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STATE OF CALIFORNIA

GEOHERMAL RESOURCES DEVELOPMENT PROJECT
PHASE I

MASTER

INTERIM REPORT

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Sponsored by the U.S. Department of Energy
under a grant to the
California State Department of Conservation
and the
California Energy Commission
September 30, 1979

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September 30, 1979

Mr. Tom Heenan
Geothermal Energy Division
Department of Energy
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Oakland, CA 94612

Pursuant to contract #ET-78-6-03-2120 with the United States Department of Energy, and as Principal Investigators for the grant, we are submitting 10 copies of the report, "Geothermal Resources Development Project, Phase I," concerning significant geothermal related problems in California.

The report identifies issues and summarizes the progress that will expedite, in selected areas, the development of geothermal resources in the State of California. It also makes findings concerning these issues and suggests areas for future action.

Thank you for your assistance in making funds available for this geothermal coordination project and the summary report.

Sincerely,

Dr. Priscilla C. Grew,
Chairperson
Geothermal Resources Board
and Director
Department of Conservation

C. Suzanne Reed
Commissioner
California Energy Commission

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TABLE OF CONTENTS

INTRODUCTION	1
CHAPTER I.	
Preface.	5
Changes in State Permitting Process.	6
The California Energy Commission.	6
California Environmental Quality Act.	8
Land Use Issues.	10
Workshop Discussion	10
State Policy Paper.	11
The Land Use Subcommittee	15
Coordination	18
Geothermal Revenues from BLM Leased Land	23
CHAPTER II	
Preface.	27
Background	28
What Happened.	29
The Newsletter	30
CHAPTER III.	
Preface.	32
Summaries of Workshops	33
1. Workshop One.	33
(Economic Incentives for Developers)	
2. Workshop Two.	34
(Economic Incentives for Investor Owned Utilities)	
3. Workshop Three.	36
(Economic Incentives for Publicly Owned Utilities)	
4. Workshop Four	38
(Economic Incentives for Financial Institutions)	
What Needs to be Done.	40
Taxation.	40
Federal Loan Guarantee Program.	40
Reservoir Insurance.. . . .	41
Bond Authority.	42
Loan Pool.. . . .	42
Definition of Geothermal.	42
Lease-Back Concept	43
Related Problems.	43
Peakload vs. Baseload.	43
Modification of PUC Policies	43
Proposed Economic and Institutional Workplan	44
CONCLUSIONS.	47
APPENDIX I Geothermal Coordinating Council	
Memorandum of Understanding (MOU)	48
APPENDIX II TAC Proposal for Distribution of BLM Revenues	56
REFERENCES	62

INTRODUCTION

INTRODUCTION

Geothermal Resources Development, Phase I was funded by the Federal Department of Energy to provide staff and resources for the purpose of assisting the State of California to meet its responsibilities for environmentally sound development of geothermal resources.

Specifically, the tasks, as identified by the federal government in the "Statement of Work" are as follows:

The Contractor shall perform the following tasks:

1. Identify generic and site specific issues and problems which hinder geothermal development in the State of California. As part of the source material for this identification, use the output of the four Geothermal Resources Board (GRB) Workshops to be conducted under a separate D.O.E. Grant.
2. Establish Working Groups from among the membership of the Technical Advisory Committee (TAC) to the Geothermal Resources Board (GRB), and identify the need for, and request participation by, representatives of federal and local government, industry (developers and utilities), and special interest groups.
3. Manage the Working Groups to achieve resolution of problems through discussion, coordination of effort, proposal of possible solutions, and the implementation of necessary procedures and actions.
4. Provide information to the Working groups from current studies of geothermal issues and problems undertaken by independent parties which can assist in the resolution of problems. This shall be done on a continuing basis throughout the contract period.
5. Prepare and circulate a periodic newsletter, detailing the activities of the TAC and its Working Groups, to all interested parties.
6. Prepare a final report summarizing the findings and accomplishments under this project.

This report, the final report itemized in the work statement as No. 6, reports the results of each task outlined above. In addition, where specific approaches outlined in the work statement were impractical or required modification, full descriptions of alternative actions are provided.

In order to understand the actions of the players in geothermal matters, it is necessary that there be a brief description of the lines of authority within California state government.

The Resources Agency is headed by one of six cabinet level Secretaries, the Secretary for Resources. Within the Agency there are seven departments or boards with direct interests in geothermal matters who are represented on the Technical Advisory Committee of the GRB. Also, there are three other departments, or boards from other agencies that generally have less interest in geothermal matters but serve on the Technical Advisory Committee. In addition, independent entities such as the Energy Commission, the State Lands Commission, and the Public Utilities Commission are represented on TAC but can proceed on separate courses of action (from the Resources Agency) if desired. (Note: there are also three public members of TAC who represent the public at large.)

Finally, there are two members of TAC that answer directly to the Governor, the Office of Planning and Research, and the Business and Transportation Agency.

The following chart shows lines of authority in the State geothermal decision-making process. It should be noted that each entity has different weight in the process, depending on the legislative mandates of each.

TABLE I

- 1 Independent agencies are those entities whose member commissioners are independent from the direct authority of the Governor after confirmation by the State Senate.
- 2 The Director of the Office of Planning and Research and the Secretary of the Business and Transportation Agency can be hired and fired by the Governor at his discretion.

CHAPTER I

CHAPTER 1

PREFACE

Chapter I identifies the geothermal generic and site-specific issues of significance that the State (GRB), through its Technical Advisory Committee, has worked to resolve during the last year. The status of each issue is provided and areas for future work are identified.

The major issues that faced the State in geothermal development during the last year included such items as changes in the State permitting process, land use issues, coordination between State entities, and geothermal revenues from BLM leased lands.

Sources include information derived from the Geothermal Resources Board Workshops, earlier economic/financial incentive workshops, and the minutes of the GRB Technical Advisory Committee.

CHANGES IN STATE PERMITTING PROCESS

The California Energy Commission

In 1975 the Warren-Alquist State Energy Resources Conservation and Development Act became law. It created the Energy Commission, a five member body responsible for establishing much of California's future energy policies. Specifically, the Commission's principal mandates included research and development in alternative energy resources, forecasting future energy needs, development of energy conservation techniques, and siting electrical generating facilities in excess of 50 MW.

The process for siting electrical generating facilities was of great concern to all parties as the legislation wound its way through the Legislature. Nearly one-half of the original Act was devoted to describing this process. Essentially, the law provided for a two-stage, thirty six month time frame for final approval. In addition, each proposal for a power plant was required to identify three candidate sites.

Unfortunately, not much thought was given to the siting of geothermal generating facilities. The original law stated the following about the siting of geothermal generating facilities:

25540. If a person proposes to construct a geothermal powerplant and related facility or facilities on a site, the commission shall not require three alternative sites and related facilities to be proposed in the notice. In considering the proposed construction of a geothermal powerplant and related facilities on a site, the commission shall issue its findings on the notice as specified in Section 25516 (NOI) within nine months from the date of filing of such notice, and shall issue its final decision on the application as specified in Section 25523 (AFC) within nine months from the date of filing the application for certification, or at such later time as is mutually agreed by the commission and the applicant or person submitting the notice.

In addition, it should be noted that other sections of the Act stipulated that virtually all geothermal facilities in the current planning stages were exempted from the law. As a result, substantial time passed before weaknesses of the law relating to geothermal siting were fully appreciated.

Efforts to streamline the entire siting process began in December 1977, when the Chairman of the Commission established a two-member Geothermal Policy Committee to recommend a policy and regulatory approach to the full Commission that would serve as a basis for formulating NOI¹ and AFC² regulations for

1. NOI - Notice of Intent - means the information filed with the Commission which states the intention of an applicant to file an application for certification of any site and related facility. Approval of the NOI can lead to submission of the AFC.
2. AFC - Application for Certification - means any request for certification of any site and related facility filed in accordance with Commission procedures. Approval of the AFC can lead to construction.

geothermal powerplants. The Committee's efforts represented the first extensive analysis of the geothermal powerplant siting process. After three days of public hearings with the active participation of representatives from industry, local and state agencies, and environmental groups, the Committee issued its findings and recommendations in its Geothermal Policy Report. This report established the need to streamline the siting procedures for geothermal powerplants. In addition, it recommended that the Commission formally adopt a policy that advocated accelerating environmentally acceptable powerplant development beyond that currently planned by utilities, and recognized geothermal energy as a preferred source for meeting the state's energy needs. This report was adopted by the full Commission in March 1978, and established for the first time a comprehensive geothermal policy that suggested reforms in the siting process.

Regulations were drafted and submitted to substantial public scrutiny. In September 1978, these regulations were adopted by the Commission, and served as the base for the subsequent regulations that were adopted pursuant to AB 2644.

AB 2644 became law in January 1979. It formally revised the procedures and time schedules in the processing and approval of Notices of Intent and Applications for Certification of geothermal facilities which had been advocated by the Geothermal Policy Report. Specifically, if a utility proposes to build a geothermal powerplant at a site which is capable of providing geothermal resources in commercial quantities, no notice of intent is required and the Commission must issue its final decision on the power plant application within twelve months. If, however, commercial quantities of resource cannot be demonstrated, the process is limited to one nine month NOI process and one nine month AFC process.

In another effort to streamline the geothermal siting process, AB 2644 recognized that some geothermal sites may have more available resources than the capacity proposed to be built. Where such is the case, AB 2644 provides that the Commission can either approve the initial facilities or find that the site is acceptable for additional generating capacity. If the latter is determined, decisions on applications of additional facilities at that site must be issued within three months.

Another important regulatory issue addressed in AB 2644 related to the role of local government in the siting process. Some local governments, particularly in those areas of the state with substantial geothermal resources, believe that they can site geothermal plants more rapidly while adequately protecting environmental concerns than can a state commission seated in Sacramento. AB 2644 provides that if a county has a geothermal element in its general plan, it can petition the Commission to approve an equivalent certification program which would delegate to the county full authority for the certification of all geothermal powerplants within the county. The Commission, once having approved such a program, can revoke approval if it finds that the county standards do not conform to the state's standards.

Following approval by the Governor of AB 2644 in September 1978, but prior to the bill becoming law in January 1979, the Commission began to prepare implementing regulations. Using advisory groups composed of representatives

from industry, local government, environmental groups, special interest groups, private citizens and State officials, the Commission, after extensive public hearings, approved the regulations on July 11, 1979, by a vote of four to zero. While the full effect of the new regulations still require time for an adequate appraisal, almost all of the concerned parties agree that the geothermal powerplant siting process in California has been substantially improved.

