A97-722 - MAUI ELECTRIC CO., LTD. (3 of )

A97-722 - Maui Electric Co., Ltd.(Waena)

(SEE FOLDER 4 of )

LAND USE COMMISSION

Minutes of Meeting

Conference Room 405
State Office Tower, Leiopapa A Kamehameha
235 South Beretania Street
Honolulu, Hawaii

June 18, 1998

Approved 7/16/98

COMMISSIONERS PRESENT: Rupert K. Chun
Merle A. K. Kelai
JoAnn Mattson
M. Casey Jarman (Portion of Proceeding)
Peter Yukimura
Isaac Fiesta, Jr.
Lawrence N.C. Ing

COMMISSIONERS ABSENT: Herbert Kaopua, Sr.
P. Roy Catalani

STAFF PRESENT: Esther Ueda, Executive Officer
Russell A. Suzuki, Esq., Deputy Attorney General
Jon S. Itomura, Esq., Deputy Attorney General
Bert Saruwatari, Staff Planner
Leo Asuncion, Jr., Staff Planner
Darlene Kinoshita, Chief Clerk

Gloria Tavares, Court Reporter

Presiding Officer Chun called the meeting to order.

Presiding Officer Chun welcomed Mr. Pravin Desai to the Land Use Commission.

Commissioner Jarman was absent from the proceeding at this time.

ACTION

A93-686 - KUKUI'ULA DEVELOPMENT CO. (Kauai)

Presiding Officer Chun announced that the Commission would take action to consider a request to amend the Findings of Fact, Conclusions of Law, and Decision and Order dated May 18, 1995, which reclassified approximately 537.313 acres of land from the Agricultural District into the Urban District and incrementally redistricted approximately 284.829 acres of land at Lawai, Koloa, Kauai for a planned community.

The motion requests that approximately 77 acres of land currently in Increment II be transferred to and included in Increment I to reflect proposed changes from Petitioner's Town Center concept to its Kukui'ula Bay Village concept, which includes the development of a resort component and deletes the development of a small boat marina. The motion also requests the modification and deletion of certain conditions of approval, and that a 10-acre portion of Increment I be released and deleted from the application of the conditions of approval.

Appearances

James T. Funaki, Esq., Attorney for Petitioner

William Campbell, for Petitioner

Ann Ogata-Deal, Esq., Deputy Attorney General, Office of Planning

Richard Egged, Jr., Director, Office of Planning

Jonathan Chun, Esq., Deputy County Attorney, County of Kauai

Arguments were heard from Mr. Funaki, Mr. Chun, Ms. Ogata-Deal, and Mr. Egged.

It was determined by Presiding Officer Chun that all of the Commissioners present were eligible to participate in the action on the petition.

Commissioner Yukimura moved that the Commission accept Docket No. A93-686 - Kukui'ula Development Co., Inc.'s Proposed Supplemental Modified Findings of Facts, Conclusions of Law, and Decision and Order. The motion was seconded by Commissioner Kelai.

Commissioner Chun moved to amend the proposed decision and order to correct the tax map key numbers on the caption, conclusions of law section, and first sentence of finding number 61. The motion was seconded by Commissioner Mattson and polled as follows:

Ayes: Commissioner Yukimura, Fiesta, Ing, Kelai, Mattson, and Chun

Commissioner Jarman joined the proceeding at this time.

A97-722 - MAUI ELECTRIC CO., LTD.

Presiding Officer Ing announced that the Commission would take action to consider reclassifying approximately 65.7 acres of land

currently in the Agricultural District into the Urban District at Wailuku, Maui for a 232-MW Electrical Generating Station.

Appearances

B. Martin Luna, Esq., Attorney for Petitioner

Allen Wolff, Esq., Attorney for Petitioner

William Bonnet, for Petitioner

Brian Moto, Esq., Deputy Corporation Counsel, County of Maui

Lisa Nuyen, Director, Planning Dept., County of Maui

Ann Ogata-Deal, Esq., Deputy Attorney General, Office of Planning

Richard Egged, Jr., Director, Office of Planning

Mark Sheehan, for Intervenor, Maui Tomorrow

Arguments were heard from Mr. Luna, Ms. Ogata-Deal, Mr. Moto, and Mr. Sheehan.

After hearing arguments, comments were made by the Commissioners.

It was determined by Presiding Officer Ing that all of the Commissioners present were eligible to participate in the action on the petition.

Commissioner Mattson moved on Docket No. A97-722 - Maui Electric Co., Ltd. that the Commission accept her Proposed Decision and Order as amended and subject to seventeen (17) conditions. The motion was seconded by Commissioner Yukimura and polled as follows:

Ayes: Commissioner Mattson, Chun, Fiesta, Kelai, Yukimura, and Ing.

Nay: Commissioner Jarman

A94-705 - COUNTY OF HAWAII, PLANNING DEPARTMENT

Presiding Officer Jarman announced that the Commission would take action to consider reclassifying approximately 955.78 acres of land currently in the Agricultural District into the Urban District at Keahuolu through Keauhou, North Kona, Hawaii to allow uses for the area consistent with adopted State and County policies.

Appearances

Frederick Giannini, Esq., Deputy Corporation Counsel, County of Hawaii

Virginia Goldstein, Director, Planning Department, County of Hawaii

Ann Ogata-Deal, Esq., Deputy Attorney General, Office of Planning

Judith Graham, for Intervenor, E Mau Na Ala Hele

Steven Lim, Esq., Attorney for Intervenor, Kamehameha Investment Co.

Benjamin Kudo, Esq., Attorney for Liliuokalani Trust

Eric Maehara, Esq., Attorney for Hawaiian Development Co.

The Commission noted for the record that it had received letters dated May 26, 1998, June 12, 1998, and June 15, 1998 from Mr. Lim.

At this time, Mr. Lim withdrew without prejudice Pualani's archaeological survey that was attached to his letter.

Arguments were heard from Mr. Giannini, Ms. Ogata-Deal, Ms. Graham, Mr. Kudo, Mr. Lim, and Mr. Maehara.

After hearing arguments, comments were made by the Commissioners.

It was determined by Presiding Officer Jarman that all of the Commissioner present were eligible to participate in the action on the docket.

Commissioner Fiesta moved to approve his proposed Findings Of Fact, Conclusions of Law, and Decision and Order on Docket No. A94-705 - County of Hawaii, Planning Dept. as amended and subject to nineteen (19) conditions. The motion was seconded by Commissioner Kelai and polled as follows:

Ayes: Commissioner Fiesta, Chun, Ing, Kelai, Mattson, and Yukimura

Nay: Commissioner Jarman

MISCELLANEOUS

1. ADOPTION OF MINUTES

Commissioner Kelai moved to approve the minutes for the following meeting date: May 28, 1998. The motion was seconded by Commissioner Fiesta and unanimously approved by voice votes.

The meeting was adjourned at 12:05 p.m.

LAND USE COMMISSION

NOTIFICATION OF LAND USE COMMISSION MEETING

DATE, TIME AND PLACE

**June 18, 1998 - 9:30 a.m.**

Conference Room 405
Leiopapa A Kamehameha
235 So. Beretania Street
Honolulu, Hawaii

A G E N D A

'98 JUN 10 P1:41
LIEUTENANT GOVERNOR'S OFFICE

I. ACTION

1. A93-696 - KUKUI'ULA DEVELOPMENT CO., INC. (Kauai)

To consider a request to amend the Findings of Fact, Conclusions of Law, and Decision and Order dated May 18, 1995, which reclassified approximately 537.313 acres of land from the Agricultural District into the Urban District and incrementally redistricted approximately 284.829 acres of land at Lawai, Koloa, Kauai for a planned community.

The motion requests that approximately 77 acres of land currently in Increment II be transferred to and included in Increment I to reflect proposed changes from Petitioner's Town Center concept to its Kukui'ula Bay Village concept, which includes the development of a resort component and deletes the development of a small boat marina. The motion also requests the modification and deletion of certain conditions of approval, and that a 10-acre portion of Increment I be released and deleted from the application of the conditions of approval.

2. A97-722 - MAUI ELECTRIC CO., LTD. (Maui)

To consider reclassifying approximately 65.7 acres of land currently in the Agricultural District into the Urban District at Wailuku, Maui for a 232-MW Electrical Generating Station.

3. A94-705 - COUNTY OF HAWAII, PLANNING DEPARTMENT

To consider reclassifying approximately 955.78 acres of land currently in the Agricultural District into the Urban District at Keahuolu through Keauhou, North Kona, Hawaii to allow uses for the area consistent with adopted State and County policies.

II. MISCELLANEOUS

1. Adoption of Minutes

2. Adoption of Decisions and Orders

3. Status Report on Litigation Matters

4. Status of Pending Matters

(Executive Sessions may be called in order for the Commission to consult with their attorney pursuant to Section 92-5, HRS.)

