SCOPING MEETING SUMMARY
Kaunakakai, Moloka'i, 12 March 1992, 2 PM

Mary S. Quinby-Hunt
1 June 1992

OVERVIEW

The meeting began with presentations by the facilitator, Mr. Spiegel, and Dr. Lewis, the program manager from DOE. The facilitator introduced those on the podium. He then described the general structure of the meeting and its purpose: to hear the issues and concerns of those present regarding the proposed Hawaiian Geothermal Project. He described his role as assuring the impartiality and fairness of the meeting. Dr. Lewis of DOE further defined the scope of the project, introduced members of the EIS team, and briefly described the EIS process.

The overwhelming concerns of the meeting were Native Hawaiian issues. The presenters [more than 70%, most of whom addressed no other issue] want the EIS to respect Native Hawaiian religion, race, rights, language, and culture, noting that they believe that geothermal development is a desecration of Pele [~60% of all presenters]. They expressed concern that their ancestors and burials should not be desecrated. The EIS should address Native Hawaiian concerns that the HGP would negatively impact Native Hawaiian fisheries, subsistence lifestyles, and religious practices.

Virtually all the speakers expressed frustration with government. Most (>70%) of the speakers voiced concern and frustration regarding lack of consideration for Native Hawaiians by government and lack of trust in government. One commenter requested that the EIS should consider the international implications of the U.S allowing their rainforests to be cleared, when the U.S. government asks other nations to preserve theirs. Nearly 30% of the commenters want the EIS to address the concern that people on Moloka'i will bear major environmental consequences of the HGP, but not gain from it. The commenters question whether it is right for Moloka'i to pay for benefits to Oahu, particularly using an unproven technology.

After questioning the reliability and feasibility of the marine cable, nearly 30% of the presenters were concerned about the impacts of the submarine cable. In specific, they suggested that the EIS investigate the impacts the cable would have on fisheries and marine life due to electromagnetic fields, dredging, and oil-release. The EIS should study the impacts of the HGP on the humpback whale and other marine species, particularly their birthing grounds, noting whales' hypersensitivity to emf and sound. One commenter suggested that the EIS examine the economics of the cable, including the need to build specialized ships to lay it, harbour(s), and the cable itself. One commenter was concerned about the future uses of the cable suggesting that the EIS should address the impacts that would result if the cable connecting Moloka'i to Oahu is used to transmit power from large coal

DISCLAIMER

or other types of power generation facilities constructed on Moloka'i.

Commenters questioned the reliability of geothermal development in a region that is both seismically and volcanically active. One suggested that the EIS examine the merits of projects that conserve energy.

With respect to land use, commenters asked that the EIS examine the propriety of using Native Hawaiian homelands and ceded lands for the HGP, questioning specifically the land exchange in Puna [Campbell Estate for Wao Kele o Puna]. The commenters want the EIS to address the issue of air, water and soil quality preservation.

More than 20% of the commenters asked that the EIS examine concerns about the environmental consequences of the HGP to the rainforest, including possible species extinction. In particular, the
EIS should address the impacts of roads associated with the HGP in the rainforest, including the resulting importation of exotic species (for example banana poko), which successfully compete against native species; and the effects of noise and fumes which negatively impact plants, birds, animals, and insects.

DRAFT SUMMARY (6/10/92), Kaunakakai, Moloka'i, 12 March 1992, 2 PM Scoping Meeting

MEETING SUMMARY

Speigel Presentation - Attachment A

DOE Project/Process Description - Attachment B

Process Discussions.

EIS Preparation. With respect to EIS preparation, one commenter strongly requested that the EIS should clearly state the information gaps and their significance.

Throughout the afternoon, Dr. Lewis made statements clarifying the EIS and scoping process. Dr. Lewis stated that it was DOE's mission to conduct the EIS fairly and to address human concerns. Dr. Lewis thanked those present for their comments and requested they review the public documents and send their comments to DOE.

Alternatives. Dr. Lewis declared that the EIS would be examining the potential for demand-side management among other alternatives. He also listed a number of alternatives to the cable that would be considered, including different power-delivery mechanisms and power types, different sizes, constructions, ac, dc, low voltage, and high voltage. He noted that, for economic considerations, substations would not be located in the sea. He agreed that a commenter's concern that any power generation facility (including a coal-fired plant) located on Moloka'i could be linked into the cable for transmission to Oahu.

Native Hawaiian Interactions. Dr. Lewis stated that although Native Hawaiians cannot be a cooperating agency because they are not recognized as a Native American "nation" by Congress, DOE wants to understand and address Native Hawaiian concerns. He indicated that DOE would like to hold information exchange meetings with Native Hawaiian groups on Moloka'i and ask for their aid in achieving these goals. Dr. Lewis added that DOE had already met with the Office of Hawaiian Homelands and the Office of Hawaiian Affairs. These offices suggested that it would be in the best interests of Native Hawaiians for DOE to meet directly with Native Hawaiian groups to hear their issues and concerns.