California Environmental Quality Act

Another serious geothermal issue that relates to the regulatory process concerns implementation of the California Environmental Quality Act of 1970. Under this law, all public agencies (state and local) are generally required to prepare and complete an environmental impact report on any project which may result in a substantial adverse impact to the environment.

With the passage of AB 2644, the Department of Conservation's Division of Oil and Gas (DOG) was designated as the Lead Agency for all "geothermal exploratory projects". The bill also established, for the purpose of CEQA, that exploratory projects be deemed completely separate and distinct from any subsequent geothermal field development projects (wells). Additionally, the law required that DOG's environmental review and documentation procedures culminate in a project approval or disapproval decision within 135 days from the date that the Division accepted an application.

The environmental review process for geothermal exploratory projects begins when the project proponent submits an application which contains a "Notice of Intention to Drill a Geothermal Well", along with prescribed environmental information. At this point, a "Notice of Preparation" is distributed by DOG to all responsible agencies, residents, and landowners within the project area, and those who have expressed an interest in the project. These parties are allowed 30 days to review and submit comments identifying their environmental concerns. Comments are used to focus the preparation of subsequent environmental reports on significant adverse environmental impacts.

DOG must determine whether the application from responsible agencies is complete. The decision is based on comments received on the Notice of Preparation and on environmental and project description data submitted by the project proponent or further information which he agrees to submit within 30 days. If it is complete, the application is accepted.

Exploratory projects being proposed vary from shallow temperature observation wells (having no significant impacts) to deep exploratory wells (requiring full-scale EIR's). Therefore, depending on the level of environmental review and documentation required, DOG will prepare either a Notice of Exemption (within 10 days of application acceptance), Negative Declaration (75 days), or an EIR (135 days).

On December 29, 1978, DOG adopted emergency regulations for carrying out its new Lead Agency function. On May 7, 1979, comments were solicited from various parties to consider changes and additions to the final version of regulations and they were accepted on September 1, 1979.

Geothermal operators and local government officials have been cautious in working with this new, unfamiliar process. Consequently, during the first six months of the program (January 1, 1979-June 30, 1979), considerable time was devoted to public education and distribution of information. Concurrently, during this initial six-month period, the DOG Geothermal CEQA Unit staff received 29 project applications. All were processed within the prescribed time limits.

Two of the projects involved the preparation of full EIR's and required about 129 days for processing. The processing of one project, requiring a Notice of Exemption, was prolonged due to the presence of rare and endangered plant and animal species and archaeological sites near the project site. The project required 100 days to process. Today, because of revised procedures, this project would take about 40 days to process.

As permitted by AB 2644, the State Oil and Gas Supervisor delegated Lead Agency responsibilities to Imperial County after receiving a formal request from that county. This is the only county to date that has prepared a geothermal element to its general plan, which is a requirement for delegation.

The successful implementation of this program represents a substantial step forward in elimination of red-tape from the permitting process. Though shortening the time needed by the State to analyze impacts, it appears that natural resources are being adequately protected.

LAND-USE ISSUES

The Technical Advisory Committee of the Geothermal Resources Board had two sources of information on land-use issues and geothermal development. Under a federal grant, four workshops were convened between December 1978 and March 1979. One of the workshops, titled "Federal Leasing and Environmental Review Procedures", dealt extensively with land-use problems with geothermal development. The other source of information was the TAC Land-Use Subcommittee which coordinated the review of specific land-use matters such as RARE II and the BLM Wilderness Assessment Study.

Workshop Discussion

The December 1978 Workshop, through panel presentations, updated the current status of specific areas of concern such as RARE II and described the process by which the federal and state governments make land-use decisions for geothermal development.

At the State level, the State Lands Commission reported that recent legislative changes will permit leasing of much greater acreage of State lands for geothermal development. Additionally, the permit process was altered to provide that surface exploration and temperature observation well drilling will no longer require large-scale environmental impact assessment.

Federal agencies expressed their clear desire for closer cooperation between other agencies, particularly between their own agencies. Through cooperative planning, the hope is that time and dollars spent for regulatory permit procedures will be reduced for all.

Several examples of successful intergovernmental cooperation were pointed out. The NCPA¹/Shell Project at The Geysers was one such project. In the past, each regulatory agency involved (USGS, BLM, CEC, and DOE) would prepare separate environmental statements or reports. Now, through a memorandum of understanding (MOU), all agencies are working together to prepare one document which will serve the needs of each agency. Duplication of effort and cost is greatly reduced and the process is streamlined. The old approach usually took about 18 months; it now takes about one year.

At the April 1978 meeting of the Technical Advisory Committee, Don Hoagland of the State Lands Commission noted that the Federal Geothermal Streamlining Task Force of the Inter-Agency Geothermal Coordinating Council would be holding hearings in California the following month on the subject of federal leasing. It was also noted that the Department of Conservation had applied for a Department of Energy grant to conduct a series of geothermal workshops, one of which would deal with federal leasing policies, and it would be useful to have a working paper for the Federal Task Force hearings. Such a paper could also serve as a springboard for discussions at the upcoming workshops.

A subcommittee composed of representatives of TAC member agencies along with the Bureau of Land Management and the U.S. Geological Survey was formed to prepare the issue paper. Two meetings of this state-federal group were held to establish priorities, identify areas of potential development, outline

¹ Northern California Power Agency

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present state and federal leasing procedures and make recommendations on needed changes in the federal leasing procedures and policies. At the conclusion of the second session, during which a consensus was reached on these issues, Syd Willard from the California Energy Commission, Jack Lahr from the Bureau of Land Management, and Don Hoagland from the California State Lands Commission were charged with the task of writing the report.

A draft was prepared and circulated to the GRB, TAC, and federal agencies. Comments from this circulation resulted in modification of the paper which was adopted by the TAC and then presented by Priscilla Grew, Chairperson of GRB as testimony at the Streamlining Task Force hearing June 21, 1978 in Sacramento.

The goals, as enunciated in the paper,¹ were as follows:

1. Develop clear definition of local, state and federal planning roles and regulatory authority.
2. Eliminate duplication of environmental reviews and regulatory hearings wherever possible.
3. Establish an efficient and clearly understandable powerplant siting process.
4. Develop acceptable baseline environmental data for areas identified as having geothermal resource potential.

At the federal leasing workshop (December, 1978), the authors of the State leasing working paper compared the federal geothermal Streamlining Task Force Report recommendations with those recommended by the State group. It quickly became apparent that the Streamlining Task Force had paid very little heed to the recommendations from California. Some were deemed not to be within the jurisdiction of the Task Force charge, others were indicated to be already in force (although this was not accurate in some cases), while others were ignored. One of the major recommendations of the state -- the so-called de-coupling concept, or separating exploratory activities from developmental activities for the purpose of environmental impact documentation -- was virtually ignored. Other suggestions such as the Secretary of Agriculture making a determination that energy resource development was at least as important as wilderness so that the Forest Service could proceed with geothermal leasing received similar treatment.

State Leasing Working Paper

The following excerpt from the State Leasing Working paper is included here in the hope that further consideration will take place of the very important State concerns expressed therein.

¹ Hoagland, Don; Lahr, Jack; and Willard, Syd, Geothermal Leasing in California State-Federal-Local Agency Task Group Working Paper. Sacramento: California State Lands Commission, U.S. Bureau of Land Management, and the California Energy Commission. September 11, 1978. 10 pp.

Resource Exploration vs. Development (Decoupling)

Under Federal law, issuance of a lease is a commitment to development and such a commitment requires an environmental assessment of all potential impacts, including full field and powerplant development.

Under California law, the State may issue a prospecting permit which gives the permittee the exclusive right for three years to explore, including drilling of a specified number of exploratory wells. Environmental impact assessment is limited to the exploratory activities only. The permit provides that if a commercial discovery is made, the permittee has a preferential right to a lease, if a lease is issued, but before that lease is issued, an additional, more comprehensive environmental document shall be prepared and certified which deals with impacts of full field development.

This two-phased approach has worked well on State-owned lands. The major drawback is that the State limits royalty to 10 percent of gross revenue. There are some misgivings about issuing preferential rights with a royalty ceiling in areas where the value of the resource has been established. (Note: Recent changes in State law allow a negotiable royalty rate of up to 16-2/3%.)

Federal procedures could be changed to permit wildcat exploration with environmental assessments limited to impacts specifically associated with the proposed exploratory activities. Too much time is spent on broad based environmental studies without definitive knowledge of the existence, nature, or extent of the geothermal resource. Large areas could be explored and developed or disregarded according to the results and findings of exploration, but this early exploration and resource assessment would give decision-makers a better idea of the statewide geothermal energy potential. Environmental protection could still be provided by using State policy requiring a full scale impact assessment once a discovery has been made. (Note: Recent changes in federal policy point to a shift toward separate consideration of exploratory impacts and development related impacts. Phased leasing is being considered in pending legislation, and high level officials within the USFS and BLM are providing increasing support for this concept; however, the problem associated with federal leasing procedures are still far from being solved.)

Baseline Data Acquisition

A limiting factor in the availability of land for geothermal leasing is the absence of background environmental data from which to assess environmental impacts associated with geothermal exploration and development.

Federal and California law (National Environmental Policy Act and California Environmental Quality Act) require environmental documents prior to actions which will impact the environment. The federal laws, such as the Endangered Species Act of 1970, the Antiquities

Act, the Wilderness Act of 1964, the Clean Water and Air Acts, and the Federal Land Policy and Management Act of 1976, are examples of additional mandated requirements for baseline data acquisition to protect the environment. To comply with existing statutory requirements, while providing an environment favorable to expedited geothermal development, substantial efforts should be made to compile necessary data before the lack of that data hinders planned activities.

Collection of baseline data prior to leasing is necessary in order to provide protection required by law or to assure responsible officials and the public that no significant impact will occur due to issuance of a geothermal lease. This collection requires extensive financial support, but may be limited to provide background data with respect to exploratory activities only.

Land Ownership Patterns and Their Effects

Ownership of lands with geothermal resource potential is divided among State, Federal, and private holdings. Inaction by any one of the land-holding entities inhibits development activities of the other two. Conversely, increased activity by any one owner has the effect of spurring activity on the lands of the other two.

The Federal Government is the largest landowner and therefore its leasing activity, or lack of activity on BLM, Forest Service and Bureau of Reclamation lands, has the greatest impact on surrounding State or private lands.