BENJAMIN J. CAYETANO
GOVERNOR

ESTHER UEDA
EXECUTIVE OFFICER

**STATE OF HAWAII**
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM
**LAND USE COMMISSION**
P.O. Box 2359
Honolulu, HI 96804-2359
Telephone: 808-587-3822
Fax: 808-587-3827

June 9, 1998

Mr. Mark Sheehan, President
Maui Tomorrow
P.O. Box 429
Makawao, HI 96768

Dear Mr. Sheehan:

Enclosed is a Land Use Commission meeting agenda.

Please note that petition (s)

A97-722 - Maui Electric Co., Ltd.

will be acted on or heard at that time. You or your representative should be present at this meeting. If you cannot attend this meeting, please contact our office as soon as possible.

Should you have any questions on this matter, please contact this office at 587-3822.

Very truly yours,

ESTHER UEDA
Executive Officer

EU:dyk

Enclosure

Is your RETURN ADDRESS completed on the reverse side?

**SENDER:** A97-722 - Maui Electric Co., Ltd.

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "*Return Receipt Requested*" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Mr. Mark Sheehan
Maui Tomorrow
P.O. Box 429
Makawao, HI 96768

4a. Article Number: P 612 304 699

4b. Service Type
☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery: 4/11/95

5. Received By: *(Print Name)* CHERYL Fernandez

6. Signature: *(Addressee or Agent)* X

8. Addressee's Address *(Only if requested and fee is paid)*

PS Form **3811**, December 1994 102595-97-B-0179 Domestic Return Receipt

Thank you for using Return Receipt Service.

P 612 304 699

US Postal Service
**Receipt for Certified Mail**
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

| | |
|---|---|
| Sent to: Mr. Mark Sheehan | |
| Street & Number: P.O.Box 429 | |
| Post Office, State, & ZIP Code: Makawao, HI 96768 | |
| Postage | $ .32 |
| Certified Fee | 1.35 |
| Special Delivery Fee | |
| Restricted Delivery Fee | |
| Return Receipt Showing to Whom & Date Delivered | 1.10 |
| Return Receipt Showing to Whom, Date, & Addressee's Address | |
| **TOTAL** Postage & Fees | $ 2.77 |
| Postmark or Date | |

MAUI DOWNTOWN HI APR 9 1995 USPS

PS Form **3800**, April 1995

A97-722 - Maui Electric Co., Ltd.

BENJAMIN J. CAYETANO
GOVERNOR

ESTHER UEDA
EXECUTIVE OFFICER

**STATE OF HAWAII**
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM
**LAND USE COMMISSION**
P.O. Box 2359
Honolulu, HI 96804-2359
Telephone: 808-587-3822
Fax: 808-587-3827

June 9, 1998

Jeffrey Schmidt, Esq.
Corporation Counsel
Office of the Corporation Counsel
County of Maui
200 South High Street
Wailuku, HI 96793

Dear Mr. Schmidt:

Enclosed is a Land Use Commission meeting agenda.

Please note that petition (s)

A97-722 - Maui Electric Co., Ltd.

will be acted on or heard at that time. You or your representative should be present at this meeting. If you cannot attend this meeting, please contact our office as soon as possible.

Should you have any questions on this matter, please contact this office at 587-3822.

Very truly yours,

ESTHER UEDA
Executive Officer

EU:dyk

Enclosure

Is your RETURN ADDRESS completed on the reverse side?

**SENDER:** A97-722 - Maui Electric Co., Ltd.

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write *"Return Receipt Requested"* on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Jeffrey Schmidt, Esq.
Corporation Counsel
County of Maui
200 South High Street
Wailuku, HI 96793

4a. Article Number
P 612 304 702

4b. Service Type
☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery
6-10-98

5. Received By: *(Print Name)*

8. Addressee's Address *(Only if requested and fee is paid)*

6. Signature: *(Addressee or Agent)*
X R Tanga

PS Form **3811**, December 1994 102595-97-B-0179 Domestic Return Receipt

Thank you for using Return Receipt Service.

P 612 304 702

US Postal Service
**Receipt for Certified Mail**
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

| | |
|---|---|
| Sent to Jeffrey Schmidt, Esq. | |
| Street & Number 200 South High Street | |
| Post Office, State, & ZIP Code Wailuku, HI 96793 | |
| Postage | $ .32 |
| Certified Fee | 1.35 |
| Special Delivery Fee | |
| Restricted Delivery Fee | |
| Return Receipt Showing to Whom & Date Delivered | 1.10 |
| Return Receipt Showing to Whom, Date, & Addressee's Address | |
| **TOTAL** Postage & Fees | $ 2.77 |
| Postmark or Date | |

HONOLULU HI DOWNTOWN STA 9 1998 USA

PS Form **3800**, April 1995

A97-722 - Maui Electric Co., Ltd.

BENJAMIN J. CAYETANO
GOVERNOR

ESTHER UEDA
EXECUTIVE OFFICER

**STATE OF HAWAII**
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM
**LAND USE COMMISSION**
P.O. Box 2359
Honolulu, HI 96804-2359
Telephone: 808-587-3822
Fax: 808-587-3827

June 9, 1998

B. Martin Luna, Esq.
Carlsmith Wichman Ball Case & Ichiki
One Main Plaza, Ste. 400
2200 Main Street
Wailuku, HI 96793

Dear Mr. Luna:

Enclosed is a Land Use Commission meeting agenda.

A97-722 - Maui Electric Co., Ltd.

will be acted on or heard at that time. You or your representative should be present at this meeting. If you cannot attend this meeting, please contact our office as soon as possible.

Should you have any questions on this matter, please contact this office at 587-3822.

Very truly yours,

ESTHER UEDA
Executive Officer

EU:dyk

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2. ☐ Restricted Delivery

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B. Martin Luna, Esq.
Carlsmith Ball Wichman Case & Ichiki
One Main Plaza, Ste. 400
2200 Main Street
Wailuku, HI 96793

4a. Article Number
P 612 304 700

4b. Service Type
☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery
6/10/98

5. Received By: *(Print Name)*

8. Addressee's Address *(Only if requested and fee is paid)*

6. Signature: *(Addressee or Agent)*
X

PS Form **3811**, December 1994 102595-97-B-0179 Domestic Return Receipt

Thank you for using Return Receipt Service.

P 612 304 700

US Postal Service
**Receipt for Certified Mail**
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

| | |
|---|---|
| Sent to B. Martin Luna, Esq. | |
| Street & Number 2200 Main Street, Ste. 400 | |
| Post Office, State, & ZIP Code Wailuku, HI 96793 | |
| Postage | $ .32 |
| Certified Fee | 1.35 |
| Special Delivery Fee | |
| Restricted Delivery Fee | |
| Return Receipt Showing to Whom & Date Delivered | 1.10 |
| Return Receipt Showing to Whom, Date, & Addressee's Address | |
| **TOTAL** Postage & Fees | $ 2.77 |
| Postmark or Date | |

HONOLULU DOWNTOWN STA JUN 9 1998 HI

PS Form **3800**, April 1995

A97-722 - Maui Electric Co., Ltd.

BENJAMIN J. CAYETANO
GOVERNOR

ESTHER UEDA
EXECUTIVE OFFICER

**STATE OF HAWAII**
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM
**LAND USE COMMISSION**
P.O. Box 2359
Honolulu, HI 96804-2359
Telephone: 808-587-3822
Fax: 808-587-3827

June 9, 1998

Ms. Lisa Nuyen, Planning Director
Planning Department, County of Maui
250 South High Street
Wailuku, HI 96793

Dear Ms. Nuyen:

Enclosed is a Land Use Commission meeting agenda.

Please note that petition (s)

A97-722 - Maui Electric Co., Ltd.

will be acted on or heard at that time. You or your representative should be present at this meeting. If you cannot attend this meeting, please contact our office as soon as possible.

Should you have any questions on this matter, please contact this office at 587-3822.

Very truly yours,

ESTHER UEDA
Executive Officer

EU:dyk

Enclosure

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- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
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I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Ms. Lisa Nuyen, Director
Planning Dept., County of Maui
250 South High Street
Wailuku, HI 96793

4a. Article Number
P 612 304 703

4b. Service Type
☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery 6/10/98

5. Received By: *(Print Name)*

8. Addressee's Address *(Only if requested and fee is paid)*

6. Signature: *(Addressee or Agent)*
X

PS Form **3811**, December 1994 102595-97-B-0179 **Domestic Return Receipt**

Thank you for using Return Receipt Service.

