BACKGROUND PAPER

FOR

WORKSHOP ON GEOTHERMAL ENERGY

Hawaii State Senate

Committee on Economic Development,
Energy and Natural Resources

State Capitol

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CONTENTS

I. INTRODUCTION

In 1974, the Hawaii Legislature classified geothermal resources as minerals under Chapter 182 (Reservation and Disposition of Government Mineral Rights) of the Hawaii Revised Statutes. This chapter provides for the competitive leasing of state mineral rights, with requirements for bonds, certain lease stipulations and performance standards. Subsequently, the state Department of Land and Natural Resources promulgated regulations for leasing and drilling of geothermal resources (Regulation 8) under Chapter 182 and Chapters 177 (Ground-Water Use) and 178 (Wells, Generally).

The legislature also has made substantial appropriations for geothermal R & D; authorized county governments to develop geothermal resources; set excise tax rate at 0.5% on gross proceeds from geothermal resources; exempted building improvements for the use of geothermal resources from property tax; provided inducements for geothermal electric power development through certain utility regulations; and adopted federal tax benefits for geothermal development established by National Energy Act of 1978.

When reviewing these existing policies for possible improvements, a distinction should be made between electricity production and direct heat applications. These two types of development typically differ on resource requirements, effects on the environment and surrounding communities, financial requirements and the kinds of investors and developers involved. Consequently, different economic incentives and regulatory policies for the two types of development frequently will be appropriate.

II. ECONOMIC INCENTIVES

Governmental incentives historically have been given to new energy and mineral resource industries to help them compete with conventional sources. State and local governments also commonly offer businesses various financial inducements to locate in their community because of the general employment and economic benefits those businesses bring.

Many states have followed this precedent in giving geothermal development a variety of economic incentives through income tax credits, excise and property tax exemptions, loan programs, leasing policies and utility regulatory policies. (see "Enacted Incentives for Geothermal Development")

The various incentives bear differently on the separate phases of development from exploration to utilization. Their costs and effectiveness also vary according to the nature of development - whether large-scale power production or small-scale direct use.

Direct Investment: Investors in geothermal exploration and development expect high returns comparable to the large risks encountered. If the risks appear too great, or if there is considerable uncertainty about the market for discovered resources, funds for exploration and development will not be available.

To overcome these problems in Hawaii, the state could simply finance resource exploration. By this means, resource potential could be determined, providing the basis for attracting industry and utility investments to use geothermal resources. Counties also may adopt this course through their authority to develop geothermal and other alternate energy (Act 36-1978).

Property and Excise Tax: Short of direct investment, the state may encourage exploration and development through tax incentives to private firms. Property tax may be deferred until commercial production begins. Another approach would be to substitute a well-ead tax for ad valorem assessment.

For small-scale projects, the resource could be exempted from property tax, with assessment restricted to the well-head equipment and utilization facilities. This approach essentially would treat the low-temperature resource as water for tax purposes.

Hawaii exempts various categories of industry from its excise (gross income) tax. For instance, pulp and paper manufacturers

using bagasse are exempt for the first five years of production. A similar incentive might be granted geothermal producers. Presently the rate is set at 0.5% (HB 3033-1978).

Loans: Once a commercial resource has been discovered, a state geothermal development loan fund could assist counties and other developers sustain the costs of production wells and utilization facilities. The federal Geothermal Loan Guarantee Program offers this assistance to large-scale developers, but the administrative costs make it unavailable to small projects. A state loan program therefore might make special accommodations for small-scale development projects.

Utility Regulations: Hawaii already has exempted developers of geothermal electrical power from PUC regulations if they sell directly to a public utility, and the state requires utilities to purchase surplus power from such facilities (SB 995-1977).

Another possible incentive would be to reduce or eliminate the risk to utility investments in geothermal facilities due to reservoir failure or volcanic or seismic hazards. The degree of risk facing a utility would be (progressively) reduced by policies to increase the rate of return on geothermal investments; to provide for reservoir insurance financed in part by the utility; to allow rapid amortization of initial geothermal facilities as R&D expenses; to guarantee inclusion of plant costs in the rate base even if the resource or plant facilities should fail.

Lease Provisions: Where geothermal resources are being developed under a state lease, economic incentives can be supplied by reducing or deferring royalties or rental charges, either for the full lease term or until the project has achieved a positive revenue balance.

Breaks on rental and royalty charges may be particularly appropriate for small-scale development, since those charges are likely to be much larger in proportion to the net profitability of the project than in the case of electricity production. Bonding requirements also should be flexible so that small-scale development is not precluded on state lands.

III. DRILLING REGULATION

Drilling regulations should be streamlined and should distinguish between wells on a case-by-case basis. That is, wells tapping a zone of corrosive, high-temperature or pressure fluids require stringent controls. Other, less potentially dangerous wells should not be subject to similar burdens.

Hawaii may streamline the drilling regulatory scheme by addressing the overlapping permit jurisdiction of the Department of Land and Natural Resources and County Boards of Water Supply. For example, both the Department of Land and Natural Resources and the Honolulu Board of Water Supply have regulations relating to notice, plan of operations, casing, logging and abandonment, as well as a $100.00 filing fee. Inter-agency coordination in this regard, including a single application and filing fee, would be a valuable streamlining measure. Alternatively, the state may exempt geothermal wells from local jurisdiction.