State lands are particularly susceptible to this because of the legal prohibition against state-sponsored competitive leasing except in areas where there has been a nearby commercial discovery. Recently enacted legislation has remedied this restriction.

Federal/State Legislative Constraints

Federal and State laws other than those governing geothermal resource development are having a negative effect on development of geothermal energy.

The Bureau of Land Management and the United States Forest Service are presently nominating lands for study for possible inclusion in Roadless Wilderness areas as required by the Wilderness Act of 1964 and the Federal Land Policy and Management Act of 1976. Such a nomination for study precludes geothermal development until the study is complete. It appears that large areas of both State and federal lands with geothermal energy potential will be nominated for such studies.

As an example of the kind of constraints such programs create, California's recently issued prospecting permits in the Randsburg area of San Bernardino County. Two were in a federal KGRA and one was in a noncompetitive lease area. Shortly after the State action,

BLM withdrew the lands surrounding the State permit in the KGRA from leasing. This action could preclude development of the state-owned parcel.

Additionally, under the State Wilderness Act of 1974, more than 300,000 acres of State land have been proposed for inclusion in State Wilderness areas. Legislation considered in the California Legislature could further restrict exploration by establishing buffer zones around certain designated hot springs.

Federal law provides that the BLM lease lands under jurisdiction of the United States Forest Service, but the Forest Service makes the final leasing decision. The Forest Service has deferred leasing decisions until it completes Forest Management Plans in all areas. This decision has halted development in many significant areas including Mono-Long Valley, Glass Mountain, Beckwourth Peak and Lassen KGRAs....

Federal geothermal leasing is accomplished under the Geothermal Steam Act of 1970. Regulations to implement this act became effective in January 1974. The lead role for leasing is vested with the BLM within the Department of Interior. The Interior Department's USGS plays a key role in post-lease operations and development.

In 1976 Congress passed the Federal Land Policy and Management Act with specific requirements for BLM to coordinate its planning for federal public lands with State agencies and local governments. In addition, it placed on BLM the requirement to inventory all roadless federal public lands of 5,000 acres or more for wilderness characteristics and make recommendations to the President and Congress by 1991. In the interim, areas found to have potential for wilderness will be managed so as not to degrade their wilderness potential. The impact of this legislation primarily affects the California desert in the Randsburg, Yuha, and East Mesa federal land areas. The same legislation designated the California Desert Conservation Area and mandated BLM to complete a comprehensive Desert Plan and implement it by September 30, 1980. This effort is ongoing and the plan will address areas sensitive to geothermal development and areas of critical environmental concern.

These legislative mandates and the requirements of the Federal Clean Air, Clean Water, Antiquities, Endangered Species, and Historic Preservation Acts all constrain land availability for leasing until legal and environmental requirements have been met.

Federal procedures require an Environmental Assessment Record or Environmental Statement before leasing. The Federal Geothermal Steam Act carries no provision for deep drilling exploratory permits other than through a lease issuance. (Note: The Department of Conservation, while generally concerned with the substance of this paper during review by TAC, has since voiced a concern that this section is too anti-environmental protection. While development is needed, high environmental standards must be strongly enforced.)

Schedules

To achieve maximum, near-term utilization of geothermal resources in California aggressive schedules must be set and adhered to. Too often in the past, a plan for leasing and development has been set, but never achieved. The lease date, for example, seldom stays fixed. Federal lease dates are usually contingent upon some basic information, i.e., environmental baseline information, environmental statements, etc. If the first environmental documentation step is not taken, the lease sale must be delayed, unless exploration is decoupled from the commitment to full development of the resource that may be discovered. Even if decoupling is accomplished, environmental impacts due to the exploratory phase itself will have to be considered.

The model development schedule would be a six-year process -- two years for environmental baseline collection, ES/EAR preparation, and leasing; two years for resource assessment activities, including deep drilling, confirmation of the resource, and a decision to construct a powerplant; and two years for concurrent drilling and construction of the powerplant. If this schedule is achieved, 50 MW plants could go on-line in a rapid, yet orderly rate. The major uncertainty in achieving such a rapid development schedule is the resource assessment activity. The middle two years of this six-year sequence very well may stretch out over a considerably longer time, if the exploratory activities are less than maximum, or if the resource found is less promising.

Experience has shown that close surveillance and coordination by other agencies can be an effective tool in assuring that key permitting actions are taken according to schedule.

Based on the State-Federal working paper quoted above, the Technical Advisory Committee made selected recommendations to the federal government that still await implementation.

The Land-Use Subcommittee

One of the major events of the year and a major concern to the TAC subcommittee was the Bureau of Land Management Wilderness Assessment Study.

Phase I of the national wilderness assessment effort included an inventory of all potential wilderness areas. Phase II involves designating for further study the areas found to meet specified wilderness criteria. The purpose of Phase II is to determine the value of existing resources so that alternative land uses can be evaluated and determined. BLM plans to complete its study of wilderness areas in the California Desert Conservation Area by 1982. There is no time limit for Congress to make the final determination.

While few individuals deny the merits of preserving for the future important elements of our wilderness resources, the process poses problems for those concerned with geothermal development.

While the designation of wilderness study areas is designed to evaluate all resources in a selected location, geothermal resources exploration may be limited. This effect may be caused by the fact that exploration is usually carried out by private operators who demand a fair return on their investment. Potential reasonable returns may be impeded by the wilderness study designation in two ways: 1) no permanent structures are allowed in a designated area during the study period and until Congress takes final action; and, 2) if economic geothermal resources were found, there still is no guarantee that Congress would decide to allow geothermal development. Given these two factors, geothermal exploration may be limited, leading to valuable geothermal resources not receiving complete evaluation.

Another important land use related issue that concerned TAC during this period was the second U.S. Forest Service Roadless Area Review and Evaluation (RARE II).

RARE II intended to (1) identify roadless areas within the United States, (2) select criteria for allocating identified areas as either wilderness or non-wilderness, and (3) designate particular areas either wilderness or non-wilderness (additional uses include timber harvesting, road construction, ski areas, and off-road vehicles), or (4) designate areas needing further planning for decision-making purposes.

The federal government decided to prepare a single programmatic EIS for NEPA purposes, pertaining to all of the inventoried roadless areas. This draft was completed on June 15, 1978.

The final EIS was completed on January 4, 1979. It identified a proposed project which purported to be a combination of two of the alternatives in the draft EIS, as the proposed decision. The final EIS allocates to wilderness all of the identified roadless areas in the United States. Included in the allocation to wilderness are 363 areas including more than 6 million acres of roadless lands in California.

The final EIS for California allocated 72 wilderness areas including 975,201 acres, 171 non-wilderness areas including approximately 2,340,000 acres, and 120 future planning areas including approximately 2,700,000 acres.

Congressional action is required to create wilderness areas. However, the RARE II designation of areas as non-wilderness is final, not requiring Congressional action. The RARE II recommendations were transmitted to Congress on May 2, 1979.

In February, 1979, TAC was briefed extensively on the impacts of the proposed RARE II report. Because of the obvious concern many participants felt about the impacts of the study on geothermal development (e.g., removal of land with valuable geothermal resources from production considerations, siting of transmission corridors -- particularly in the Imperial Valley, the impact on the Mammoth-Mono lease sale, etc.), a subcommittee of TAC composed of state and public members was created.

At the March meeting of TAC, it was announced by the subcommittee that because the final RARE II document was on the verge of publication, little good would be served in making the effort to present a coordinated set of comments.¹ However, a resolution was adopted by TAC as follows:

Resolved: That geothermal exploration be allowed to the same extent (in RARE II areas) that is allowed under USFS management for oil, gas and mining.

¹ The subcommittee noted that in the future the committee would track land use issues in a manner that will give time enough for a coordinated response.

COORDINATION

One very difficult impediment to development of geothermal resources concerns the multitude of federal, state, and local entities that are mandated by law to administer some aspect of geothermal regulations or permit development. For example, State government entities that deal with various geothermal matters include:

Department of Conservation	Administers CEQA for exploratory geothermal well drilling, safety of wells, and conducts studies and advises parties about geothermal resource assessment and geology.
California Energy Commission	Sites electricity generating facilities permits siting and promotes research and development through funding of projects and supports resource assessment activities.
Department of Water Resources	Constructs electric projects for use in pumping water for the State Water Project.
State Lands Commission	Administers regulations and issues leases for State-owned geothermal resources.
Department of Fish and Game	Protects wildlife endangered by geothermal development.
Public Utilities Commission	Sets utility rates including rates for power generated by geothermal, transmission lines and controls wheeling.
Office of Planning and Research	Coordinates planning and land use aspects of development.
Department of Health Services	Monitors potential health problems related to such things as toxic emissions into the air and water.
State Water Resources Control Board	Regulates disposal of effluents which may contaminate surface and ground water.
Air Resources Board	Protects air quality; establishes air standards; grants air permits.
Solid Waste Management Board	Regulates the use and abandonment of solid wastes in relation to geothermal development.
Parks and Recreation Department	Establishes and protects parks and historic sites.

Geothermal Resources Board

Hears cases on appeal from industry concerning actions by the State Oil and Gas Supervisor.

Business and Transportation
Agency

Advises the State on economic and business factors relevant to geothermal development.

Native American Heritage Commission

Provides advice on protecting Native American sites and artifacts which may be affected by encroaching geothermal development activities.

Most of the above functions have equivalents at the federal government level. Where no adequate information flow or inter-governmental coordination occurs, the effort to expedite and develop geothermal resources is greatly hindered.

The Geothermal Resources Board in 1977-78 recognized the need for better exchange of information and coordination. It expanded its Technical Advisory Committee (TAC) which was previously assigned just to advise the Board on technical issues related to geothermal cases before the Board, to include much broader representation. Its basic purposes were to coordinate State agency activities relating to geothermal development in California and to provide a periodic forum for the exchange of relevant information.

Table I represents the nature and success of these endeavors. Using the minutes of TAC meetings, the table comprises a partial list of significant subjects discussed by TAC members at its public meetings. If the subject was only informational, it is so marked. However, if some followup action was agreed upon and required more than one representative to act with other members, it is marked as a coordination item.

While Table I does not judge the success or failure of TAC's actions on any item, it does demonstrate that concerned parties had a forum in which to listen and interject their opinion if so desired.

It also should be noted that TAC has served as a source of information for both federal and local governments, and for private interests. A review of TAC's minutes indicates that special attention has been given to encouraging better rapport with federal geothermal officials by regularly scheduling informational briefings for TAC members. Local governments, particularly when the state issues are of importance to them, have been in regular attendance. Industry, environmentalists and other concerned citizens have found these meetings to be very useful.