P 612 304 703

US Postal Service
**Receipt for Certified Mail**
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

| | |
|---|---|
| Sent to: Lisa Nuyen, Director | |
| Street & Number: 250 South High Street | |
| Post Office, State, & ZIP Code: Wailuku, HI 96793 | |
| Postage | $ .32 |
| Certified Fee | 1.35 |
| Special Delivery Fee | |
| Restricted Delivery Fee | |
| Return Receipt Showing to Whom & Date Delivered | 1.10 |
| Return Receipt Showing to Whom, Date, & Addressee's Address | |
| **TOTAL** Postage & Fees | $ 2.77 |
| Postmark or Date | |

HONOLULU DOWNTOWN STA JUN 9 1998 HI

PS Form **3800**, April 1995

A97-722 - Maui Electric Co.

# BEFORE THE LAND USE COMMISSION
# OF THE STATE OF HAWAI'I

| | | |
|---|---|---|
| In the matter of the petition of | ] | DOCKET NO. A97-722 |
| | ] | |
| MAUI ELECTRIC COMPANY, LIMITED | ] | |
| | ] | |
| To Amend the Land Use District Boundary of Certain Lands Situated at Wailuku and Makawao Districts, Island of Maui, State of Hawai'i, Consisting of 65.7 Acres from The Agricultural to the Urban District | ] | CERTIFICATE OF SERVICE |

LAND USE COMMISSION
STATE OF HAWAII
MAY 26 10 10 AM '98

## MAUI TOMORROW

## REBUTTAL

## IN THE MATTER OF CASE DOCKET # A97-722

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**May 20, 1998**

# BEFORE THE LAND USE COMMISSION
# OF THE STATE OF HAWAI'I

| | | |
|---|---|---|
| In the matter of the petition of | ] | DOCKET NO. A97-722 |
| | ] | |
| MAUI ELECTRIC COMPANY, LIMITED | ] | |
| | ] | |
| To Amend the Land Use District Boundary of Certain Lands Situated at Wailuku and Makawao Districts, Island of Maui, State of Hawai'i, Consisting of 65.7 Acres from The Agricultural to the Urban District | ] | CERTIFICATE OF SERVICE |

## CERTIFICATE OF SERVICE

I hereby certify that a copy of Maui Tomorrow's Findings of Fact and Conclusions of Law and Order was served upon the following by U.S. Postal Service certified mail:

Richard Egged, Director
Office of Planning
P.O.Box 2359
Honolulu, HI 96804

Jeffrey Schmidt, Esq.
Corporation Counsel, County of Maui
Office of the Corporation Councel
200 South High Street
Wailuku, HI 96793

ANN OGATA-DEAL, Esq.
Deputy Attorney General
Hale Auhau, Third Floor
425 Queen Street
Honolulu, Hawai'I 96813

JEFFREY SCHMIDT, Esq.
Corporation Counsel
County of Maui
200 South High Street
Wailuku, Hawai'I 96793

STATE OF HAWAI'I
LAND USE COMMISSION
P.O.Box 2359
Honolulu, Hawai'i 96804

B. MARTIN LUNA (representing MECO)
CARLSMITH BALL WICHMAN CASE & ICHIKI
One Main Plaza, Suite 400
2200 Main Street
Wailuku, Hawai'I 96793

RICHARD EGGED, JR., Director
ABE MITSUDA, Administrator
Office of Planning
State of Hawai'I
P.O.Box 2359
Honolulu, Hawai'i 96804

DAVID W. BLANE, Planning
Planning Department
County of Maui
250 High Street
Wailuku, Hawai'I 96793

Dated Makawao, Hawai'i this 20th day of May 1998

Mark Sheehan

Mark Sheehan, Pres. Maui Tomorrow

Mark Sheehan

# REBUTTAL IN THE MATTER OF CASE DOCKET # A97-722

Since we, at Maui Tomorrow, are not lawyers, we ask the indulgence of the Land Use Commission if we have not prepared all of our materials according to traditional legal practices or jargon.

1. The "Findings of Facts and Conclusions of Law", which Maui Tomorrow previously submitted, relate primarily to the two areas in which Maui Tomorrow has standing.

   (2) Alternative sources, fuels & processes

   Particularly, but not exclusively, to how the potential for alternative energy resources has been underestimated, neglected, denigrated, and misconstrued by MECO

   (3) The impact of industrialization on the central valley area of Maui

   Particularly, but not exclusively, as the proposed power plant relates to the permanent elimination of 65.7 acres of prime "Grade A" lands

MECO' Post-Hearing Brief challenges the testimony of Maui Tomorrow's witnesses (see Post-Hearing Brief, Page 5) as being merely "hearsay of the lowest form". Maui Tomorrow wishes to remind the Land Use Commission that several of Maui Tomorrow's witnesses remained unchallenged with regard to their "expert witness" status. For example, Mr. Richard Mayer's "expert witness" status was unchallenged by MECO and his testimony remained unchallenged both at the hearing and in the "Findings of Fact, Conclusions of Law, and Post-Hearing Brief.

Rather than being hearsay evidence, Mr. Mayer's testimony referred to relevant sections of the State of Hawaii Constitution, Hawaii State General Plan, Maui County General Plan, State of Hawaii Energy Functional Plan, Wailuku-Kahului Community Plan, etc. He showed the direct relevance of those documents to MECO's petition and specifically to their avoidance of using alternative, indigenous energy sources.

2. Maui Tomorrow consistently argued in both the public contested case hearing and in its

submission of "Findings of Fact and Conclusions of Law" that **MECO was negligent in applying for a fossil fuel powered plant without giving proper attention to the development of indigenous alternative energy sources**. This basic flaw on the part of MECO (which, in fact, is the basic assumption of MECO's petition) makes their whole application faulty because they have not proven that there is a need to amend the district boundaries and to change this valuable "Grade A" agriculture district land into an urban district.

---

THE FOLLOWING ITEMS REFER TO STATEMENTS MADE IN MECO'S "PROPOSED FINDINGS OF FACT..." AND REFER TO SPECIFIC ITEM NUMBERS IN THAT DOCUMENT.

3. On several occasions during the hearing testimony, MECO stated and then wrote on page 17 of MECO's "Findings of Fact...", that " the project's Final Environmental Impact Statement was accepted by the County of Maui Planning Department on November 24, 1997."

   Maui Tomorrow questions the ability of the Planning Department both to evaluate and to approve an Environmental Impact Statement. The Maui Planning Department has no expertise in this area; they have no scientists, energy experts, or economists to make a proper determination of the adequacy of an EIS. For example, during the cross-examination of Mr. David Blaine, the Director Maui County Planning Department, he admitted that he had no idea what the word " indigenous" meant and how it could be relevant to the MECO F.E.I.S.. Therefore any of MECO's assertions that the EIS is adequate and has been approved, rest on a very weak foundation. Furthermore, it is significant to note that NO agency of the State Government has approved this F.E.I.S.; in fact no agency, not even the normal State's EIS-reviewing agency, the Office of Quality Control (OEQC), has even reviewed the F.E.I.S.

4. On page 6 item 15, Ms. Madelyn D'Enbeau questioned the rate of growth of electricity demand on Maui and that the need to grant this District Boundary Amendment is not pressing. She presented materials that showed that demand was less than expected. MECO has made no effort to refute the assertion that the rate of growth of electrical

demand has slowed significantly since the petition was submitted and the FEIS was prepared.

5. On Page 20, item 63, it is indicated that the PUC gave approval to purchase the land. It should have been made clearer by MECO that this permission was granted to MECO without any agreement that an oil burning power plant has been approved. On the contrary, MECO purchased this land much like a separate, private investment with no guarantee by the PUC that the land purchase can be included in the rate base that is used to determine consumer electricity costs. In other words, MECO is "at risk" with regard to the land purchase.

6. In several places MECO asserts that the quarry and the County landfill are in close proximity to the proposed power plant, thus justifying the concept that this is not "spot zoning" and is actually part of an urbanizing area. This assertion is not true. Both the quarry and the County landfill are much more than 1,000 ft. from the proposed power plant. In fact, the proposed power plant would be a classic case of "spot zoning" and would inappropriately add to the industrialization of the central valley of Maui. (Page 20 #65; Page 56 #175; Page 57 #181; Page 63 #3; and Page 64 #9).

7. On Page 23 #77, MECO states that "engineering for the first component of generating capacity will begin in the year 2000." With this timetable, MECO surely can postpone this petition until after the PUC has approved an IRP for an oil burning power plant. (Expected by MECO next year, 1999)

8. On Page 24 #78, MECO states that they have the financial capability to construct this project. However, they have neglected to point out that much of the cost of this project will be borne in higher electricity rates by the residential consumers, businesses, and State and County government. Specifically, the construction of a fossil fuel burning power plant will increase the costs of electricity, both because MECO will be able to pass on the construction costs in their rate base and because the very high oil fuel costs will be passed on directly to the rate payers, both private and public. According to the "cost-plus" formula of the PUC, MECO will earn more $'s if an expensive power plant is built.