PRESENTERS Alphabetically, alphanumeric following name indicates number of presentation at Kaunakakai, Moloka'i.

Kaeo Adolpho	Mo12
Matthew Adolpho Jr.	Mo3
Lawrence Aki	Mo11
Bobby Alcain	Mo6
Lyn Bonk, Moloka'i CARES	Mo13
Leilani Camara	Mo10

Stanley Halama	Mo7
Halona Kaopuiki, Ka La Hui and others	Mo4
Joe Kennedy	Mo2
Wade Lee	Mo9
Glenn Lenwai, Ahupuaa o Kalua koi	Mo5
Penny Rollins Martin	Mo14
Pohaka Malamalama Palmer	Mo8
Sarah Sykes	Mo1

PRESENTATIONS

1. **PURPOSE OF PROJECT**

2. **PROPOSED ACTION**

2.1 Definition of Project

2.2 Resource Concerns

2.3 Geothermal Project Reliability

The incidence of blowouts and unpredictable seismic/volcanic activity to date in Puna suggests that geothermal development is not reasonable at this site.

2.3.1 *Mitigation Methods*

2.4 Cumulative Impacts of Prior and On-going Geothermal Development

The EIS should consider prior experiences with geothermal development in Hawai'i.

2.5 Cable/Transmission Lines

The EIS should address cable feasibility and reliability.

2.6 Future Uses

The EIS should address the impacts that would result if the cable connecting Moloka'i to Oahu is used to transmit power from large coal or other types of power generation facilities constructed on Moloka'i.

3. **ALTERNATIVES TO THE PROPOSED ACTION**

3.1 Conservation and Renewables

The EIS should examine the alternatives that rely on responsible use of energy (demand-side management).

3.2 Geothermal Alternatives

3.3 Alternatives to the Cable/Transmission Lines

3.4 Transportation

4. DESCRIPTION OF THE AFFECTED ENVIRONMENT

5. POTENTIAL ENVIRONMENTAL ISSUES

Commenters stated that the EIS should:

- clearly state the information gaps and their significance.
- address concerns about the environmental consequences of the cable.

5.1 Competing Uses

The EIS should examine the propriety of:

- using Native Hawaiian homelands and ceded lands for the HGP. What will the compensation be for the environmental (including social, historical, cultural) losses?

- the land exchange in Puna [Campbell Estate for Wao Kele o Puna] to determine whether it has benefitted Native Hawaiians.

5.2 Air Quality Concerns

The EIS should address the issue of air quality preservation.

5.3 Water and Soil Quality Issues

The EIS should address the issues of water and soil quality preservation.

5.4 Ecological Resources

5.4.1 *Impacts on Terrestrial and Land-based Aquatic Ecosystems*

The EIS should address the potential impacts of the HGP:

- on Native Hawaiian herbs, plants and birds (also Sections 5.4.2, 5.4.3, 5.7, and 5.9.4).
- on land-based Native Hawaiian fisheries (also Sections 5.4.4, 5.9.1, and 5.9.4).
- [impacts of roads associated with the HGP (primarily in reference to Section 5.4.2)]

5.4.2 *Rain Forest Issues.*

More than 20% of the commenters asked that the EIS examine concerns about the environmental consequences of the HGP to the rainforest. In particular, the EIS should address the impacts of roads associated with the HGP in the rainforest, including:

- the resulting importation of exotic species (for example, banana poko) on tires, in water or on equipment which successfully compete against native species;
- the effects of noise and fumes which disturb birds, animals, and insects.

The EIS should address the potential impacts of the HGP on Native Hawaiian herbs, plants and birds (also Sections 5.4.1, 5.4.3, 5.7, and 5.9.4).

5.4.3 *Threatened, endangered, or endemic species concerns*

The EIS should address the possible extinction of species due to the HGP (notably the miles of roads associated with it), particularly in the rainforest of Puna. DOE should consider that:

- due to the numerous lava flows crossing the region unique species of plants, animals, and insects exist evolving at different rates.

- 40% of known endemic species have become extinct due to human habitat destruction and introduced plants and animals. 55% of Hawai'i species and subspecies are officially listed as threatened or endangered.

The EIS should study the impacts of the HGP on the humpback whale (adults, juveniles, and newborn) and other marine species, particularly their birthing grounds, noting whales' hypersensitivity to emf and sound.