TABLE II

<u>SUBJECT DISCUSSED</u>	<u>INFORMATIONAL ITEMS</u>							<u>COORDINATED ITEMS</u>								
	1978	1979						1978	1979							
Month	12	1	2	3	4	5	6	7	12	1	2	3	4	5	6	7
Reorganization of Department of Energy	x	x	x													
GRB Workshops	x	x	x	x	x	x										
Regional Operations Research Contracts									x							
Fish and Wildlife	x															
AB 2644	x	x	x	x	x	x										
BLM Wilderness	x	x							x	x	x	x	x			
TAC Proposal to DOE for Related Geothermal Projects		x	x			x	x		x	x			x			
Proposal to Assess Geothermal Resources of California		x				x		x	x							
CEC Geothermal Siting Regulations		x	x			x	x	x								
Heber Binary Cycle Proposal	x															
CEC Investigation into Establishing Procedures for Generic Hearings	x								x	x						
Reorganization of TAC				x	x	x		x	x	x				x	x	x
Geothermal Omnibus Bill		x							x	x					x	x
RARE II			x						x	x	x					
Department of Energy Budget			x								x	x				
Public Utilities Comm. Current Activities Rep.			x													
Bureau of Land Management Geothermal Lease Revenues			x								x	x	x	x	x	x

TABLE II (Continued)

<u>SUBJECT DISCUSSED</u>	<u>INFORMATIONAL ITEMS</u>								<u>COORDINATED ITEMS</u>							
	1978	1979							1978	1979						
Month	12	1	2	3	4	5	6	7	12	1	2	3	4	5	6	7
California Bond Authority (Proposed Legislation)			x	x	x										x	
Dept. of Energy Activities					x											
CEC Budget Review															x	
Imperial Irrigation District (Cooling Water for Imperial Valley)					x											
GRIPS Commission Activity Report (Local Government Entity That Represents Interests of Counties in the Geysers Area)					x											
Reservoir Insurance					x	x									x	
State Land Regulations						x										

Despite TAC's active and somewhat successful role in 1978-79, many TAC members were increasingly frustrated by organizationally-caused inhibiting factors due to TAC's informal status.

- o The composition of the GRB (the TAC "parent organization") is such that the influence of the Resources Agency in decision making can be very great. Other groups outside the agency (e.g., CEC, OPR, State Lands, etc.) preferred a forum where their recommendations would carry independent weight.
- o TAC's functions and responsibilities have never been formally promulgated. What it can do and can't do has not been adequately stated by the decision makers for the member state agencies. Some representatives believe TAC should just disseminate information, while others believe it should aggressively endorse and pursue policy initiatives.
- o Technically, some members believe that because of the ad hoc nature of TAC's growth, its membership does not reflect reality (i.e., the Conservation Department had a disproportionate share of the votes).

As a consequence, throughout 1979, TAC has grappled with finding a new mechanism for continuing its work. After reviewing a number of options (Executive Order, legislation, creation of a council) TAC produced consideration a Memorandum Of Understanding (MOU). (Note: Copy creating California Geothermal Coordinating Council included in Appendix I.)

The membership of the Council allows of 12 representatives, thus reducing the size of TAC, with each member representing a primary body concerned with geothermal development. Nine entities have signed to date (December 1, 1979), and the organization is in operation. The agencies still considering signing are the Department of Conservation, the Department of Fish and Game, and the State Water Resources Control Board. Also, and of significant importance, the duties of the new entity are clearly delineated. Its coordinating function is defined.

In summary, it appears that California is about to take another important step in creating a coordinating mechanism that is efficient in gathering and exchanging important information concerning geothermal issues. Hopefully, this will assist in a more expeditious development of the State's geothermal resources.

GEOTHERMAL REVENUES FROM
BLM LEASED LAND

Background

During the last year, there has been no issue of greater importance to geothermal development in California than how to allocate funds derived from BLM leases of geothermal lands. The issue was precipitated by the November 1978 sale of about \$16,000,000 worth of geothermal leases in The Geysers region by the Bureau of Land Management.

The Federal Land Policy and Management Act of 1976 (Section 317) states in part the following:

All money received from sales, bonuses, royalties, and rentals of the public lands under the provisions of this Act and the Geothermal Steam Act of 1970...shall be paid by the Secretary of the Treasury as soon as practicable after March 31 and September 30 of each year to the State other than Alaska within the boundaries of which the leased lands or deposits are or were located; said moneys paid to any of such states on or after January 1, 1976, to be used by such State and its subdivision, as the legislature of the state may direct giving priority to those subdivisions of the state socially or economically impacted by development of minerals leased under this Act, for (i) planning, (ii) construction and maintenance of public facilities, and (iii) provision of public service...

As a result, it became apparent that approximately \$8,000,000 would be returned to the State for appropriate allocation sometime in 1979.

In December 1978, the Chairperson of the Geothermal Resources Board, Dr. Priscilla Grew, asked the Technical Advisory Committee of the GRB to recommend action that would, (1) carry out the intent of the federal legislation and (2) allocate the revenues in a manner designed to expedite geothermal development in California.

A subcommittee was formed within the Technical Advisory Committee to formulate recommendations. Besides concerned departments of State government, representatives from industry and local government participated in these deliberations.

One important conclusion that the subcommittee accepted was that while it is important to deal with the immediate issue of allocation of the \$8,000,000, substantial revenues from rents and royalties will be accrued in the future.

Thus, a broad Statewide policy solution to the problem would be preferable to the immediate issue of allocation of the \$8,000,000.

Naturally, the local governments of Lake and Sonoma counties (where the immediate lease sales took place) eyed the State's deliberations with considerable caution. Some local officials argued that the federal law implied that moneys derived from a county should be returned to the county. Others, recognizing that solving significant geothermal problems in other

parts of the State could expedite development in their own jurisdictions, agreed that some formula for allocation of the revenues between State and local governments would be appropriate.

By the end of May 1979, two distinct approaches evolved.

First, the Bosco¹ approach:

On May 21, 1979, Assemblyman Bosco introduced legislation (AB 1905) that would provide for all moneys received by the State from the federal government for federal geothermal leases to be allocated to those counties socially or economically impacted by the federal geothermal leases. Concerned officials of the State supported a split between returning revenues to the counties and making revenues available to State agency geothermal programs, and expressed hope that as the bill progressed, cooperation could be achieved.

On July 6, 1979, Assemblyman Bosco amended his bill to provide that 80% of the moneys received by the State from leases would be returned to the counties while the remaining 20% would be deposited in a Geothermal Resources Development Loan and Trust Account with the State Energy Commission responsible for administer loans to counties within the State. No state agency supported the measure.

On July 18, 1979, the Assemblyman again amended his bill. While retaining the 80/20% formula, this measure clarified the loan program and provided that the measure would remain in effect only until December 31, 1979. This measure was opposed by the Resources Agency because the Agency wanted to continue a dialogue with interested parties in order to determine the most appropriate uses for the expected revenues. Although AB 1905 passed the Assembly, it was defeated on August 23, 1979 in a policy committee of the Senate.²

Second, the TAC approach:

By mid-June 1979, TAC completed recommendations concerning the BLM revenues (Note: Appendix II).

Essentially, TAC, after consultation with local government and industry, agreed to a formula whereby 60% of the revenues would be returned to the counties of origin, while 40% would be deposited in a Geothermal Resources Development Fund (60% of the 40% would be earmarked for allocation to local jurisdictions having potential or known geothermal resources. The remaining amount would be used for State actions deemed necessary to promote geothermal development.) The new State fund would be administered by 21 representatives of State and local government called the Geothermal Coordinating Council.

¹ State Assemblyman Douglas Bosco represents The Geysers region and, quite understandably, is very concerned about the allocation of BLM revenues.

² The California Legislature has two-year sessions. While AB 1905 was defeated, it also was granted reconsideration in January, 1980. Should a solution to the revenue issue be developed by January, this measure most likely will serve as the vehicle for passage.

On behalf of the TAC, the Chairperson of the Geothermal Resources Board submitted the proposal to the Resources Agency. The Agency, besides doubting the ability of a 21-member council to administer the program, questioned the use of all the geothermal revenues for development or restoration activity. Viewing geothermal energy as a non-renewable resource, the Agency asked if there were not some way to use some portion of the revenues for renewable resources development?

With the end of the legislative session on September 14, 1979, the issue remained unresolved. However, there is a willingness by all parties to work out the differences that remain. Much work has been done by all sides including the Legislature, and TAC has served as a positive sounding board for a continuing dialogue between the local government interests, the Legislature, and the Resources Agency.

CHAPTER II

CHAPTER 2

PREFACE

Chapter 1 attempted to identify generic and site specific issues and problems that relate directly to geothermal development in California. Chapter 2 describes activity in the following areas:

1. Establishment of working groups from among the membership of TAC with other governmental and industry oriented participation;
2. Management of the working groups;
3. Provision of information to the working groups from current studies of geothermal issues and problems;
4. Preparation of a periodic newsletter, detailing the activities of the TAC and its working groups; and
5. Preparation of a final report.

BACKGROUND

The Technical Advisory Committee established several important working groups or subcommittees.

1. The Policy Subcommittee. This body was responsible for discussing and reviewing many important issues (e.g., some applications for funding, reorganization, internal matters, etc.). The group was composed of five key agency representatives and a chairman from the private sector.
2. BLM Revenues - Reorganization Subcommittee. Though the Policy Committee dealt with reorganization issues, the BLM revenue issue, after assignment to a new subcommittee, forced additional consideration of organizational issues (refer to Chapter 1).
3. The Land Use Subcommittee dealt with specific land use issues (e.g., RARE II, transmission corridors, etc.).
4. Other specialized committees were created such as the DOE budget review subcommittee and newsletter subcommittee. These entities were disbanded as the need for action diminished.

WHAT HAPPENED?

As soon as this project (Phase I) was implemented, the administration of the monthly meetings was assumed by staff. Almost at once, however, elements within TAC expressed the belief that TAC activities could and should be administered by the constituent elements of the organization.

In March, 1979, a meeting of the Policy Subcommittee established new ground rules for staff connected with Phase I. First, the monthly meetings of TAC should be administered totally by TAC members elected as officers in the organization. Second, staff should only be used as requested by specific working groups. Third, staff needs for TAC probably could best be served by internal staffing in the future. And fourth, there was no prohibition on staff preparation of the final report for Phase I.