9. On Page 25 #79, there is a major misrepresentation made by MECO. They assert that "The County of Maui supports the petition for District Boundary Amendment." The error lies in the fact that approval of such an amendment must be made by the County Council upon the advice of the Maui County Planning Commission. Clearly, the Planning Commission has given no such advice, and more importantly the County Council of Maui County has given no such approval. The County Planning Department's role is much like the staff of the Land Use Commission. They can make recommendations, but they certainly do not approve land use changes.

10. In several locations, MECO asserts that "the proposed reclassification is ***generally*** consistent with the objectives and policies [of the Hawaii State Plan] for the economy, facility systems energy and telecommunications". (Page 26 #83 and similarly on Page 60 #192.) The vagueness of the term "***generally***" belies the fact that this proposal violates a number of significant statements in both the State Plan and the Energy Functional Plan.
For example, the MECO proposal violates the "Hawai'i State General Plan" stated in H.R.S. 226-18, "Objective and policies for facility systems -- energy / telecommunications
(a) planning for the State's facility systems with regard to energy / telecommunications shall be directed towards the achievement of the following objectives:
    (2) Increased energy self-sufficiency where the ratio of indigenous to imported energy use is increased; and
    (3) Greater energy security in the face of threats to Hawai'i's energy supplies and systems.

11. On Pages 27-30, item numbers 86-94, MECO discusses the use of agricultural land as if all agriculture land is the same. In fact, the proposed power plant is to be sited on "Class A" prime agricultural land. MECO develops the false relationship between the prime lands it will be using on the one hand, and cropland and other agricultural lands elsewhere in the County on the other hand. They never compare their "Class A" prime agricultural land with the actual scarcity of the equal quality land. They certainly have made no case why such precious "Class A" land which is intended to be protected by: a) the Hawaii State Constitution, b) the State General Plan, and c) the Land Use Commission's own criteria

should be used for such a purpose as a power plant.

For example: the "Constitution of the State of Hawai'i", in Article XI states in Section 3, dealing with Agricultural Lands that "The State shall conserve and protect agricultural lands, promote diversified agriculture, increase agricultural self-sufficiency and assure the availability of agricultural suitable lands."

12. On Page 29 #91& 94, MECO tries to trivialize the 65.7 acres by comparing it to a variety of HC&S activities. In fact, the redeployment of land by HC&S has no relationship to this power plant. HC&S would undertake these activities (new fields of sugarcane) regardless of MECO's ability to build a power plant.

13. On Page 30 #95, MECO falsely asserts that "The proposed Boundary Amendment conforms to the Maui County General Plan." Maui Tomorrow has pointed out in its "Finding of Fact and Conclusions of Law" the many ways in which the County General Plan would be violated by the granting of this Boundary Amendment.

Some examples of violations of the Maui County General Plan:

A major objective of the Maui County General Plan within the land use section of the plan, Objective 3, Policy A is to "Protect prime agricultural lands from competing non-agricultural land uses" (F.E.I.S. Section 5.7 on PAGE 5-18).

Another major objective of the Maui County General Plan within the land use section of the plan, Objective 3, Policy D is to "Discourage the conversion of productive or potentially productive agricultural lands to non-agricultural purposes." (F.E.I.S. Section 5.7 on PAGE 5-18)

Significantly, MECO included in their application for a boundary change some of the less relevant sections of the Maui County General Plan. However MECO omitted the relevant energy section. The Land Use commission should deny this application because the Maui County General Plan clearly states in its Energy Objective #1: "To make Maui County **more self-sufficient** in its need for non-renewable energy and more efficient in its use of energy."

14. On Page 30 #96, MECO falsely asserts that "The proposed Boundary Amendment conforms to the Wailuku/Kahului Community Plan." Maui Tomorrow has pointed out in its "Finding of Fact and Conclusions of Law" the many ways in which the Wailuku/Kahului Community Plan would be violated by the granting of this Boundary Amendment.

Some examples of violations of the Wailuku/Kahului Community Plan:

Both the approved and newly proposed (but not yet adopted) versions of the Wailuku-Kahului Community Plans, (F.E.I.S. Section 5.8.1 on Page 5-20), (F.E.I.S. Section 5.8.2 on Page 5-21) contain recommendations pertaining to energy planning which are clear and consistent, "Promote the use of alternative energy sources, such as biomass, wind, and solar." (F.E.I.S. Page 5-21) (It should be noted that this is the ONLY statement relating to energy cited in the two Wailuku-Kahului Community Plans and it clearly indicates that within the Wailuku-Kahului region, alternate energy resources are preferred).

Both the approved and newly proposed (but not yet adopted) versions of the Wailuku-Kahului Community Plans, (F.E.I.S. Section 5.8.1 on Page 5-20), (F.E.I.S. Section 5.8.2 on Page 5-21) contain recommendations pertaining to agricultural lands which are clear and consistent, "Preserve agricultural lands as a major element of the open space setting which borders the various communities within the planning region." An LUC district reclassification for the purpose of an oil-burning power plant would violate the Community Plan.

15. On Page 31 #100, MECO asserts that an IRP Advisory Committee has been involved in the IRP process. It should have been made clearer by MECO that the Advisory Committee has <u>never</u> voted to approve of this power plant nor has the IRP Advisory Committee ever voted to recommend that such a power plant be constructed.

16. On Page 31-32 #101, MECO describes its need for expanded power generating capacity based on its forecast of customer demand. However, it should be noted that MECO's projections of forecasted demand have steadily decreased.

17. On Page 32 #101, MECO indicates that they can no longer assume that they would be able to purchase power from HC&S plantation. However, they neglect to point out that if HC&S or any other independent electricity producer does not sell the electricity to the utility, that independent producer will be utilizing the electricity on their own plantation or selling it to another consumer, thus reducing the need for MECO to supply electricity. This will help keep demand down.

18. On Page 32-33 #102, MECO asserts that they investigated alternative technologies and found them to be "in most cases, ...prohibitory expensive." As Maui Tomorrow pointed out in its "Findings of Fact..." MECO has itself claimed in its F.E.I.S. that the capital cost of wind power is cheaper than for a fossil fuel plant. Furthermore, it can be assumed that the oil burning power plant will have very high energy costs (that are passed on to the consumers), while the wind power facility will have no fuel costs. (F.E.I.S. page 3-25)

19. On Page 33 #104, MECO states that the wind turbines would require 1600 acres of land. Neither Maui Tomorrow nor has anyone else has argued that all of Maui's future electricity generation should be provided solely by wind power. MECO fails to point out that the acreage needed for a wind farm producing about 40 or 50 MW could be constructed on a much smaller parcel of land. However, most importantly, the land beneath the wind mills could continue to be utilized for agricultural purposes or as MECO's representative, Mr. Seki stated "I've seen wind operations at Kahua Ranch on the Big Island where they had some wind farms operating and they had cattle grazing under that area." (L.U.C. hearing on April 8, 1998, Volume VI Page 236).

    Conversely, the 65.7 acres of "Grade A" land utilized for an oil burning power plant could never again be utilized for agricultural purposes.

20. On Page 33 #106-107, MECO attempts to belittle the utilization of wind power because it would potentially be a fluctuating source. MECO again has neglected to point out that a wind system would best be constructed in conjunction with a storage system, most likely

a hydro-pump storage system. (Hydro-pumped storage operates by pumping water from a lower reservoir to a higher reservoir when the wind blows strongly and releasing it during low wind periods. The water would be converted to electricity through a closed-circuit hydroelectric system.)

It must be remembered that MECO has produced a report on such a hydro-pump storage system, but has repeatedly refused to share this report with the Land Use Commission, Maui Tomorrow, or the general public. MECO'S expert witness, Mr. Seki, stated, (referring to pump storage information) "...now we have that information for the second round of IRP." (L.U.C. hearing on April 8, 1998, Volume VI Page 242)

Note: Last week it was announced that a hydro-pump storage system is being investigated on the island of Oahu by a Pumped Storage Company {PSC}. PSC has suggested such a system to HECO, tied to the Kahe power plant. HECO would increase energy production at Kahe and PSC would convert night-time energy to day-time energy. Why not on Maui?

21. On Page 34 #109, MECO asserts that a number of jobs would be made available during the construction and operating phases of the fossil fuel plant. They fail to acknowledge that <u>many more</u> jobs would be created by the development of alternative energy resources.

22. On Page 36 #114, MECO indicates that a study was begun in 1989 to select a site for a oil burning power plant. It seems that the ten subsequent site studies that were done to investigate potential sites all were made on the assumption that alternative energy resources would NOT be developed. MECO should have considered a mixture of oil power and alternative energy technologies.

