.	GEO THERMAL ENERGY: WHAT TYPE OF RESOURCE EXISTS IN VIRGINIA?	Joseph Lambiase Research Associate VA Polytechnic Institute
10:30 - 10:40 a.m.	DISCUSSION	
10:40 - 11:00 a.m.	GEO THERMAL ENERGY: WHAT POTENTIAL APPLICATIONS EXIST FOR MEETING THE STATE'S ENERGY NEEDS?	William Toth Program Manager Applied Physics Laboratory Johns Hopkins University
11:00 - 11:10 a.m.	DISCUSSION	
11:10 - 11:30 a.m.	GEO THERMAL ENERGY: WHAT STATE LAWS WILL AFFECT THE DEVELOPMENT? WHAT POTENTIAL PROBLEM AREAS EXIST? WHAT AREAS SHOULD BE ADDRESSED IN DEVELOPING LEGISLATION?	Albert Giles Geologist VA Water Control Board
11:30 - 11:40 a.m.	DISCUSSION	