These changes in emphasis, after much debate, eventually were approved by the principal investigators.

THE NEWSLETTER

Shortly after the March Policy Subcommittee meeting, after reviewing its obligations to Phase I, TAC embarked on a careful evaluation of the need for a geothermal development newsletter. A subcommittee was created to examine the issue and make recommendations to the full TAC.

Existing geothermal newsletters were examined in detail. Needed information, in the opinion of the committee, already seemed to be included in the newsletters. Recognizing that TAC might represent a different perspective on the subject, an extensive mailing to interested individuals and publications was made asking if there were areas of informational concern where TAC could provide needed assistance.

The overwhelming lack of response indicated to the Committee and to TAC an obvious answer. There seemed to be little need for a new and different newsletter.

CHAPTER III

CHAPTER 3

PREFACE

California fully recognizes its responsibility to assist in the development of its geothermal resources. The record, both from a development and regulatory point of view clearly indicates that the state has made strides in its efforts to make geothermal production a major contributor to the California energy mix.

During the past year, at the behest of the Energy Commission and the Department of Conservation, a series of workshops were conducted to examine what economic incentives should be instituted, and the Energy Commission and Technical Advisory Committee collaborated in preparing programs that need implementation as soon as possible. Chapter 3 summarizes the economic incentive workshops and suggests actions for the future.

One item that every workshop discussed was the National Energy Act (NEA). Instead of discussing the item piecemeal, major events are presented here in summary:

The National Energy Act - There are two distinct parts to the NEA: the tax section, and the public utilities regulatory policy section.

1. Tax Section:

- a. Intangible drilling costs can be deducted for geothermal. It is subject to a minimum of 15% for noncorporate taxpayers (this provision is designed to discourage "tax shield" investors in favor of bona fide investors).
- b. The depletion allowance is permitted at the same rate as that received by oil and gas interests (22% declining to 15% by 1984).
- c. There is a developers "only" tax credit of 10% on investment for geothermal. Utilities that generate electricity by oil and gas are not eligible.
- d. Finally, there is a residential energy tax credit. Either a solar or geothermal installation can take a 30% credit for the first \$2000 or a 20% credit for the next \$8000.

2. Public Utilities Regulatory Policy Section:

FERC has responsibility for wheeling and intercommunications of interstate utility activity. Geothermal power, though perhaps falling at times into the area of renewable resources, is not specifically mentioned in these sections of the Act. The wheeling provisions provide for assent only when new growth is jeopardized. In addition, a utility is permitted to use oil and gas as a fuel if other fuels are not available. Synthetic fuels are exempt.

SUMMARIES OF THE WORKSHOPS

Workshop I - Developers Workshop on Economic Incentives for Geothermal Development (October 17, 1978).

The Participants

The corporate participants included representatives from the following: Geothermal Resources International, Aminoil USA, Union Oil, Sunoco Energy Development, Geothermal Power Corporation, Thermogenics, California Energy Company, and McCulloch Geothermal.

State participation included representatives from the Energy Commission, State Lands Commission, Department of Conservation, and the Public Utilities Commission. Also, the National Conference of State Legislatures was represented.

Background

A. The National Energy Act

The Act is composed of the following relevant sections: There is a 22% depletion allowance for geothermal that declines to 15% between 1980 and 1984; there are tax deductions for intangible drilling costs; there is an investment tax credit provision which includes all producing and generation equipment through the power plant to the transmission lines; and there is a 50% limitation on deductions of net income on property.

General Philosophy of This Group

The developers' viewpoint seemed best summed up by comments expressed by Union Oil that "every little bit" (of incentives) helps. The developers were not pessimistic but believed that much could be done to improve their situation.

Barriers to Development

The barriers listed by the developers included very important tax questions; lack of governmental coordination; horrendous paperwork requirements for environmental documents by government; utility reluctance to participate in a geothermal commitment to development; regulatory problems, particularly with the ARB and PUC; and general technical problems.

A. Taxation - The major tax question of concern to the industry is the inappropriate taxation on all levels on the value of investment as opposed to taxation on actual production.

B. PUC

1. The Commission must develop a broader criteria for accepting research and development within the rate base.

2. Pricing mechanisms - the developers believe that if the PUC forced the utilities to accept either "take-or-pay" contracts, rate base relief, or some "undepreciated value" tax relief, many problems relating to price negotiations with the utilities would be resolved.
- C. ARB - The technology of pollution abatement is rapidly changing from day to day. The developers would like it pinned down to a specific plant. Once construction has begun, the project adheres to the rules of the instant.
- D. Review - The State should provide a designated mechanism for review of the geothermal regulatory climate. Constant exposure should expedite resolution of inter-governmental conflicts.
- E. The State should assume responsibility for coordinating and implementing in coherent fashion State policy with the Congressional delegation.

Workshop II - Investor-owned Utilities (October 20, 1978).

The Participants

Representatives of the industry included: Pacific Gas and Electric, Southern California Edison, and San Diego Gas and Electric Company.

In addition, there were representatives of the California Energy Commission, the consultant to the Assembly Subcommittee on Energy, the Department of Economic and Business Development, and the Department of Conservation.

Issues:

A. Reservoir Insurance and Reliability

This concept is based on the idea that insurance for investment may stimulate development. The need for such insurance is based on the high degree of risk that an investor (utility) must make to achieve an energy producing well.

The utilities, by law, are conservative in their approach to investments. The consumer must receive the least expensive energy available under the law.

From the utility perspective, a key problem is the potential for reservoir failure. If oil supplies are lost for some reason, alternatives, at some price, can be obtained. If the geothermal reservoir is lost, there is no similar resource alternative.

In addition, the experience of geothermal reservoirs is slight. Much is still to be learned about their normal operations and longevity.

As a result of these circumstances, the utilities need reassurance that their investments at a minimum will not be lost. A well planned insurance program plus other incentives (e.g., bond authority, loan program, interest payments, etc.) might work.

B. Comparability

Comparability of economics between geothermal and its alternatives (with the exception of hydropower) is not that different. Oil and geothermal brine costs are close while nuclear and coal are slightly lower than geothermal costs. Utility companies are not risk-takers. The potential for technical failures, inflation, and general lack of knowledge about geothermal production contribute to a considerable reluctance to proceed in this area of development without reduction of investment risk.

In addition, there are at least two important indigenous problems for geothermal: (1) utilities like the economies and efficiencies of scale that can be achieved by building large nuclear, oil and coal facilities; and (2) utilities can look at the site specific nature of geothermal locations as a limitation on options.

Some incentives might help. For example, if the State depletion allowance were reinstated to the developers, it is estimated that there could be as much as a 4 to 6 mil reduction in costs. This could substantially stimulate growth of development.

C. The PUC

Historically, with the exception of a general policy relating to any plant that fails, the PUC has rejected attempts by the utilities to secure rapid write-offs for geothermal installations. In addition, demonstration plants have never been included in the rate base. Correcting these situations could stimulate the industry.

One principal of PUC regulatory law is that a utility should make every effort to select energy resources that are least expensive in terms of life cycle costs to the consumer. Though geothermal is competitive with oil, it seldom gets preferred treatment in utility rate case presentations. The policy of the Commission, whether by internal decision or legislative action, should be changed to permit generally comparable technologies to be reviewed equivalently.

D. Creation of a Loan Pool

One utility suggested that a pool, jointly subscribed by participating utilities could serve as an incentive to development. Low interest loans obtainable from the pool could serve as a source of risk capital. Of course, the risk itself is not mitigated by this approach, but used in conjunction with other incentives, it could prove useful. One added advantage is that publicly owned utilities could participate in such a program.

A bond authority might serve as a workable alternative.

E. Federal Loan Guarantee Program and Bond Authority

Edison noted that while the loan guarantee program may be of some use to the developers, it failed to serve the company's interest in any substantial way. The principal concern of Edison is the interest ratio on

investments. This viewpoint generally was supported by the other investor-owned utilities with the added comment that they were only lukewarm toward a bonding authority, depending on the terms of the agreement.

Miscellaneous Comments

A. Air and Water

As the State regulatory problems resolve themselves through statutory changes, air and water problems rise to priority in the eyes of the utilities.

Of particular concern is the rapidly changing abatement technology. There needs to be a permanence of commitment by the involved governments as plants proceed. Retrofitting existing plants is difficult and very expensive.

B. Incentives for Efficiencies

Developers believe there is little incentive for utilities to be efficient in geothermal operations. Geothermal activity for most utilities represents such a small portion of the overall resource mix that the slightest inhibiting factor (such as government involvement is perceived) tends to convince the utility that its time could be spent more productively in some other resource area.

Workshop III - Publicly Owned Utilities Workshop (October 26, 1978).

In Workshop III, the publicly owned utilities and other participants enunciated the following issues and comments.

Structure

The structure of municipally owned utilities is special and must be considered when developing incentive recommendations. Certain issues arise out of this "different" construction of law by the State:

1. In lieu property taxes are issues with local governments. In the post-Proposition 13 era, sources of income are especially sensitive. Perhaps other State sources of income such as BLM geothermal lease revenues would be alternative income sources to the old normal tax base (i.e., assuming that local governments believe it absolutely necessary to raise funds for planning for and mitigation of geothermal problems).
2. Non-taxable bonding excludes municipally owned utilities from the benefits of the federal loan guarantee program. The new tax differential payment provisions of the law may help.
3. In the post-Proposition 13 world, capital investment accumulation is more difficult for locally run government entities. The law limits their taxing ability and most elected officials are hesitant to encourage new locally approved tax initiations.

Status of Geothermal

The issue of the legal status of geothermal (i.e., mineral, water, or steam) needs further clarification to settle ownership, royalty, and jurisdiction questions.

Tax Incentives - All incentives mentioned seem of little value to the municipal utilities.

Reservoir Insurance - There are many questions about the effectiveness of such a program and very few answers. The biggest "plus" enunciated seemed to be the fact that such an insurance plan apparently could not hurt.

Technology - There should be an aggressive, perhaps government-funded, program to resolve the technical issues such as scaling, a Heber-like binary project, H₂S advanced abatement actions, etc.

Baseload vs. Peaking - All utilities, private or public, are concerned about providing energy to their customers at the least expensive cost. As a given utility constructs its supply mix, it carefully reviews the economics of each component. The least expensive energy source is assigned to the baseload requirements of the company as a high priority; the most expensive component is assigned to periodic use (peak loading).