5.4.4 *Marine Concerns*

Nearly 30% of the presenters were concerned about the impacts of the submarine cable. Specifically, they suggested that the EIS should investigate the impacts:

- the HGP would have on fisheries (also Sections 5.4.1, 5.9.1 and 5.9.4), including the effects of dredging and release of oil from the cable.
- of emf and oil on marine life (also Section 5.9.1)

5.5 Geological Issues

5.6 Aesthetic Issues

5.6.1 *Noise*

5.6.2 *Visual Issues*

5.6.3 *Odor Issues*

5.7 Health and Safety Issues

The EIS should address the potential impacts of the HGP on Native Hawaiian medicinal herbs (also Sections 5.4.1, 5.4.2, 5.4.3, and 5.9.4)

5.7.1 *Geothermal Emissions and Effluents*

5.7.2 *Transmission Line Effects*

5.7.3 *Noise*

5.7.4 *Psychological Impacts*

5.7.5 *Civil Defense Issues*

5.8 Political Issues

Virtually all the speakers expressed frustration with government. Most (>70%) of the speakers voiced concern and frustration regarding lack of consideration for Native Hawaiians by government and lack of trust in government. Others suggested that government was not listening to their concerns.

One commenter requested that the EIS should consider the international implications of the U.S allowing its

rainforests to be cleared, when the U.S. asks that other nations not cut theirs.

5.9 Socioeconomic Issues

The EIS should address social and cultural concerns.

5.9.1 *Economic Issues*

The EIS should:

- investigate the impact that the HGP would have on fisheries (also Sections 5.4.1, 5.4.4, and 5.9.4).
- examine the economics of HGP, including the need to build new ships, harbour, and cable *etc*.

5.9.2 *Life Style*

The EIS should consider impacts of the HGP on Native Hawaiian lifestyles, particularly including those on Moloka'i, including subsistence living.

5.9.3 *Social Issues*

5.9.4 *Native Hawaiian Issues*

More than 70% of the speakers (many of them exclusively mentioned Native Hawaiian concerns) believed that the EIS should address Native Hawaiian cultural concerns. They want the EIS to respect Native Hawaiian religion, race, rights, language, and culture, noting that:

- Geothermal development is a desecration of Pele. [~60% of all presenters]. One commenter suggested that the EIS should address this problem as one affecting the right to religious freedom.
- Disturbance of the marine and terrestrial environments is a desecration.
- The EIS should respect the Native Hawaiian concern that their ancestors and burials should not be desecrated.
- Native Hawaiians are an endangered species and believe themselves part of the environment.

The EIS should address Native Hawaiian concerns that the HGP would negatively impact:

- Native Hawaiian fisheries (also Sections 5.4.1, 5.4.4, and 5.9.1),
- subsistence rights to hunting, fishing, and gathering rights (also Sections 5.1 and 5.9.2),
- Native Hawaiian herbs and plants, and even birds used for medicinal and ritual practices (also Sections 5.4.1, 5.4.2, 5.4.3, and 5.7),
- the physical and spiritual well-being of Native Hawaiians,
- the religions of Native Hawaiians on Moloka'i, and
- destroy, and desecrate places that are sacred to Native Hawaiians.
    - The commenter also suggested Mililani Trask on Hawai'i for information regarding cultural beliefs. Also the Department of Hawaiian Homes Land, the Hawaiian Homes Commission, and the Office of Hawaiian Affairs.

6. COST BENEFIT ANALYSIS

Nearly 30% of the commenters mentioned that the EIS should address the concern that people on Moloka'i will bear major environmental consequences of the HGP, but not gain from it. The commenters question whether it is right for Moloka'i to pay for benefits to Oahu, particularly using an unproven technology.

7. LEGAL ISSUES

ATTACHMENT A

FACILITATOR PRESENTATION

HAWAII SCOPING MEETINGS

March 7, 1992, Pahoa, Hawai'i
March 9, 1992, Wailuku, Maui
March 12, 1992, Kaunakakai, Moloka'i
March 14, 1992, Honolulu, Oahu
March 16, 1992, Waimea, Hawai'i

Summary of Presentation

Introduction: Mr. Spiegel first introduced himself and Ms. Letts, from West Hawai'i Mediation Services and the Center for Alternative Dispute Resolution, respectively, as professional facilitators. He explained that they were hired to run a fair and impartial scoping meeting. He then introduced Dr. Lewis [Hawai'i Geothermal Project (HGP) Environmental Impact Statement (EIS) Program Director from DOE Headquarters], Carol Borgstrom, Director of the Office of National Environmental Policy Act Oversight, DOE Headquarters], and William Dennison [Assistant General Counsel for the Environment, DOE Headquarters]. The facilitator then stated that his purpose was to remain neutral and keep the meeting on track.