The Department of Land and Natural Resources has retained its discretionary authority to establish well requirements on a case-by-case basis in its Regulation No. 8 (1978). Application of such discretion in practice should be monitored. In addition, the Department should extend its discretion in this regard to bonding requirements. The current requirement of a $50,000 bond per well ($250,000 blanket bond) seems excessive for low-temperature, shallow wells intended for direct application.

IV. LAND USE & LEASING

A. Land Use

Hawaii has a comprehensive Land Use Law, dividing the state into four use categories: urban, rural, agricultural and conservation. Urban areas are administered by the counties; state (DLNR) and county jurisdictions overlap with regard to special use permits in rural and agricultural areas; the state administers conservation districts.

Two policy concerns emerge regarding the special use permits. First, as has already happened, the DLNR and a county may disagree on the need for or the issuance of a special use permit for geothermal activities. Clarification of their respective authority in such situations would be helpful. Second, requiring all geothermal discovery activities to obtain special use permitting may be unduly burdensome. The state may wish to certify geothermal operations under a DLNR "exploration permit" as a permitted use in the various land use categories.

It should be noted in this regard, that the issuance of the exploration permit by DLNR will require an environmental impact statement if the action is likely to have a significant effect on the environment.

B. Leasing

Hawaii may wish to refine its geothermal leasing policy to accommodate the special nature of small-scale direct uses as greenhouses, aquaculture facilities and food processing plants. Presently such operations would require a mining lease obtained through competitive bidding as well as a $10,000 bond. These requirements may constitute an unnecessary impediment to small-scale development.

The state may wish to institute a "commercial lease" system for small-scale development as an alternative to the mining lease system. Under this approach, the Department of Land and Natural Resources would have a choice of leasing options in its management of state geothermal resources. The DLNR would have the authority to grant non-competitive commercial geothermal leases where the applicant presents a small-scale plan of operations well-matched to the site and resource in question.

Such a system would likely serve as a major incentive to rapid small-scale development. Such development will return many benefits to state and local economies in terms of job creation, tax base enhancement and displacement of fossil fuel consumption. Additional revenue to the state would be secured through a negotiated rental.

V. RELATIONSHIP OF GEOTHERMAL TO WATER RESOURCES

Title to geothermal resources generally will be obtained on a lease issued by the owner of the mineral estate, whether state or private. Ancillary property rights to the resource also may be created by the granting of a groundwater use permit by the Board of Land and Natural Resources. This would occur only in "designated ground-water areas." Outside such areas no prescriptive property rights to groundwater (geothermal) may be established through use. Production in such areas may be subject to "reasonable use" regulation by the Board.

Two policy concerns emerge in the groundwater area. First, a groundwater use permit should not create a geothermal property right absent a mineral lease. This is a special concern in Hawaii, since a geothermal lease, by definition, conveys title only to enthalpy (and by-products) and not to fluid transfer mediums. The Board has the authority to establish classes of permits. It is suggested that a class of "thermal groundwater use permits" be established. As a condition of issuance of such permits, the applicant should demonstrate valid title to the thermal resource via a geothermal mineral lease.

The second concern relates to integrated geothermal reservoir management under a system of correlative rights - equitable apportionment. The property right to a specific quantity of fluid inherent in a groundwater use permit is incompatible with a system of flexible apportionment. However, should the state assert the public interest in efficient reservoir management (correlative rights), the Board may have existing authority to circemvent this problem. That is, where the geothermal system does not contain enough fluid to satisfy all the permit quantities, the Board may, after a public hearing, apportion production levels in the public interest.

It is suggested that legislation be considered which would direct the Board to establish a class of thermal water permits as outlined above and would express the public interest in integrated geothermal reservoir management under such regulations as the Board may establish. In other regards relating to the water-geothermal interface, the Board's statutory authority appears adequate.

VI. OWNERSHIP

Hawaii has declared geothermal to be a mineral resource. Thus the state would own those geothermal resources underlying state lands (approx. 38% of the state) as well as those under private lands where the state retains a mineral reservation. Other geothermal resources would be the property of private mineral estate owners. No compelling reason has been advanced to alter this situation. In fact, any such midstream change would create a climate of uncertainty and lead to litigation, thereby tending to deter development.

The remaining uncertainty in the existing ownership regime relates to the possiblity of a legal challenge by Native Hawaiian groups. Such an action would probably claim that the state had breached its trust responsibilities (Section 5f, Admissions Act) by failing to assert ownership of a public resource. HO'ALA KANAWAI filed an amicus brief in Robinson v. Ariyoshi (CA9, No. 7432) arguing in this vein regarding water. A similar challenge regarding geothermal resources remains a possibility.

COMMITTEE ON WATER, LAND USE
DEVELOPMENT AND HAWAIIAN AFFAIRS

3/17/80
Chmn
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LM

RICHARD A. KAWAKAMI, Chairman

NOTICE OF PUBLIC HEARING

RTC
TF
JYY
MA
DM

DATE: WEDNESDAY, MARCH 19, 1980
TIME: 8:30 A. M.
PLACE: House Conference Room 328

A G E N D A

S.B. 1889 s.d. 2	A BILL FOR AN ACT RELATING TO GEOTHERMAL ENERGY	WL
S.B. 2208 s.d. 1	A BILL FOR AN ACT RELATING TO PUBLIC LANDS (Disposition by Negotiation)	LM
S.B. 2495 s.d. 1	A BILL FOR AN ACT RELATING TO PUBLIC LANDS (Lease for recreational residence use)	LM
S.B. 2550 s.d. 1	A BILL FOR AN ACT RELATING TO WATER USE	WL