Given the fact that the economics have shifted toward geothermal (i.e., the price of oil has rapidly increased, and California has reduced its reliance on nuclear power) the publicly owned utilities have grown more interested in geothermal production.

Incentives - The Department of Energy briefed the group on federal incentives.

The Federal Geothermal Loan Guarantee Program can authorize up to \$100 million/project or \$200 million/borrower. The guarantee must not exceed 75% of any given project. Costs for a given project include exploration, research and development, acquisition and development, and costs for development of electric and non-electric purposes. DOE must be reasonably assured of repayment. Only three loans since the program's inception (1974) have been granted. New changes in February (1978) expanded the provisions of the program to include interest on differential payments (difference between the interest obligation had the bonds been tax exempt, and the cost of similar taxable bonds).

(NOTE: later in the transcripts: (page 129) it was suggested that the Geothermal Omnibus Bill could be amended to give municipally owned utilities a 90% loan guarantee to compensate for the advantage gained by the publicly owned utilities. While this amendment has survived to date within the congressional process, it has not yet been adopted by the Congress.

The Geothermal Omnibus Bill

Two federal Senate bills were introduced in 1979 that covered many changes in the law affecting geothermal law and were reviewed by Congressional committees. These two measures were S.1338 (Church) and S.1330 (McLure).

The CEC and the State Lands Commission reviewed and presented testimony on these bills on July 18, 1979 in Washington D.C. The other members of the Technical Advisory Committee were asked for comments.

The issues addressed in the Energy Commission draft included geothermal leasing (i.e., the definition of KGRA, access to State land in less promising areas, reclassification of "no bid land", acreage limitations, developer due diligence, the issuance of geothermal leases on OCS, phased lease development, the separation of exploration and development issues, issuance of free use permits for direct uses by nonprofit organizations, etc.) economic incentives (i.e., reservoir loans, the loan guarantee program, environmental review, reservoir issuance, etc.) and government actions that might expedite geothermal projects (i.e., alternative energy resource priority, shortening of timelines, development of innovative administrative agreements such as MOU's, etc.).

To date there has been no final action by Congress.

Reservoir Insurance

The publicly owned utilities characterized the idea of reservoir insurance as "interesting, but highly suspect". Questions raised included: How do you determine requirements? When can you claim insurance when a given field begins to fail? What is the information required for issuance of a policy?

Problems raised are: if the risk is guaranteed, then won't developers tend to overdrill?

Of course, it is possible that reservoir insurance could serve as another incremental element in convincing lenders to lend.

Can the Regulatory Process Be Shortened?

Municipal utilities felt that streamlining the regulatory process is possible, though time should be given to evaluate the effectiveness of recent passage of laws limiting geothermal timelines.

The workshop seemed to feel that one stop shopping (preferably the CEC) for State review (as opposed to local and State review) were the best examples of progress in this area.

Workshop IV - Financial Institutions (October 27, 1978).

Participants

Investment corporations were represented by Security Pacific Bank, Bank of America, and Kidder Peabody.

The State entities represented were the California Energy Commission, Department of Conservation, Public Utilities Commission, the Department of Water Resources and the State Assembly.

Also, the National Conference of State Legislatures was represented.

What is Geothermal?

The issue of clearly defining the classification of geothermal resources is paramount. Are the resources water, mineral, or gas?

The federal and state laws are equally vague on this issue and should be clarified. The Steam Act of 1970 did little to clarify the matter and should be amended to reflect the direction that policy makers think appropriate. The result of this clarification will have profound consequences for tax law related problems: can drilling costs, as well as depletion allowances, be deducted? (IRS maintains that both are not allowable).

The Federal Loan Guarantee Program and Banking Practices

Banks do not take risks on equity investment. However, the current financial structure permits the benefits to first go to the equity lender (if the loan fails, the equity lender gets his money first). The bank lender does not get the tax credit (the developer gets it), nor the depletion allowance (the utility or developer receives it), nor the tax depreciation (the utility or developer receives it).

If a California utility (all of whom are prime risks and have their own lines of credit) wanted to assume a geothermal risk, the lender will probably lend.

Banks do not pretend to know the technology problems involved in geothermal development, and rely on utility input. However, banks are concerned about the operator, the equity at stake, and the degree of risk. The form of a loan, direct or lease-back, is of little concern.

Bond Authority

An 87-88% guarantee will induce lenders to loan for geothermal according to Kidder Peabody. An alternative might be to create a joint venture between state, federal, oil companies, utilities, etc.

Bank of America, noting the sudden upswing in interest in geothermal development, suggested that a hands-off policy might be most appropriate. The industry may be able to take care of its own affairs without further government involvement.

Miscellaneous

Trust - It appears to the lenders that the utilities in particular still have doubts about geothermal technology. Geothermal is not a simple "turn-key" operation. Other options, as far as utilities are concerned, are still more reliable. It is the fear of failure, not tax incentives or benefits, that is the source of utility conservatism.

The PUC - The PUC has the ability to do a great deal to encourage development: rapid write-offs (accelerated expensing), specialized rate treatment, research and development allowances, customer loan programs, etc.

WHAT NEEDS TO BE DONE

In reviewing the workshops' transcripts, there are few geothermal issues not covered. What is needed now is competent economic and analytical evaluation. The issues described in the summary are outlined below with suggested solutions based entirely on the transcripts of the four workshops.

At the conclusion of this discussion is a proposed work plan designed to accomplish these tasks:

Taxation

Existing federal law provides for a 22% depletion allowance for geothermal that declines to 15% by 1984; there are tax deductions for intangible drilling costs; there is an investment tax credit provision which includes all producing and generation equipment through the power plant to the transmission lines; and there is a 50% limitation on deductions of net income on property.

Changes in tax law that should stimulate development include:

1. Elimination of taxes at all levels that are based on the value of investment as opposed to taxation on actual production and return. Geothermal wells, though somewhat similar to oil and gas wells in appearance, are very different in terms of production. In addition to taxing bodies, the assessment entities (e.g., the Board of Equalization) should reflect this policy change.
2. Some method, such as in lieu payments should be developed for local government to receive compensation for geothermal resources exploited by publicly owned entities that pay no taxes.
3. Partnership laws should be adjusted to permit non-corporate investors to achieve a tax shelter. This could produce substantial investment opportunity, which the industry greatly needs, in this alternative resource area.

Federal Loan Guarantee Program

The DOE Geothermal Loan Program was created under the 1974 Geothermal Resource Development and Demonstration Act. Regulations for the program were published in 1976 and the first loan was approved in 1977. DOE has been working with the banking community and industry to streamline the program. Under the 1976 regulations, the federal government could guarantee a loan up to 75% of the total project cost to a maximum of \$50 million per project or \$100 million per borrower. Duration of the loan is a maximum of 30 years, and collateral is usually limited to project assets only. The project must be environmentally acceptable and show a reasonable assurance of loan pay-back. The program was set up to get lenders and the geothermal community to work together.

Additions to the program since 1976 include authority to give assistance, increase loans to \$100 million per project and \$200 million per borrower, and streamlining the regulations to provide more financial flexibility (e.g., institutional investors may participate in financing, etc.).

Developers have the following complaints about the program: (1) the program is of no use to large developers because they could, under no circumstances, default because their assets are too great; (2) the overhead for a company on such a loan may run as high as 3%. This impacts detrimentally on the total cost of the loan and tends to push costs above the rate of normal commercial borrowing; (3) the federal personnel are constantly changing, thus adding to delays and confusion; and (4) research and development costs should be permissible expenses in the loan program.

In addition, utility companies believe that the program cannot serve their interest in any substantial way. Although the loan guarantee program may be of some use to the developers, their principal concern is the interest ratio on investments.

Banks do not take risks on equity investment. Under the current financial structure of the program, the benefits of the loan program go first to the equity lender (if the loan fails, the equity lender gets his money first). The bank lender does not get the tax credit (the developer gets it), nor the depletion allowance (the utility or developer receives it), nor the tax depreciation (the utility or developer receives it).

If a California utility (all of whom are prime risks and have their own lines of credit) wanted to assume a geothermal risk, the lender will probably lend.

Banks do not pretend to know the technology problems involved in geothermal development, and rely on utility input. However, banks are concerned about the operator, the equity at stake, and the degree of risk. The form of a loan, direct or lease-back, is of little concern.

In conclusion, while most qualified individuals who reviewed this program felt that the loan program suffered from very serious problems, they also agreed that an increase in the per centum guaranteed would help.

Reservoir Insurance

Reservoir insurance can be described as a method of providing conservative risk takers with a guarantee that their investment will be recovered substantially if a geothermal reservoir fails to produce as anticipated. The need for this investment proposal is based on the fact that geothermal development history is sparse. Utilities and investors are very concerned about drilling a field for which there is no adequate "life of a well" information. In addition, the utilities know that if they invest in a contract for oil supplies, failure means, at worst, buying other supplies somewhere else at higher prices; failure of resource means the loss of the geothermal investment.

Problems with such an insurance program revolve around who pays, the time for a given project, when coverage is most desirable, and the differences that occur as a field reaches its limits of age and production.

Developers, while having some reservations support the concept by enunciating the philosophy that "every little bit helps".

Publicly owned utilities feel that the idea of reservoir insurance is "interesting, but highly suspect". How do you determine requirements? When can you claim insurance when a given field begins to fail, and what is the information required for issuance of a policy?

In summary, not enough is known about the details of the concept to embrace enthusiastically. The idea seems good, but more detailed information is needed, particularly about the economics of such an incentive.

Bond Authority

One new proposal is creation of a bond authority that will finance geothermal development. One approach would be to create a state entity similar to the California Pollution Control Financing Authority. This existing entity has minimal staff and is still able to sell bonds that support the cleanup of industrial pollution.

However, some argue that in the wake of Proposition 13, public funding mechanisms have become less popular. Obligation bonds, which have the guaranteed fiscal support of the issuing agency, are less acceptable to the public. Revenue bonds, which are not guaranteed by the issuing agency, are less acceptable to the lenders.

Also, while it is true that municipally owned utilities now have the power to engage in speculative ventures if they are within the public purposes of their organic acts, none to date has felt confident enough to issue bonds based on secured revenues from geothermal exploration or development.

In summary, while the idea needs further exploration, there are practical problems such as creation of a new bureaucracy, the tendency of bonds proceeds to favor big corporations, and limitations on the State's total lending capacity that need resolution.

Loan Pool

Some utilities have suggested that a loan pool, jointly subscribed by participating utilities, could serve as an incentive to development. Low interest loans obtainable from the pool could serve as a source of risk capital. Of course, the risk itself is not mitigated by this approach, but used in conjunction with other incentives, it could prove useful. One added advantage is that publicly owned utilities could participate in such a program.