23. THREE ITEMS WITH REGARD TO GROUND WATER RESOURCES:
On Pages 39-42, there is an extensive discussion of ground water resources. Item #128 makes a very unusual statement which would lead one to believe that MECO is

playing very loose with the precious Maui ground water resources. In the second sentence it states, "the mineral content of the waste water is therefore expected to be similar in quality to that of the basal aquifer from which it originates, **but more concentrated**. (MT's boldface )" If, in fact, the minerals are more concentrated, it certainly cannot be similar in quality. If it is not similar in quality, then there may be a serious degradation in the quality of Maui's basal aquifer.

Pages 39-42, Item #129 describes the effect over a ten-year period of continuous injection. Maui Tomorrow questions the use of a mere ten-year period since this plant will be operating for many decades to come. Furthermore, Maui Tomorrow is at a loss to understand the third sentence which states that, "the dispersion, which was not accounted for in the model, will have a mitigating effect causing any concentration differences to dissipate...". How can something not accounted for have a mitigating effect? And furthermore, won't the dispersion merely spread out the concentrated minerals?

Pages 39-42 Item #130 indicated that 440,000 gallons per day of waste water which has a "quality similar to down gradient wells" will be injected. If the water is so good, why is it being injected; such high quality water would most likely have a far higher use as irrigation water for the water short HC&S plantation. This leads Maui Tomorrow to doubt that the 440,000 gallons being injected are in fact of such high quality.

24. Page 50 #157 and Page 55 #173, both describe the effect of the proposed project on public services. Unfortunately, the additional costs of road improvements have not been calculated into the costs of this plant. This underestimates the true cost of the oil burning plant, and specifically makes the comparison between trucking costs and pipeline costs invalid. (See Appendix A in the F.E.I.S.) If such road improvement costs were included in MECO's calculations, they would probably make clear that this power plant will cost substantially more than some of the alternative energy sources.

25. Page 51 #159 makes a statement which is contrary to the one found in the F.E.I.S.. Here it states that "management of the fuel delivery schedule (will be conducted) to ensure that such traffic took place during non-peak times (and) would result in no significant impact..." By contrast, in the F.E.I.S. (See the table on Page 4-79), it is stated that oil delivery truck traffic during peak hours will take place at a rate of six trucks per hour. This is a serious contradiction.

26. On Page 57 item #183 and on page 60 #194, MECO audaciously states in a sweeping statement that, "the project complies with the Hawaii State Plan, the State Energy Functional Plan, the Coastal Zone Management Act, the Maui County General Plan, and the Wailuku/Kahului Community Plan" Making these bold assertions does not mean that they are true!!

    As Maui Tomorrow stated in their "Finding of Fact...", this petition violates the above plans in several ways. Please see also Items #10, #13, and #14 above.

27. On page 59 #187, MECO states that "at the present time, alternative fuels and technologies do not represent least-cost energy supply option...". The F.E.I.S. on page 3-24 directly contradicts this statement. Wind power is shown there to be the least-cost energy supply option.

    MECO'S F.E.I.S (on page 3-24) makes a very strong case that wind-power is actually much cheaper for Maui than MECO's proposed, oil-burning power plant. Specifically, the F.E.I.S. states that the capital cost for wind generation will be only $13.3 million /10 MW. This cost for a wind facility compares to a higher cost of $17.8 million/10 MW for the oil-burning power plant. (Note: the $17.8 million figure for the oil-burning power plant is derived from a total cost of $417.6 million for a 232 MW facility.)

    Not only will the capital cost of the wind facility be cheaper than the MECO-proposed, oil-burning power plant, but there would be no fuel cost, no fuel-trucking

cost, no air pollution, and, finally, no loss of prime agricultural land from a wind plant.

28. On page 59 #188, MECO indicates that it is committed to an action plan to try to overcome some of the barriers to renewable energy development. If the Land Use Commission now gives approval for the Boundary Amendment, then the proposed oil burning power plant will be constructed, and the proposed development of renewable energy resources will be precluded. It will be irrevocably too late to establish alternative fuel resources.

29. On Page 62 #200, MECO argues that "incremental districting is not required because full development of the subject property can substantially be completed within ten years after the date of the Land Use Commission's approval." This statement is untrue. The power plant is proposed to be constructed over several decades and in several phases. Consequentially, "incremental districting" should be required.

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THE FOLLOWING ITEMS REFER TO STATEMENTS MADE IN THE *"CONCLUSIONS OF LAW"* SECTION OF MECO'S "PROPOSED FINDINGS OF FACT..." AND REFER TO SPECIFIC ITEM NUMBERS IN THAT SECTION. (Pages 62-66)

30. Page 63 #3 states that "the nearby land fill and quarry have created an area of 'city-like' heavy industrial use near the proposed Waena Generating Station site...". And on page 64 #9, a statement is made that "The proposed Boundary Amendment will not contribute toward scattered spot urban development...". Both of those statements are false since the land fill and the quarry are both well over 1000 ft. away. A Boundary Amendment to the urban district would clearly be "spot zoning".

31. On Page 64 #13, it states that "The proposed Boundary Amendment is reasonable, not violative of ...". Maui Tomorrow believes that this amendment is directly violative of the State Constitution and the State and County General Plans which call for the preservation of prime agricultural lands.

32. Page 65 #14 argues that reclassification is in conformance with the goals, objectives and policies of the Hawaii State Plan and relates to the applicable priority guidelines of the Hawaii State Plan and the adopted functional plans. For reasons cited (Please see Item #10 above.), Maui Tomorrow believes these statements to be untrue.

33. On Page 65 #16, Maui Tomorrow believes that the proposed reclassification **WILL** adversely impact on the following areas of State concern:

    (3) Maintenance of other natural resources relevant to Hawaii's economy including , but not limited to agricultural resources;

    (4) Provision for employment opportunities and economic development ;

34. On Page 65 #17, Maui Tomorrow believes that the following statement by MECO is false, "The proposed reclassification conforms to the General Plan of the county in which the land is located. LUC Rules 15-15-77(b)(4)." In numerous ways, this proposal violates Maui County's General Plan (Please see Items #13 and #14 above). Note also that the Maui County Planning Commission voiced a long list of serious concerns, rather than approving this project.

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THE FOLLOWING ITEM REFERS TO A STATEMENT MADE IN THE "*DECISION*" SECTION OF MECO'S "PROPOSED FINDINGS OF FACT..." AND REFERS TO A SPECIFIC ITEM IN THAT SECTION. (Page 68)

35. On Page 68 #7, it states that "MECO would be required to provide the funding for the construction of local and regional transportation improvements and programs attributable to the operations of the Waena Generating Station as determined by the State of Hawaii Department of Transportation and the County of Maui." Maui Tomorrow feels that the additional costs of road improvements have not been calculated into the costs of this power plant. This underestimates the true cost of the oil burning plant and specifically makes the comparison between trucking costs and pipeline costs invalid. (See Appendix A in the F.E.I.S.) If such road improvement costs were included in the calculations, they would help point out that this power plant will cost substantially more than some of the alternative energy sources.

**Just as Maui Tomorrow requested in its previous submission of "Findings of Facts and Conclusions of Law", it again asks that the following Order be issued by the Land Use Commission.**

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## PROPOSED ORDER

Whereas the Land Use Commission is unable to find adequate justification at this time for a boundary amendment re-classification from the agricultural to the urban district, this petition is hereby denied.

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## IN THE ALTERNATIVE,

## (WHICH INTERVENORS BELIEVE SHOULD BE INAPPLICABLE)

## CONDITIONS

1. No further re-zoning or re-classification permits or amendments should be applied for by Maui Electric Company, Limited until the Public Utilities Commission approves an Integrated Resource Plan which would allow for an oil-burning power plant at the proposed Waena site.