Structure of Meeting: The attendees were advised as follows. The intent of the meeting was to identify issues and concerns that those present had concerning the HGP. The facilitators will do their best to assure that everyone gets to be heard. Only questions with regard to process will be answered. In order to assure this, those who wish to speak will give their presentation in the order that they have registered; individuals will have 5 minutes and organizations and elected officials will have 10 minutes. Speakers are to identify themselves and the group they represent. Those who wish to speak should register; speakers may speak at only one of the planned scoping meetings; if anyone needs more time to finish, he/she may reregister, and time-permitting, they will be given an additional 5/10 minutes, as appropriate. If a presentation is to be given in Hawaiian, an interpreter is available. If necessary, time will be extended as possible. In each meeting there will be a 10 minute break about half way through the meeting. Any written materials can be handed in at the meetings or sent to Dr. Lewis at DOE before 15 April 1992 to assure consideration. Each meeting will be recorded by a court reporter, and tape and video recorders to assure an accurate record of presentations. If requested, the video recorder can be turned off. Transcripts of the meetings will be available in 21 reading rooms in Hawai'i and on the mainland. Attendees were invited to have their names placed on the EIS mailing list (sign up at registration desk) to receive any future EIS-related notices.

Ground Rules: The facilitator requests that those present be courteous to each other, that they do not interrupt

speakers, and that they stay within the designated time limits. Private conversations and interviews should be conducted outside the meeting room.

NEPA Background: The scoping meetings were shown to occur between the Notice of Intent (NOI) and the production of the EIS Implementation Plan (IP). Following preparation of the IP, a Draft EIS (DEIS) will be prepared. After public review of the DEIS, a FEIS will be available for public review. A total of ten scoping meetings would be held with two each day in Pahoa, Wailuku, Kaunakakai, Honolulu, and Waimea (afternoon, 2-5:30 PM and evening 7-10:30 PM).

Turns meeting over to Dr. Lewis for further comment.

ATTACHMENT B

DOE PROJECT/PROCESS DESCRIPTION

HAWAII SCOPING MEETINGS

March 7, 1992, Pahoa, Hawai'i
March 9, 1992, Wailuku, Maui
March 12, 1992, Kaunakakai, Moloka'i
March 14, 1992, Honolulu, Oahu
March 16, 1992, Waimea, Hawai'i

Summary of Presentation

Introduction: After introducing himself as the Program Director for the Hawaii Geothermal Project Environmental Impact Statement (HGP EIS), Dr. Lewis began his presentation by stating that DOE's mission is "to prepare an Environmental Impact Statement (EIS) for phases 3 and 4 of the Hawaii Geothermal Project (HGP) as defined by the State of Hawaii in its proposal to Congress in 1989," noting that the Proposed Action had been defined by Congress and the US District Court in Hawaii, both in 1991. He then explained that phases 1 [exploration, HGP(A)] and 2 [test of the feasibility of laying and retrieving the submarine cable] were complete. He noted that they were funded by DOE, the State of Hawai'i, and others and had undergone NEPA review. He stated that although phases 1 and 2 had had environmental review, they form an important data base and would be reexamined from the perspective of cumulative impacts. He also noted that the EIS would examine a range of reasonably foreseeable alternatives, both within and outside geothermal.

He then acknowledged Carol Borgstrom, Director of the Office of National Environmental Policy Act Oversight, DOE Headquarters], noting that she was assisted by Dr. Yvonne Weber, and also William Dennison [Assistant General Counsel for the Environment, DOE Headquarters], recognizing his assistance by Janine Sweeney. He introduced the representatives from DOE-OR (Andrea Campbell); ORNL, assisting in the preparation of the EIS (Dr. Amy Wolfe, Dr. Virginia Tolbert), and LBL (Mary Hunt). The latter were also to assist in recording highlights of scoping meetings.

EIS Process: Dr. Lewis described the EIS process. Initially an Advance Notice of Intent was published with a request for public comment; 55 letters and hundreds of comments were received in response. Next were information exchange meetings and meetings with cooperating agencies, including several federal, State, and County departments. At these meetings, concerns and issues were raised. He noted that several agencies would probably elect cooperating agency status, including the Corps of Engineers, U.S. Fish and Wildlife Service, National Marine Fisheries Service, the National Park Service, and the U.S Geological Survey. These meetings were followed by a Notice of Intent announcing scoping meetings. The results of the scoping meetings will be

available for review in the public reading rooms and will be used for preparation of an Implementation Plan, also available for review. Next, a draft EIS is prepared and the public is asked to review this document and comment on it. Finally, a final EIS is published.

Dr. Lewis then turned the meeting over to the Facilitator for process questions.

SCOPING MEETING SUMMARY
Kaunakakai, Moloka'i, 12 March 1992, 7 PM SESSION

Mary S. Quinby-Hunt
10 June 1992

OVERVIEW

The meeting began with presentations by the facilitator, Ms. Letts, and Dr. Lewis, the program manager from DOE. The facilitator introduced those on the podium. He then described the general structure of the meeting and its purpose: to hear the issues and concerns of those present regarding the proposed Hawaiian Geothermal Project. He described his role as assuring the impartiality and fairness of the meeting. Dr. Lewis further defined the scope of the project, introduced members of the EIS team, and briefly described the EIS process.