Definition of Geothermal

The issue of clearly defining the classification of geothermal resources is paramount and directly related to the viability of any comprehensive incentive program. Are the resources water, mineral, or gas?

The federal and State laws are equally vague on this issue and should be clarified. The Geothermal Steam Act of 1970 did little to clarify the matter and should be amended to reflect the direction that policy makers think appropriate.

Lease-Back Concept

This concept permits energy facilities to be purchased by non-utilities (i.e., banks), and to be non-regulated by the PUC while leasing equipment to the utilities. It should be explored further.

Related Problems

Beside specific issues that relate to geothermal economic incentives, there are other related matters that can impact on the success or failure of incentives.

A. Peakload vs. Baseload

The structure of the utilities, both private and public, dictate conservatism in their investments in new resources. Investment procedures dictate that baseload resources should be their most reliable resource. Therefore, assignments in supply priority go to other resources. The PUC should force the utilities to reevaluate this tradition if geothermal development is to be expedited. "Take or pay" contracts for geothermal developments could be one way to achieve maximum use of available geothermal resources.

B. Modification of PUC Policies

The Public Utilities Commission has failed to treat geothermal development in a way that reflects its "preferred" status. Possible changes in policy that would help are:

1. The PUC could permit a greater portion of R & D for geothermal development to be recovered by the utilities from the rate base.
2. The PUC could approve an "all events tariff" for geothermal development.
3. The PUC could encourage utilities to rely on geothermal power for base load use.
4. The PUC could encourage the utilities to participate in "take-or-pay" contracts with developers.
5. The PUC could permit developers to recover from the utilities the undepreciated value of plants idled because of utility preference for other resource facilities.
6. The PUC could permit the utilities to take rapid write-offs (accelerated expensing) for geothermal installations.
7. The PUC could include selected geothermal demonstration plants in the rate base.
8. Instead of always opting for the technology of least direct cost to the consumer, the PUC could establish a new policy of reviewing comparable technologies in an equal manner when approving expenditures for construction of new power plants.

PROPOSED ECONOMIC AND INSTITUTIONAL WORKPLANS

Based on the above information, an outline workplan has been developed to reflect identified needs.

Total amount for each proposal

\$50,000

Workplan I

1. Using the four workshop summaries, transcripts, and other pertinent documents, identify the most significant economic and institutional incentives relevant to California that will encourage the development of geothermal technology.
2. From these selections, identify those preferred actions that will best reflect the renewability of the resources.
3. Expand and describe the consequences of the four selections.
4. Prepare appropriate draft State Legislation that will implement the economic and institutional incentives identified. The drafting of this legislation should include a section-by-section justification and strategy for adoption.

CONCLUSIONS

CONCLUSIONS

1. Reform of the regulatory process instituted by the CEC and the Department of Conservation has been remarkably successful to date, and should continue.
2. One area of great concern to the State is proper analysis of appropriate geothermal economic and institutional incentives. This report proposes a program which should be funded as soon as possible. Using existing documents and other relevant material, prioritize the best incentive program for California and prepare necessary State legislation.
3. While issues raised by RARE II in connection with geothermal development have not been fully resolved, efforts to reach an understanding between the federal government and the state will be pursued. (Refer to text for details of proposals.)
4. The organization of the Geothermal Coordinating Council which serves as an information springboard must be pursued in the interest of creating a forum for full review of environmental and development issues. Only in this way can the complex geothermal issues that face the State be resolved in an expeditious manner.

APPENDIX I

Geothermal Coordinating Council
Memorandum of Understanding (MOU)

MEMORANDUM OF UNDERSTANDING CREATING
A STATE GEOTHERMAL COORDINATING COUNCIL

"The purpose of the Geothermal Coordinating Council (GCC) is to provide a forum in which the various entities and the public may meet, present, discuss concerns, and develop recommendations related to geothermal energy development activities in California with the goal of identifying and resolving issues in a timely and efficient manner. It is the intent of the signatories to this Memorandum of Understanding (MOU) that the GCC will not and cannot act as a separate State entity which expresses policies formulated by a vote of its membership. Any recommendations of a policy nature identified by this forum shall be expressed exclusively through the positions taken by its member agencies, through already well established means and pursuant to Section 28 of the MOU."

This understanding is entered into this _____ day of _____, 1979, by and between the parties specified below and any other party subsequently joining according to the provisions of this understanding;

W I T N E S S E T H

WHEREAS,

- o there are substantial geothermal resources in the State of California;
- o the development of geothermal resources in California is technically feasible and economically attractive;
- o geothermal energy is a preferred energy resource which can assist substantially in meeting the energy needs of the people of California;
- o the development of geothermal resources may produce substantial revenues to state and local governments and local economies but may also produce environmental impacts if not properly mitigated;
- o geothermal energy development projects are regulated by a multitude of state, local, and federal agencies according to their respective statutory authorizations and associated environmental statutes; and
- o the state agencies involved in geothermal energy regulations desire to achieve
 - a more efficient use of financial and human resources;
 - a reduction in duplication of effort;
 - a better coordination of programs, policies, regulatory activities, and information exchange;

a broader range of technical, financial, and environmental expertise in relation to their activities in the review, processing, and regulation of geothermal energy development projects and associated effects; and

prevention or mitigation necessary to offset impacts to other resources of the State due to exploration and/or development of geothermal resources."

- o state regulatory agencies have responsibility to ensure that geothermal energy is developed expeditiously while ensuring its environmental acceptability;

NOW THEREFORE, in consideration of the mutual covenants, conditions, and promises hereinafter set forth, it is agreed as follows:

1. GENERAL

1. The undersigned parties agree to form a State Geothermal Coordinating Council, herein referred to as the Council, with responsibilities and powers specified below.
2. The Council may be involved in a broad range of activities relating to geothermal energy, except as expressly limited below in Section VI.
3. The Council may carry out the following functions:
 - a. Communication and coordination of
 - i. statewide and interagency geothermal regulatory policy and attendant programs of Council members;
 - ii. joint initiation and review of, and response to, federal and state legislation potentially affecting geothermal resources, energy development, and utilization;
 - iii. recommendations for programs and policies to the appropriate federal agencies and to the Congress;
 - iv. state programs and policies and regulations to the appropriate local, regional, and federal governments and to the public;
 - v. technical and environmental studies and information affecting or of interest to Council members; and
 - vi. ways to improve efficiency in project review, decision making, and enforcement of applicable conditions and standards.
 - b. Assistance to Council members
 - i. in the review and formulation of geothermal policies, regulations, or programs upon request; and
 - ii. in the form of advice and technical expertise on geothermal matters of concern to member agencies; and

- c. The Council will encourage environmentally acceptable geothermal goals necessary to offset unavoidable impacts to the State's resources through existing and appropriate mechanisms.
- 4. The Council shall pursue all reasonable means within its power to achieve its goals and objectives.

II. MEMBERSHIP AND ATTENDANCE

- 5. The Council shall be composed of one representative of each of the following agencies:
 - a. Air Resources Board
 - b. California Energy Commission
 - c. Department of Conservation
 - d. Department of Fish and Game
 - e. Department of Parks and Recreation: Office of Historic Preservation
 - f. Department of Water Resources
 - g. Department of Health: Environmental Health Services Branch
 - h. Solid Waste Management Board
 - i. Water Resources Control Board
 - j. Public Utilities Commission
 - k. State Lands Commission
 - l. Office of Planning and Research
- 6. To be a member of the Council, each agency listed above must be an official party to this memorandum of understanding.
- 7. The representative of each member agency, and alternate, shall be a person designated by the Chairperson, President, or Director of the respective agency, which designation shall be communicated to the Council within 30 days of the execution of the understanding, or subsequent joining by a new party.
- 8. In addition to official agency members, the Council shall also have three public members appointed by two-thirds vote of the Council membership within 60 days of the execution of this understanding. No such public member shall be employed directly with any official Council member agency. Public members shall disclose the names of agencies with which they've contracted for services within 15 days of being nominated to the Council. Public members shall not be signatories to this understanding but shall have all other rights and duties as an official member. Term of office shall not exceed 18 months, with staggered terms.

9. If funds are available, the GCC will select a member agency to be responsible for reimbursing public members for their travel expenses.
10. Each official member agency representative may be accompanied in Council or committee meetings by staff for assistance as needed.
11. The Council shall meet at least bi-monthly. The standing and ad hoc committees shall meet as needed or otherwise specified by the Council.

III. ORGANIZATION AND OPERATIONS

12. The Council shall elect by a majority vote a Chairperson, Vice Chairperson, and Secretary who shall each serve for a period not to exceed 18 months, or until this agreement is terminated or superseded by an act of the Legislature, whichever occurs first. The Chairperson, Vice Chairperson, and Secretary may be re-elected.
13. Duties of the Chairperson shall include:
 - a. directing the overall administration of the Council and its activities;
 - b. coordinating activities of the Council's standing and ad hoc committees;
 - c. inviting attendance and presentations by special non-Council member persons to Council or committee meetings;
 - d. conducting Council meetings;
 - e. providing clerical staff support to the Council as required;
 - f. representing the Council, upon its authorization, at meetings of federal, state, or local governments or other groups; and
 - g. other activities as directed by the Council.
14. Duties of the Vice Chairperson shall include:
 - a. assisting the Chairperson in execution of his/her duties;
 - b. serving as substitute in the temporary absence of the Chairperson in any function of the Chairperson; and
 - c. other assignments as directed by Chairperson or Council.
15. Duties of the Secretary shall include:
 - a. preparing and keeping minutes of Council meetings;
 - b. other assignments as directed by Chairperson; and
 - c. preparing and mailing notices, agendas, and minutes of meetings to members and other interested parties.

16. The Council shall adopt specific rules of order and procedures for conducting its meetings and execution of its functions as required.
17. The Council may create standing and ad hoc committees as needed according to the provisions of this agreement and any subsequent rules adopted pursuant to paragraph 15 above.
18. Each official representative of Council member agencies shall serve as staff to the Council and its committees. Clerical services for the office of Secretary will be provided by the Secretary; clerical and administrative staff services shall be provided by the chairperson of each committee.