2. No power plant should be constructed or applied for by Maui Electric Company, Limited without first being in compliance with the State of Hawai'i General Plan, County of Maui General Plan, and the Wailuku-Kahului Community Plan which variously include the following objectives:

1. Dependable, efficient and economical energy systems

2. Increased self-sufficiency where the ratio of indigenous to imported energy use is increased

3. Greater energy security in the face of threats to Hawai'i's energy and supply systems

4. Promote the use of alternative energy sources, such as wind, biomass, and solar

5. Make Maui County more self-sufficient in its use of non-renewable energy and more efficient in its use of energy

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ORIGINAL

LAND USE COMMISSION
STATE OF HAWAII
MAY 22 4 15 PM '98

BEFORE THE LAND USE COMMISSION

STATE OF HAWAII

| | |
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| In the Matter of the Petition of | DOCKET NO. A97-722 |
| MAUI ELECTRIC COMPANY, LIMITED, a Hawaii corporation, | MAUI ELECTRIC COMPANY, LIMITED'S ANALYSIS, COMMENTS, AND OBJECTIONS TO MAUI TOMORROW'S PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW IN THE MATTER OF CASE DOCKET #A97-722, FILED MAY 15, 1998; CERTIFICATE OF SERVICE |
| To Amend the Agricultural Land Use District Boundary into the Urban Land Use District for Approximately 65.7 Acres of Land at Wailuku and Makawao Districts, Maui, Hawaii, TMK 3-8-03:23 and 24 | HEARINGS CONDUCTED:<br>February 26 and 27, 1998<br>April 8 and 9, 1998<br>April 23 and 24, 1998 |

MAUI ELECTRIC COMPANY, LIMITED'S ANALYSIS, COMMENTS, AND OBJECTIONS TO MAUI TOMORROW'S PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW IN THE MATTER OF CASE DOCKET #A97-722, FILED MAY 15, 1998

Maui Electric Company Limited ("MECO") hereby submits its analysis, comments and objections to Maui Tomorrow's proposed Findings of Fact and Conclusions of Law, filed May 15, 1998.

## I. INTRODUCTION

Maui Tomorrow's Proposed Findings of Fact and Conclusions of Law are utterly devoid of citations and references to the record in this proceeding. At the close of the hearings on this matter, the Chairperson of the Land Use Commission stated:

> We request that each party draw a proposed findings of fact, conclusions of law and decision [and] order *to be tied in with the page and line numbers of the transcript to identify your facts. In addition to the transcripts, the exhibits should also be referenced*

4/24/98 transcript, p. 199, lines 18-22 (emphasis added).

Such references were requested by the Land Use Commission to ensure that the Findings of Fact, Conclusions of Law, Decision and Order of the Land Use Commission will be tied directly to the record before the Commission and not based upon hearsay, speculation, or conjecture. "A decision cannot stand if. . .there is no reasonable, substantial, and probative evidence supporting the order, and it appeas the order can only rest upon conjecture, guess, or chance." 2 Am.Jur. 2d, Administrative Law § 350 (1994).

The absence of evdience to support Maui Tomorrow's position is nowhere more apparent than in the speculation and conjecture that prevails and predominates Maui Tomorrow's proposed Findings of Fact and Conclusions of Law. Accordingly, Maui Tomorrow's submission does not warrant serious consideration from the Land Use Commission because it is replete with

unsupported argument and references to matters outside this proceedings and material outside the record of this proceeding. It is well established that any findings of fact which are made by an agency must be supported by the evidentiary facts in the record. 2 Am.Jur.2d Administrative Law § 390 (1994). Indeed, the record of an administrative proceeding *must include the entire evidentiary basis of the decision.* 2 Am.Jur.2d Administrative Law § 386 (1994) (emphasis added). *"The use of extra-record evidence constitutes fatal error and a denial of due process if the agency's journey outside the record works a substantial prejudice on a party."* Id

MECO has sought to present a meaningful analysis of Maui Tomorrow's submission, but because Maui Tomorrow's submission lacks references and authority in the record, MECO has in many instances only been able to detail some of the evidence presented to the Commission which rebuts Maui Tomorrow's assertions. MECO evidence has, in all matters on the record before the Land Use Commission, constituted the clear perponderance of the evidence.

## II. FINDINGS OF FACT

| MAUI TOMORROW'S FOF | MECO'S ANALYSIS, COMMENTS, OBJECTIONS | CITATION/ AUTHORITY |
|---|---|---|
| A. **HAWAI'I'S CLASS A" PRIME AGRICULTURAL LANDS REQUIRE PRESERVATION** | | |
| 1. Class A agricultural lands are lands which have been rated by the University of Hawai'i's Land Study Bureau to have the highest quality productivity rating. | The Department of Agriculture of the State of Hawaii does not object to the requested district boundary amendment. | Exhibit C-85; MECO Finding 85. |

| MAUI TOMORROW'S FOF | MECO'S ANALYSIS, COMMENTS, OBJECTIONS | CITATION/ AUTHORITY |
|---|---|---|
| Only 32,678 acres out of Maui Island's 459,269 total acres are rated "Class A". (Detailed Land Classification - Island of Maui, U.H. Land Study Bureau, May, 1967). | | |
| The entirety of the 65.7 acre location of the proposed power plant is rated as "Class A Prime Agricultural" land. (F.E.I.S., Page 4-64). | | |
| The construction of the foundation alone (which would be completed in the first phase regardless of any changes to the technology used over time) for this proposed power plant would permanently remove this "Class A" rated agricultural land from future agricultural use. (F.E.I.S., Pages 6-1 | | |

| MAUI TOMORROW'S FOF | MECO'S ANALYSIS, COMMENTS, OBJECTIONS | CITATION/ AUTHORITY |
|---|---|---|
| and 6-2) | | |
| | The subject property represents approximately 0.02% of Maui County's total farmland, 0.07% of Maui County's total crop land, and only 0.18% of HC&S total acreage. The subject property represents approximately 0.004% of the total farmland listed within the entire State of Hawaii. | Petition, p. 26; 4/8/98 transcript, p. 187, line 23 - p. 189, line 3; Exhibit C-109. |
| | MECO has always recognized that the land involved in this petition for boundary amendment is prime agricultural land. Maui Tomorrow's figures (found in MT's Finding 1) are not properly included in the Land Use Commission's Findings of Fact, however, because the referenced material (Detailed Land Classification - Island of Maui, U.H. Land Study Bureau, May, 1967) was never introduced into evidence and is not a part of the record in this matter. | |
| | HC&S is undergoing expansion which will add 1400 acres to its inventory of productive lands, which represents an increase of acreage by more than 20 times the amount that will be removed from production. | Petition, pp.26-27, 4/8/98 transcript, p. 154, line 11 - p. 156, line 10; Exhibit C-85. |
| | Pursuant to LUC Rules Section 15-15-77 (b)(6), Land Use Commission may approve boundary amendments that will convert land from intensive agricultural use to urban use so long as the proposed boundary amendment will not substantially impair actual or potential agricultural production and is reasonably necessary for urban growth. | Petition p. 27; MECO Finding 93. |
| | The foregoing figures reflect that the removal of 65.7 acres from agricultural use represents an insignificant percentage (0.004% of the farmland in the State of Hawaii) of the lands in | |

| MAUI TOMORROW'S FOF | MECO'S ANALYSIS, COMMENTS, OBJECTIONS | CITATION/ AUTHORITY |
|---|---|---|
| | agricultural production and further that the conversion to urban use will have no impairment to existing agricultural production. The proposed Waena generating station is planned to provide the necessary energy to both meet and allow the expanding energy needs of the island of Maui residents and economy and is reasonably necessary for urban growth. The additional energy will also allow for continued and expanded agricultural operations by insuring reliable power for irrigation uses and processing operations. | 4/8/98 transcript, p. 157, lines 23-24.<br><br>4/8/98 transcript, p. 157, line 25 - p. 158, line 1; MECO Finding 93. |
| | The proposed boundary amendment conforms to the Maui County General Plan. | MECO Finding 95 and 96; Written Testimony of the Maui Planning Department, filed on or about January 26, 1998, pp. 9-12, 24. |
| | The proposed boundary amendment conforms to the Wailuku/Kahului Community Plan. | |
| 4. MECO stated several times in its L.U.C. hearing testimony that the loss of 65.7 acres of prime "Class A" land is appropriate since lands elsewhere would be added to production. | The testimony of MECO's witnesses was that the loss of 65.7 acres was *insignificant* given its impact on the overall production of HC&S. | 4/8/98 transcript, p. 155, line 25 and p. 156, lines 1-2; 4/8/98 transcript, p. 188, lines 6-10. |
| MECO neither identified the particular land parcel(s) that | This acreage includes 280 acres near Kuihelani Highway, designated as "other important Agricultural Lands" under the ALISH designations, and over 1,100 acres between | F.E.I.S., Section 7, Response by CH2MHill Project Manager to Rick |