More than 60% of the speakers declared that the EIS should respect Native Hawaiian culture, rights, and religious beliefs and practices. More than 30% of the speakers spoke in Hawaiian to emphasize the need for respect of Native Hawaiian culture. They noted that they believe that geothermal development will result in a desecration of Pele and the 'aina (land).

One issue has many implications: that is the impacts that the cable (installation, operation, and maintenance, *etc*.) will have on the reefs and fishponds that line the southern coast of Moloka'i. The fishponds have archeological/cultural/religious significance, and also may be important to further economic development on Moloka'i because they are consistent with the infrastructure and attitudes of the people on Moloka'i and are compatible with the culture. The reefs and fishponds are used commercially and for subsistence living. Other commenters asked about other impacts of the cable including its effect on humpback whales, their breeding and calving.

More than 60% of those commenting want the EIS to identify what long-term benefits derive from geothermal development, at what cost to whom, weighing the benefits of the HGP against the economic and environmental costs. The presenters questioned whether it is right that those on Moloka'i pay the costs (apparently without obtaining any benefits), so that Oahu residents can receive more power, rather than practice conservation.

Many commenters [>60%] stated concerns about ecological consequences of the HGP, some expressing the idea that there is a responsibility to protect the environment. Nearly 40% of those presenting asked that the EIS address the potential impacts that the extensive clearing required for HGP might have on the ecosystem and unique species in Wao Kele o Puna rainforest (the last tropical lowland rainforest in the U.S). Several presenters expressed concern that geothermal emissions and effluents are toxic to biota, particularly those that are threatened, endangered and endemic.

More than 30% of the commenters presented economic issues. They believe that the EIS should examine the economic feasibility of the HGP and when estimating the number of wells, DOE should remember that numerous wells must be drilled to have a few for production. Twenty-five percent of the presenters identified concerns about the reasonably-foreseeable future uses of, or developments due to, the geothermal power such as: urbanization, growth, and industrialization, and construction of other energy-production facilities made economically feasible by the laying of the cable.

Some commenters questioned whether the HGP would achieve the State's stated purpose of lowering costs of electricity and saving fossil fuels. They wanted to assure that a reasonable estimate of wells and associated infrastructure were used for assessing impacts. They questioned whether it is reasonable to build the facility in an erupting volcanic zone and what impacts the HGP would have on the volcano. Presenters questioned the propriety of constructing HGP in a residential community or on Hawaiian homelands, and asked whether there was sufficient water to meet the needs of the development and the community.

Several commenters [~25%] asked that the EIS identify viable alternatives to the proposed action, such as wind, solar, biomass, conservation, and distributed, small-scale systems.

Some presenters were concerned about impacts of the HGP on air and water quality, and health. One commenter reported that the development in Puna is noxious and noisy; that the vegetation around it has been killed and health effects due to this development have been reported. Another asked about the possibility that aquifers could be contaminated due to geothermal drilling. Another reported that under certain atmospheric conditions, emissions from the Puna district degrade air quality in Moloka'i.

MEETING SUMMARY

Letts Presentation - Attachment A

DOE Project/Process Description - Attachment B

Process Discussions

Public Awareness. One commenter was not aware that the HGP might touch Moloka'i and suggested that a better public information distribution/public awareness system would be beneficial.

Alternatives. With respect to the request that the EIS examine alternatives to the proposed action and identify the preferred alternative, Dr. Lewis stated that examining the alternatives is part of the environmental review process. The EIS will examine alternatives within geothermal, outside geothermal, demand-side management, and integrated resource planning. The EIS will also examine alternatives to the cable part of the project. The EIS also will investigate socioeconomic issues. He urged those present to consider scenarios for the energy future for Moloka'i so that this is appropriately addressed in the EIS.

Cable Alternatives and Route. The EIS will look at all reasonable alternatives associated with the cable: alternatives to the cable and alternative applications of the cable, including its potential use for providing energy to islands it passes or touches and use of the cable as a conduit for energy generated by other energy sources. The EIS will examine the impacts of various alternative routes for the cable including routes on land and submarine. The EIS should also examine the impacts of providing additional power to an island in terms of its grid.

Dr. Lewis clarified that for the cable to go from Hawaii to Maui it must cross the Alenuihaha Channel. From Maui, the most economical route would be on land or in shallow water along the coast. There appears to be no way to avoid the humpback whale breeding and calving grounds economically, if one crosses the interisland channels. Technically, at this time, it is questionable whether the cable can be placed deeper than the 6000' depth of the Alenuihaha Channel.

PRESENTERS Alphabetically, alphanumeric following name indicates number of presentation at Kaunakakai, Moloka'i.