IV. VOTING, ADOPTION OF RULES, MOTIONS, AMENDMENTS

19. Each official member agency and public member shall be entitled to one vote, to be cast by the officially designated representative or alternate specified in paragraph 7.
20. No public member shall appoint a proxy.
21. The adoption of any rule or procedure, authorization for action, policy position, or appointment of public members, or other such decision, shall be made by a majority vote of all Council members.
23. Any solicitation of funds or the amendment of this understanding shall be made by two-thirds consent of all official signatory parties.

V. ADDITION OF NEW MEMBERS, TERMINATION OF

PARTICIPATION, TERMINATION OF UNDERSTANDING

24. Any state agency not presently an official member of the Council may be invited or may petition the Council for membership stating the reasons or interests of the agency for desiring to join the Council. The petition for membership shall be discussed and acted upon at the next scheduled Council meeting after 30 days from receipt of the petition by the Chairperson. Any state agency so petitioning shall be accepted for membership upon a majority vote of the official members of the Council.
25. Any member agency or public member may terminate its membership or participation in the Council or any of its functions upon 30 days' written notice served upon the Chairperson, stating its reasons for such termination. During the ensuing 30-day period, all parties shall actively attempt to resolve any disagreements so that the termination can be avoided.
26. Failure by any agency or public member to attend four consecutive Council meetings, or all Council meetings during a six-month period, whichever time is greater, shall be grounds to infer a repudiation of this understanding and termination of participation by that agency or person.
26. This understanding may be terminated upon express authorization of all signatory parties, or when the number of signatory parties remaining becomes less than five, or if superseded by an act of the Legislature.

VI. LIMITATIONS

27. This understanding or any actions of the Council or its committees shall not abridge or infringe upon any member or non-member agency's or entity's authority, rights, or responsibilities.
28. The GCC provides a forum for communication and coordination among member agencies. Representatives to the GCC are expected to take draft policies developed in the GCC back to their respective department, agency, or commission for discussion and decision by their Director or Chairperson regarding support of the policy. GCC policy formulation shall follow this process.
29. The Council shall not perform, or attempt to perform, any function committed by law to any member agency or any other legally designated entity.
30. The Council shall not take part in any internal budgetary or personnel matter of a member agency unless specifically requested to do so by that agency. Such action shall then be carried out only upon majority vote of the Council.
31. The Council shall not accept or solicit federal or other funds for any activity or project that can be accomplished by or through any one or number of state agencies.

VII. EFFECTIVE DATE

32. This understanding shall take effect when duly executed upon official ratification of five of the agencies specified in paragraph 5.

IN WITNESS WHEREOF, the parties hereto have caused this agreement to be duly executed on the respective dates set forth opposite their signatures.

AIR RESOURCES BOARD

Date _____

By _____
Mary Nichols, Chairperson

ENERGY COMMISSION

Date _____

By _____
Richard L. Maullin, Chairperson

DEPARTMENT OF CONSERVATION

Date _____

By _____
Priscilla Grew, Director

DEPARTMENT OF FISH AND GAME

Date _____

By _____
E. C. Fullerton, Director

PUBLIC UTILITIES COMMISSION

Date _____

By _____
John E. Bryson, President

STATE LANDS COMMISSION

Date _____

By _____
William F. Northrop, Executive Officer

OFFICE OF PLANNING AND RESEARCH

Date _____

By _____
Deni Greene, Deputy Director

APPENDIX II

TAC Proposal for Distribution of BLM Revenues

LEGISLATIVE INTENT

It is the intent of the Legislature to encourage alternative energy development in the State. Further, the Legislature recognizes that California has substantial geothermal energy potential. Geothermal resources offer excellent energy sources which are advantageous in that: (1) they are indigenous to California; (2) their development provides a stimulus to the State's economy; (3) the environmental impacts of geothermal direct heat may be more acceptable than those associated with traditional electrical generation, and mitigation of such impacts is better understood than those associated with traditional electric generation technologies; (4) their development reduces dependence on other fossil fuel sources; (5) geothermal power plants are small scale distributed technologies which can increase system reliability and flexibility; and (6) the lead time for electric power plant construction is relatively short. Based on the opportunities afforded by geothermal development, it is the intent of the Legislature to promote environmentally sound geothermal resources development.

POLICY

It is the policy of the Legislature to encourage environmentally sound geothermal resources development. It is further the policy of the Legislature to reduce the State's dependency on scarce fossil fuels. Therefore, in order to ensure that geothermal development occurs in an orderly and sound fashion, the Legislature hereby declares that all revenues derived from the U. S. Bureau of Land Management's activities under the Geothermal Steam Act of 1970 and distributed through Section 317 of the Federal Land Policy and Management Act (FLPMA), PL 94-579, be appropriated in the following ways:

GENERAL PURPOSES

All monies returned to the State pursuant to Section 317 of FLPMA shall be used to promote geothermal resources development related activities including, but not limited to:

- (1) Carrying out necessary planning activities to ensure orderly, environmentally sound geothermal development in as expeditious a manner as possible, including, but not limited to:

- (A) resource assessment and exploration technology
 - (B) local and regional planning and policy development and implementation for complying with State and federally mandated programs
 - (C) identification and incorporation of feasible mitigation measures necessary to offset adverse impacts to the State's natural resources including the necessary collection of baseline data and monitoring
 - (D) preparing geothermal elements to county general plans, zoning and other ordinance and accompanying environmental and planning documents.
- (2) Providing the necessary public services required to implement, mitigate and enhance geothermal resources development, including, but not limited to:
- (A) processing requests and preparing permit application, s related environmental documents, monitoring and inspection of geothermal activities to insure compliance with local, regional and State laws, regulations, ordinances and other geothermal related activities: identifying and carrying out actions necessary to mitigate impacts as well as participating in research and development activities
 - (B) planning, construction, operations and maintenance of necessary public services.
- (3) Projects demonstrating the technical feasibility and economics of geothermal direct heat and electrical applications.
- (4) Other projects that can be shown to promote development consistent with the policies of this Act.

*SPECIFIC PROVISIONS

Public Services means those services which local jurisdictions must provide as a result of geothermal development activities.

Local Jurisdictions means legal subdivisions of the State, including cities, counties, and special districts.

County of Origin means any county in which the Bureau of Land Management lease sale occurred.

Geothermal Resources Development Account means the account established in the State Controller's Office which shall consist of all monies returned to the State by the U. S. Treasury pursuant to Section 317 of the Federal Land Policy and Management Act.

Geothermal Resources Development Fund means those funds which are earmarked for disbursement by the Council and which shall consist of 40 percent of the Geothermal Resources Development Account.

Potential or Known Geothermal Resources means those areas of the State in which there is an identified geothermal resource either as: a) known geothermal resource area (KGRA) as designated by the U. S. Geological Survey; b) geothermal resource areas as designated by the Division of Oil and Gas; or, c) areas with surface manifestations and other indications of the presence of a geothermal resource.

The Geothermal Resources Development Fund and the Geothermal Resources Development Account are hereby created. All monies in the Account shall be expended for the purposes stated in the Act.

There is in the Department of Finance an advisory body known as the Geothermal Coordinating Council, hereafter known as the Council, which shall establish guidelines for the administration of monies in the Geothermal Resources Development Fund.

The Council shall have the authority to determine which local jurisdictions have potential or known geothermal resources for the prescribed purposes of this Act.

The Council shall coordinate with the California Energy Commission's statewide planning policy and research and development efforts, as well as other affected State agencies' geothermal planning and program activities, for the promotion or regulation of geothermal energy resources in establishing its guidelines for the administration of the Geothermal Resources Development Fund.

The Council shall consist of members from the following State agencies:

- (1) The Chairman of the Energy Resources Conservation and Development Commission of a designee.
- (2) The Director of the Department of Parks and Recreation or a designee.
- (3) The Director of the Department of Water Resources or a designee.
- (4) The Director of the Department of Fish and Game or a designee.
- (5) The Chairman of the Air Resources Board or a designee.
- (6) The Chairman of the Solid Waste Management Board or a designee.
- (7) The Director of the Office of Planning and Research or a designee.
- (8) The Director of the Department of Health Services or a designee.
- (9) The Chairman of the Public Utilities Commission or a designee.
- (10) The Director of the Department of Finance or a designee.
- (11) The Director of the Department of Conservation or a designee.
- (12) The Executive Director of the Native American Heritage Commission or a designee.
- (13) The Chairman of the State Lands Commission or a designee.
- (14) The Chairman of the State Water Resources Control Board or a designee.
- (15) Three members from local government which are to be chosen by the Council of which:
 - (A) one elected official or a designee representing a county where geothermal development has occurred,
 - (B) one elected official or a designee representing counties where geothermal development is imminent, and
 - (C) one elected official or a designee representing counties where there is a potential for geothermal resource development.
- (16) Two representatives from the geothermal industry.
- (17) The Speaker of the Assembly and the Senate Rules Committee shall select one member each from the public sector.

The Chairman of the Council shall be chosen by a majority vote.

Of the monies distributed by the U. S. Treasury to the Geothermal Resources Development Account, 60 percent shall be returned to the county of origin. Any county which is entitled to receive these funds has the opportunity to deny such funds. In such instances, the monies shall revert to the Geothermal Resources Development Fund.

The remaining 40 percent of the funds distributed by the U. S. Treasury shall be placed in the Geothermal Resources Development Fund. The Council shall earmark 60 percent of these monies for allocation to local jurisdictions having potential or known geothermal resources for the general purposes stated above after holding public hearings. The Council shall be responsible for setting annual priorities for the disbursement of funds to local jurisdictions.

This remaining 40 percent shall be earmarked by the Council for State actions necessary to promote geothermal development. The Council shall solicit and review State agency proposals for supplementing existing State programs for the purposes of augmenting support of State agencies' geothermal programs.

Determination of expenditure of these monies requires a two-thirds vote by the members of the Council.

REPORTING AND ADMINISTRATION

The Council shall publish biannually, starting in 1981, a report of the projects funded by the Geothermal Resources Development Fund, accomplishments to date, anticipated goals and objectives for funding future local and State geothermal projects, and the amount expended on each project and by each agency for their geothermal related programs. The Council shall coordinate the preparation of its report with affected State agencies and make its report available as part of the CEC's Biennial Report. This report shall be transmitted to the Legislature and Governor.

No later than January 1, 1989, the Council shall include in its report an analysis of whether there is a need for continuation of the Council and the necessity for the allocation of monies to the Geothermal Resources Development Fund.

The Department of Finance's responsibility shall be strictly administrative and they shall have no authority in any way to allocate funds other than in accordance with the determinations of the Council. The Department of Finance shall appropriate funds from the Geothermal Resources Development Fund for the costs of administration of this Act.

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