| MAUI TOMORROW'S FOF | MECO'S ANALYSIS, COMMENTS, OBJECTIONS | CITATION/ AUTHORITY |
|---|---|---|
| would be substituted nor did MECO ever state whether "Class A" lands would be substituted, but rather stated that 1,100 acres of formerly cultivated land would be put back into production (F.E.I.S., Pages 4-69). This conversion of crop land would be occurring with or without the sale of the 65.7 acre parcel for the proposed power plant. | Kuihelani and Honoapiilani Highway designated as "Prime Agricultural Lands" under ALISH.<br><br>This finding is clearly erroneous because it addresses the "sale" of 65.7 acres for the proposed Waena Generating Station. In fact, MECO is already the fee owner of the parcel. | Egged, Director, Office Planning dated 11/3/97<br><br>2/26/98 transcript, p. 92, lines 9-19; Exhibit C-115; Petition, pp. 2-3; MECO Findings 63 and 66.. |
| The use of windmills would allow agricultural lands to remain in production. According to the testimony of MECO's expert witness, Mr. Seki, the land under the windmills could continue to be utilized for agricultural purposes. He said, "I've seen wind operations at Kahua Ranch on the big island | Maui Tomorrow's suggestion that the use of windmills would be superior is factually incorrect. While the land under windmills could, in some instances, be used for agricultural purposes, Maui Tomorrow has failed to recognize that over 1,600 acres of land would required for the placement of sufficient windmills to generate the same amount of energy that will be produced by the 65.7 acre Waena Generating Station. Furthermore, since windmills are an "as-available" source of power generation, the vast acreage required for energy storage must further be added to the 1,600 acres of windmills (provided that such storage would even be feasible).<br><br>Maui Tomorrow has quoted part of Mr. Seki's testimony, but has omitted his subsequent statement that "just because it's renewable, it | 2/27/98 transcript, p. 216, line 10 - p. 217, line 16; Exhibit C-118.<br><br>2/27/98 transcript, p. 236 line 22 - p. 237, line 1. |

| MAUI TOMORROW'S FOF | MECO'S ANALYSIS, COMMENTS, OBJECTIONS | CITATION/ AUTHORITY |
|---|---|---|
| where they had some wind farms operating and they cattle grazing under that area." (L.U.C. hearing on April 8, 1998, Volume VI, Page 236) | doesn't mean it doesn't have any kind of environmental impact, and the wind industry is concerned about bird kills, aesthetics, noise, possible soil erosion. So all these factors have to be weighed and balanced with the other technologies also." | |
| 5. The irreversible loss of 65.7 acres of prime agricultural land is a significantly adverse impact. (Hearing transcripts, Roy Smith, April 24, Vol. VI, pages 19-23) | There is no supporting testimony by Mr. Smith regarding this statement. Accordingly, this statement is without basis in the record. | |
| B. **MAUI COUNTY PLANNING COMMISSION HAS SERIOUS CONCERNS ABOUT THIS PROJECT** | | |
| 6. At the Maui County Planning Commission hearing on this petition held March 10, 1998, the Maui County Planning Commission did not recommend approval or denial of this petition. At that time, the commissioners raised a number of serious | The recommendations, comments, concerns, or conclusions of the Maui County Planning Commission are irrelevant to the decision of the Land Use Commission of the State of Hawaii. Where, as here, the county planning department has stated support from the proposed boundary amendment.<br><br>Maui Tomorrow has misstated the record and the proceedings before the Maui County Planning Commission. Maui Tomorrow has presumed to know the concerns of the Maui County Planning Commission and has therefore provided an incomplete list of such "concerns" that has been edited to suit Maui Tomorrow's own purposes. | |

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| concerns. . . | Any finding of fact by the Land Use Commission which relates to proceedings before the Maui County Planning Commission would be based entirely on hearsay. | |
| C. **MECO HAS FAILED TO ADEQUATELY PLAN FOR RISE IN FOSSIL FUEL COSTS** | | |
| | This entire section of proposed findings of fact may be disregarded because it is premised upon an article found in SCIENTIFIC AMERICAN which was never entered into evidence before the Land Use Commission and was never furnished to the other parties in this proceeding. MECO and the other parties have therefore been denied the opportunity for a full and true disclosure of the facts via cross-examination and the submission of rebuttal evidence.<br><br>If the referenced SCIENTIFIC AMERICAN article was received into evidence, then the parties have been denied the right to cross-examination, because no copy was ever made available to the parties.<br><br>If the referenced SCIENTIFIC AMERICAN article was not received into evidence, then it is outside the record of this proceedings and cannot form the basis of a finding of fact. | "The right to cross-examination attaches when the administrative body receives any testimony or documentary evidence." 2 Am.Jur 2d Administrative Law § 355 (1994). |
| 7, 8. The F.E.I.S. analysis failed to adequately evaluate and address future increases in oil prices resulting from the depletion of oil reserves globally. | Future increases in oil prices is accounted for in MECO's IRP process. A long term fuel price forecast is incorporated in the evaluation of fossil fuel sources in comparison to renewable sources. | Exhibit C-14 |

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| Therefore, when comparing real costs, fossil fuel becomes a less viable or acceptable fuel source than renewable energy sources.... | | |
| D. **MECO'S CURRENT PLAN DISREGARDS THE HAWAI'I STATE GOVERNMENT'S CONCERNS ABOUT HAWAI'I'S DEPENDENCE ON IMPORTED OIL** | | |
| 9. The proposed power plant plan is in direct contradiction to the State of Hawai'i's "Hawai'i's "Energy Strategy Program". In 1992, the Energy Policy Advisory Committee declared the following as part of the State of Hawai'i's Energy Policy Plan". . . | Maui Tomorrow has cited an advisory committee's report that was never codified in statute by the State of Hawaii and was never presented as evidence at the hearings before the Land Use Commission. The items referenced by Maui Tomorrow have not been adopted into the State of Hawaii Energy Functional Plan. They should therefore not be considered in the Land Use Commission's decision making. | State of Hawaii Energy Functional Plan |
| | MECO's proposed Waena Generating Station has the support of the State of Hawaii's Office of Planning and is in full compliance with HRS Section 226-18 of the Hawaii State Plan, "Objectives and Policies for Facility Systems Energy/Telecommunication." That plan, as distinguished from the material cited by Maui Tomorrow, applies specifically to the project and states the following: | F.E.I.S. pp. 5-12 to 5-13; Written Testimony of the State of Hawaii Office of Planning in Support of the Petition, filed on or around February 12, 1998; 4/23/98 transcript, p. 132, |

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| | a. Planning for the State's facility systems with regard to energy shall be directed towards the achievement of the following objectives:<br><br>1. Dependable, efficient and economical statewide energy systems capable of supporting the needs of the people;<br><br>2. Increased energy self-sufficiency where the ratio of indigenous to imported energy use is increased; and<br><br>3. Greater energy security on the face of threats to Hawaii's energy supplies and systems. | line 14 - p. 135, line 12 and p. 135, line 12 and p. 142, lines 4-19. |

E. **RENEWABLE (NON-FOSSIL FUEL BURNING) ENERGY SOURCES HAVE BEEN IMPROPERLY PORTRAYED, INADEQUATELY RESEARCHED AND SUMMARILY IGNORED**

| | | |
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| 10. The F.E.I.S. dismisses the potential for supplying Maui's electricity consumers with inexpensive, non-fossil fuel dependent electricity production technologies (wind, solar, biomass, photo-voltaic, etc.) in a very superficial, abbreviated, and misleading manner. (F.E.I.S., Pages 3-15 to 3-26) | The F.E.I.S. was not required in seeking a boundary amendment from agricultural land use to urban land use. It was nevertheless prepared and made available in this proceeding. Maui Tomorrow's criticism of the F.E.I.S. is misplaced, because MECO's F.E.I.S. was accepted as adequately fulfilling the requirements of Chapter 343 H.R.S. by the County of Maui, Department of Planning on November 24, 1997.<br><br>Maui Tomorrow has criticized the analysis of non-fossil fuels that is contained in the F.E.I.S. as "superficial, abbreviated, and misleading." It should be noted that in the F.E.I.S., MECO devoted more pages to the analysis of alternative fuels and technologies (pp. 3-15 to 3-33, single spaced) than Maui Tomorrow's entire proposed Findings of Fact in this case. The non-fossil fuel analysis that was included in MECO's F.E.I.S. was a summary of the larger work that was done for the Integrated Resource Planning ("IRP") | 4/8/98 transcript, p. 172, lines 10-24; 4/8/98 transcript, p. 189, line 24 - p. 190, line 3; Exhibits C-103 and C-104; MECO Findings 42-45. |

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| | process. It was not an exhaustive report of the entire analysis involved in that process. Nevertheless, even in the summary form, that information is more complete and fact based than anything Maui Tomorrow has offered on the subject. | |
| | Most renewable energy technologies are not cost-effective at this time. Exhibit C-117 shows a cost comparison of the renewable energy technologies with fossil fueled technologies. Wind energy costs are close with fossil fueled technologies, but wind is an as-available technology (i.e., works only when the wind is blowing). The other renewable energy technologies are more expensive than fossil-fueled technologies. | Exhibit C-117; 2/27/98 transcript, p. 215, line 1 - p. 216, line 18.<br><br>Exhibit C-103 |
| | F.E.I.S. page 3-19 explains that "Alternative energy sources being developed or in use in the State of Hawaii include biomass conversion, geothermal, hydroelectric, solar, wind, ocean thermal energy conversion, and coal. These technologies are expected to play an increasing role in energy production in the State of Hawaii. However, the timing of their technological development and commercial availability to provide cost-efficient firm generating capacity on the Island of Maui do not make them technically or economically viable options at this time." Pages 3-21 through 3-33 go on to discuss Biomass Conversion, Geothermal Energy, Ocean Thermal Energy Conversion, Fuel Cells, Wind Power, Solar Power, Hydroelectric Power, Coal-Based Technologies, Alternative Fuels, Landfill Gas and Digester Gas, Propane, Ethanol, Methanol, Orimulsion, Coal Slurries, Municipal Solid Waste, Naphtha and A-21. | F.E.I.S., pp. 3-19 - 3-33. |
| 11. The justification to give | There is absolutely no evidence in the record to support this Finding. Maui Tomorrow provided | |