Louella 'Opu'ielani Albino, Aloha Association	Mo22
Kathleen Anderson	Mo28
Dan Bennett	Mo29
Kathy Bennett	Mo24
Steve Chaikin	Mo21
Jeff Davis	Mo19
Tom DeCourcy	Mo25

Lena Dumag	Mo17
Sahoni English	Mo20
Moses Kim Jr.	Mo15
Susan Lamb	Mo26
Mele K. McPherson	Mo18
B.J. Moniz	Mo23
Wailana Purdy-Ka'ai	Mo27
Gilberta Ku'ulei Reyes	Mo16
Walter Ritte, Jr.	Mo30

PRESENTATIONS

1. **PURPOSE OF PROJECT**

A commenter questioned whether the HGP will meet the State's stated goals for the project: to lower costs of electricity and to save fossil fuels.

2. **PROPOSED ACTION**

2.1 Definition of Project

The EIS should state how many wells will be required for the HGP (also Sections 5.4.1, 5.4.2, and 5.9.1). When estimating the number of wells necessary to produce 500 MW, DOE should remember that in order to have a few producing wells, numerous wells must be drilled.

2.2 Resource Concerns

The EIS should present the probable lifetime of the resource on the East Kilauea Rift Zone.

2.3 Geothermal Project Reliability

The EIS should reconsider the advisability of drilling on Kilauea, an actively erupting volcano.

2.3.1 *Mitigation Methods*

2.4 Cumulative Impacts of Prior and On-going Geothermal Development

The EIS should consider the record of geothermal development on the Big Island to date, noting that there have been incidents due to human error, and that the developers have had two wells blow out. There were reports

of numerous health effects, and the operation was reported to be noxious and noisy. One commenter reported that geothermal emissions from the relatively small-scale activities in Puna forced her to leave the region because of respiratory problems (also Sections 5.7.1 and 5.7.3).

2.5 Cable/Transmission Lines

2.6 Future Uses

Twenty-five percent of the commenters identified concerns over the reasonably-foreseeable future uses of, or developments due to, the geothermal power. The EIS should identify and assess the impacts of these uses/developments including:

- urbanization, growth, and industrialization that will occur as a result of the development of the HGP or any of its parts. It should examine negative impacts on the infrastructure, overpopulation, crime, or social upheaval.

- construction of other energy-production facilities made economically feasible by the laying of the cable. This result in construction of power generation facilities, such as the recently proposed ~700 MW coal-fired facility on Moloka'i. If the cable were already in place to transmit power to Oahu, then the problems of cost-effectiveness that weighed against the construction of the plant would no longer be valid.

3. ALTERNATIVES TO THE PROPOSED ACTION

More than 30% of the presenters asked about alternatives to the proposed action. The EIS should examine alternatives to the project and make clear the preferred alternative, even if it is not the proposed action. Some commenters requested that conservation or renewable options be considered; others asked whether coal or even Moloka'i-based geothermal power generation would be considered.

3.1 Conservation and Renewables

Nearly 20% of those commenting suggested examining conservation, renewables, and off-grid alternatives. The EIS should examine the possibility that goals of the HGP could be met by solar, wind, biomass, or energy efficiency. When the EIS examines alternatives (including biomass, which was not developed in a well-though out manner on Moloka'i, or coal, which is not wanted on Moloka'i by the people on Moloka'i), it should think

in terms of many small solutions rather than one big one.

3.2 Geothermal Alternatives

Will the EIS examine the potential for geothermal development on Moloka'i? The commenter claimed that Moloka'i has a hot spot.

3.3 Alternatives to the Cable/Transmission Lines

3.4 Transportation

The EIS should examine the costs associated with supplying an unneeded mass transit system on Oahu to save energy.

4. DESCRIPTION OF THE AFFECTED ENVIRONMENT

5. POTENTIAL ENVIRONMENTAL ISSUES

Commenters expressed a general requirement to protect the land and its biota as a responsibility of those living on it.

The EIS should examine the impacts of the submarine cable (Sections 5.4.3, 5.4.4, 5.9, 5.9.4, and 6).

5.1 Competing Uses

The EIS should address the propriety of:

- developing geothermal energy near a residential community (also Sections 5.7, 5.9, and 6).
- the transmission lines passing through homestead lands (also Section 5.9.4).

The EIS should determine if there is sufficient water with in the Kilauea system to support the HGP and provide for other uses.

5.2 Air Quality Concerns

The EIS should consider that under certain atmospheric conditions, emissions from the Puna region degrade the air quality in Maui and Moloka'i.

5.3 Water Quality Issues

The EIS should address the concern that geothermal drilling [or leaking wells] could contaminate aquifers.

5.4 Ecological Resources

5.4.1 *Impacts on Terrestrial and Land-based Aquatic Ecosystems*

The EIS should address the concern that plants and animals cannot live with the emissions and effluents associated with the HGP. This concern is based on experience with geothermal development in Puna, which has had harmful effects on vegetation surrounding the facilities (also Section 2.4).

5.4.2 *Rain Forest Issues.*

Nearly 40% of the commenters asked that the EIS address the potential impacts that the extensive clearing required for HGP might have on Wao Kele o Puna rainforest (the last tropical lowland rainforest in the U.S), including

- the ecosystem and its biota
- loss of unique species (also Section 5.4.3) that are mutually dependent.

The EIS should state how many acres will be required for wells and associated infrastructure (also Sections 2, 5.4.1, and 5.9.1).

5.4.3 *Threatened, endangered, or endemic species concerns*

The EIS should investigate potential impacts to threatened, endangered and endemic species:

- in the low-land rain forest of Puna,

- by the cable in humpback whale breeding/calving zones (also Section 5.4.4).

5.4.4 *Marine Concerns*

The EIS should consider the impacts of the cable (installation, operation, maintenance *etc.*) on the reefs and fish ponds (also Section 5.9.1, 5.9.2, and 5.9.4).

5.5 Geological Issues

The EIS should consider that geothermal drilling on Kilauea could disrupt natural volcanic processes.

5.6 Aesthetic Issues

5.6.1 *Noise*

5.6.2 *Visual Issues*

5.6.3 *Odor Issues*

5.7 Health and Safety Issues

5.7.1 *Geothermal Emissions and Effluents*

The EIS should consider the impacts of H_2S, and the following reported health effects: vomiting, convulsions, loss of voice, runny eyes, sore throat, breathing difficulties, and miscarriages. DOE should remember that geothermal emissions from prior geothermal activities in Puna were reported to be noxious, toxic, and the source of respiratory problems (also Section 2.4).

5.7.2 *Transmission Line Effects*

5.7.3 *Noise*

The EIS should assess the impacts of noise from the HGP (also Section 2.4).

5.7.4 *Psychological Impacts*

The EIS should address the impacts of stress induced by the HGP (also Section 5.9.2).

5.7.5 *Safety, Civil Defense Issues*

5.8 Political Issues

5.9 Socioeconomic Issues

5.9.1 *Economic Issues*

More than 30% of the commenters presented economic issues concerning the cost and feasibility of the HGP or the impacts of the HGP on existing economic systems. The EIS should examine the economic feasibility of the HGP and should include the costs of:

- the cable portion, and
- drilling and wells (also Sections 2, and 5.4.2).

The EIS should examine the impacts of the cable (including installation, operation, maintenance, *etc.*):

- on fishing (also Section 5.4.4) and
- on the fishponds that line the south coast of Moloka'i. The fishponds may be important to further economic development on Moloka'i as they are consistent with the infrastructure and attitudes of the people on Moloka'i (also Sections 5.4.4 and 5.10).

5.9.2 *Life Style*

About 25% of those commenting indicated that the EIS should address the concern that the proposed action would negatively impact lifestyles of the general population and of Native Hawaiians (including subsistence living). It should include impacts to economics (Section 5.9.1), on energy consumption, and of stress (Section 5.7.4).

5.9.3 *Social Issues*

5.9.4 *Native Hawaiian Issues*

More than 60% of the speakers declared that the EIS should respect Native Hawaiian culture, rights, and religious beliefs and practices. More than 30% of the speakers spoke in Hawaiian to emphasize the need for

respect for Native Hawaiian culture.

Among the concerns that the EIS should consider:

- Geothermal development will result in a desecration of Pele and the 'aina (land).
- Native Hawaiians are an endangered species who must be allowed to survive.

The EIS should address the impacts:

- to Native Hawaiians if the transmission lines pass through homestead lands (also Section 5.1).

- of the cable on the fishponds that line the south coast of Moloka'i, which have archeological/cultural/religious significance. Fishponds are consistent with the infrastructure and attitudes of the people on Moloka'i and therefore such enterprises are compatible with their culture.

6. COST BENEFIT ANALYSIS

More than 60% of the commenters want the EIS to analyze who benefits from geothermal development in the long-term and at what cost to whom. The EIS should weigh the benefits of the HGP against the costs to the environment including destruction of the last lowland tropical rain forest in the US. The commenters question whether it is right that those on Moloka'i pay the costs (apparently without obtaining any benefit), so that Oahu residents can receive more energy rather than practice conservation.

7. LEGAL ISSUES

ATTACHMENT A

FACILITATOR PRESENTATION

HAWAII SCOPING MEETINGS

March 7, 1992, Pahoa, Hawai'i
March 9, 1992, Wailuku, Maui
March 12, 1992, Kaunakakai, Moloka'i
March 14, 1992, Honolulu, Oahu
March 16, 1992, Waimea, Hawai'i

Summary of Presentation

Introduction: Ms. Letts first introduced herself and Mr. Spiegel, from the Center for Alternative Dispute Resolution and West Hawai'i Mediation Services respectively, as professional facilitators. She explained that they were hired to run a fair and impartial scoping meeting. She then introduced Dr. Lewis [Hawai'i Geothermal Project (HGP) Environmental Impact Statement (EIS) Program Director from DOE Headquarters], Carol Borgstrom, Director of the Office of National Environmental Policy Act Oversight, DOE Headquarters], and William Dennison [Assistant General Counsel for the Environment, DOE Headquarters]. The facilitator then stated that her purpose was to remain neutral and keep the meeting on track.

Structure of Meeting: The attendees were advised as follows. The intent of the meeting was to identify issues and concerns that those present had concerning the HGP. The facilitators will do their best to assure that everyone has a fair and equal opportunity to be heard. In order to assure this, those who wish to speak will give their presentation in the order that they have registered; individuals will have 5 minutes and organizations and elected officials will have 10 minutes. Only questions with regard to process would be answered. Speakers are to identify themselves and the group they represent. Those who wish to speak should register; speakers may speak at only one of the planned scoping meetings; if anyone needs more time to finish, he/she may reregister, and time-permitting, will be given an additional 5/10 minutes, as appropriate. If a presentation is to be given in Hawaiian, an interpreter is available. If necessary, time for the meeting will be extended as possible. In each meeting there will be a 10 minute break about half way through the meeting. Any written materials can be handed in at the meetings or sent to Dr. Lewis at DOE before 15 April 1992 to assure consideration. Each meeting will be recorded by a court reporter, and tape and video recorders to assure an accurate record of presentations. If requested, the video recorder can be turned off. Transcripts of the meetings will be available in 21 reading rooms in Hawai'i and on the mainland. Attendees were invited to have their names placed on the EIS mailing list (sign up at registration desk) to receive any EIS-related future notices.

Ground Rules: The facilitator requests that those present be courteous to each other, that they do not interrupt speakers, and that they stay within the designated time limits. Private conversations and interviews should be conducted outside the meeting room. Dr. Lewis is available for interviews prior to each meeting and at the

breaks.

NEPA Background. The scoping meetings would occur between the Notice of Intent (NOI) and the production of the EIS Implementation Plan (IP). Following preparation of the IP, a Draft EIS (DEIS) will be prepared. After public review of the DEIS, a FEIS will be available for public review. A total of ten scoping meetings would be held with two each day in Pahoa, Wailuku, Kaunakakai, Honolulu, and Waimea (afternoon, 2-5:30 PM and evening 7-10:30 PM).

Turns meeting over to Dr. Lewis for further comment.

ATTACHMENT B

DOE PROJECT/PROCESS DESCRIPTION

HAWAII SCOPING MEETINGS

March 7, 1992, Pahoa, Hawai'i
March 9, 1992, Wailuku, Maui
March 12, 1992, Kaunakakai, Moloka'i
March 14, 1992, Honolulu, Oahu
March 16, 1992, Waimea, Hawai'i

Summary of Presentation

Introduction: After introducing himself as the Program Director for the Hawaii Geothermal Project Environmental Impact Statement (HGP EIS), Dr. Lewis began his presentation by stating that DOE's mission is "to prepare an Environmental Impact Statement (EIS) for phases 3 and 4 of the Hawaii Geothermal Project (HGP) as defined by the State of Hawaii in its proposal to Congress in 1989," noting that the Proposed Action had been defined by Congress (3/91) and the US District Court in Hawaii (6/91). He then explained that phases 1 [exploration, HGP(A)] and 2 [test of the feasibility of laying and retrieving the submarine cable] were complete. He noted that they were funded by DOE, the State of Hawai'i, and others and had undergone NEPA review. He stated that although phases 1 and 2 had had environmental review, they form an important data base and would be reexamined from the perspective of cumulative impacts. He also noted that the EIS would examine a range of reasonably foreseeable alternatives, both within and outside geothermal.

He then acknowledged Carol Borgstrom, Director of the Office of National Environmental Policy Act Oversight, DOE Headquarters], noting that she was assisted by Dr. Yvonne Weber, and also William Dennison [Assistant General Counsel for the Environment, DOE Headquarters], recognizing his assistance by Janine Sweeney. He introduced the representatives from DOE-OR (Andrea Campbell); ORNL, assisting in the preparation of the EIS (Dr. Amy Wolfe, Dr. Virginia Tolbert), and LBL, alternatives and cable (Mary Hunt). The latter were also to assist in recording highlights of scoping meetings.

EIS Process: Dr. Lewis described the EIS process. Initially an Advance Notice of Intent was published with a request for public comment, which was followed by information exchange meetings and meetings with cooperating agencies. These meetings were followed by a Notice of Intent announcing scoping meetings. The results of the scoping meetings will be available for review in the public reading rooms and will be used for preparation of an Implementation Plan, also available for review. Next, a draft EIS is prepared and the public is asked to review this document and comment on it. Finally, a final EIS is published.

Dr. Lewis then turned the meeting over to the Facilitator for process questions.