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| more serious consideration to renewable electricity production technologies (wind, solar, biomass, photo-voltaic, etc.) is based on the fact that these technologies:<br>1) are less polluting;<br>2) provide more jobs;<br>3) are potentially less expensive; 4) may provide security against oil price rises; and 5) may provide security against fuel-oil supply disruptions. | neither expert witness testimony nor any proof that renewable energy production will create more jobs and is potentially less expensive.<br><br>Maui Tomorrow's commentary is directly contradicted by the proof offered by MECO. On an ongoing basis, the Public Utilities Commission requires MECO to examine all technologies (fossil fuel and renewable), as part of the Integrated Resource Planning ("IRP") process. The future demand must be met by technologies that can meet various factors (cost, performance or output, environmental factors, stage of maturity, integration with the utility, and others). | Exhibit C-117; Exhibit C-22; Exhibit C-23. |
| 12-13. . . . wind energy is dismissed as a viable alternative primarily because "... it depends on an intermittent resource." Yet energy storage systems, including pump storage, which may help overcome this limitation, are not addressed in the | There is absolutely no evidence in the record to support this Finding. Maui Tomorrow provided neither expert witness testimony nor any proof that pump storage is feasible. No proof was ever presented on where pump storage might be installed. No pump storage budget estimate or collateral impacts analysis was ever presented.<br><br>Maui Tomorrow's commentary is directly contradicted by the proof offered by MECO. MECO conducted a pump storage hydroelectric study as part of the IRP action plan. The whole intent of the IRP process is to undertake an integrated analysis which incorporates all aspects of the energy planning process. It is repugnant to | 4/23/98 transcript, p. 53, lines 4-21. |

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| F.E.I.S. or the petition<br>. . .<br>[a] pump storage system study would clarify the potential for wind power and perhaps other renewable energy production facilities. The L.U.C. should have this study available for examination.... | the purposes of IRP to isolate one piece or part of the process and examine it without reference to other considerations. Decisions are suboptimized if items are analyzed in isolation, without consideration of other components or collateral impacts. | |
| 14. Water heating comprises one of the most significant sectors of energy use on Maui, particularly at peak time. Solar thermal water heating is currently economically viable on Maui. . . . Solar thermal hot water systems reduce the peak and overall demand for central energy generating capacity. . . . | There is absolutely no evidence in the record to support this Finding. Maui Tomorrow provided neither expert witness testimony nor any proof relating to the cost per solar thermal system or how many systems would purportedly be needed to be installed to reduce the peak and overall demand for energy. | |
| 15. . . . grid-connected customer-sited photovoltaic systems are currently economical on | The break-even price of a 1 kW photovoltaic system would not be $7 per watt, because that assumes a photovoltaic cost of $7,500 per kW. On Maui, MECO experienced a $13,000 per kW cost for a 1 kW photovoltaic system.<br><br>This proposed finding is directly contradicted by | Maui Tomorrow, Exhibit 3; 4/24/98 transcript, p. 190, line 16 - p. 192, line 24. |

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| Maui.... Photovoltaics have no ongoing fuel costs. Customer-sited photovoltaic systems reduce the peak and overall demand for central energy generating capacity, and are sited on existing rooftops, therefore require no conversion of agricultural land to industrial use. | testimony elicited from Maui Tomorrow's own witness on cross-examination, where it was established that a cost of $13,000 per kW would render this technology unsuitable.<br><br>Maui Tomorrow's sole evidence in support of this finding is hearsay from an article of questionable evidentiary value. Indeed, it is not properly evidence at all because it is hearsay upon hearsay: Maui Tomorrow's witness testified about what he believed the federal government believed, on the basis of an article that was completely devoid of any technical information. "The technical part is not presented here. This is a summary article describing that they believe, the Federal Government believes this technology would be viable on Maui. I'm not a technical person and I don't claim to be."<br><br>Photovoltaic systems cannot reduce the MECO peak because the sun does not shine during this period (early evening). | 2 Am.Jur.2d, Administrative Law, § 348 (1994) ("Although the administrative procedure acts relax the rules of evidence to some degree ... *the proceedings do not become so open as to allow double hearsay*") (emphasis added).<br><br>Exhibit C-23 |
| 16. The discussion of renewable energy sources in the F.E.I.S. (Pages 3-15 to 3-26) incorrectly assumes that an oil-burning plant might only be replaced 100% by a single alternative. | The F.E.I.S. was not required in seeking a boundary amendment from agricultural land use to urban land use. It was, nevertheless prepared and made available in this proceeding. Maui Tomorrow's criticism of the F.E.I.S. is misplaced, because MECO's F.E.I.S. was accepted as adequately fulfilling the requirements of Chapter 343 H.R.S. by the County of Maui, Department of Planning on November 24, 1997. | 4/8/98 transcript, p. 172, lines 10-24; 4/8/98 transcript, p. 189, line 24 - p. 190, line 3; Exhibits C-103 and C-104; MECO Findings 42-45. |
| There is absolutely no discussion of the possibility of a mix of technologies. (For example, a feasible approach might be | There is absolutely no evidence in the record to support this Finding. Maui Tomorrow provided neither expert witness testimony nor any proof that a mix of technologies would be feasible on Maui.<br><br>Wind and photovoltaic technologies are as- | 2/27/98 transcript, p. 211, line 10 - p. 212, line 1; C-22 and C-23. |

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| to utilize wind for 25%, photovoltaic for 25%, biomass for 25%, and oil-burning for 25%). | available technologies. When the wind does not blow and the sun does not shine, MECO will still have to provide energy to meet demand on the island.<br><br>There is a limit on the amount of wind energy that can be allowed on the utility grid before it starts to cause problems on the utility system. | 2/27/98 transcript, p. 221, line 17 - p. 222, line 9; MECO Finding 107. |
| | Alternative energy sources being developed or in use in the State of Hawaii include biomass conversion, geothermal, hydroelectric, solar, wind, ocean thermal energy conversion, and coal. These technologies are expected to play an increasing role in energy production in the State of Hawaii. However, the timing of their technological development and commercial availability to provide cost-efficient firm generating capacity on the Island of Maui do not make them technically or economically viable options at this time. | 2/27/98 transcript, p. 211, line 1 - p. 218, line 25; F.E.I.S., p. 3-19; Exhibit C-22. |
| 17. MECO has failed to adequately examine innovative approaches to Demand Side Management and conservation. A considerable amount of electricity on Maui is used for water pumping by the Maui County Department of Water and by H.C.&S. These pumps could be | There is absolutely no evidence in the record to support this Finding. Maui Tomorrow provided neither expert witness testimony nor any proof that MECO has had any shortcoming in its examination of alternatives. The example offered (turning off Maui County's water pumps to conserve electricity) is pure speculation and was never the subject of analysis, evaluation, or (most significantly) testimony. | |

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| turned off during certain periods. . . | | |
| 18. The F.E.I.S. analysis fails to differentiate between the need for base load as opposed to peak load. Such a distinction would greatly clarify the role of renewable technologies. | The F.E.I.S. was not required in seeking a boundary amendment from agricultural land use to urban land use. It was, nevertheless prepared and made available in this proceeding. Maui Tomorrow's criticism of the F.E.I.S. is misplaced, because MECO's F.E.I.S. was accepted as adequately fulfilling the requirements of Chapter 343 H.R.S. by the County of Maui, Department of Planning on November 24, 1997. | 4/8/98 transcript, p. 172, lines 10-24; 4/8/98 transcript, p. 189, line 24 - p. 190, line 3; Exhibits C-103 and C-104; MECO Findings 42-45. |
| | There is absolutely no evidence in the record to support this Finding. Maui Tomorrow provided neither expert witness testimony nor any proof that the analysis offered in the F.E.I.S. was flawed by failing to differentiate between the need for base load and peak load. This topic was, in fact, a subject of testimony and an exhibit offered by MECO in analyzing the demand on a power utility over a typical 24-hour period. | 2/27/98 transcript, p. 218, line 13 - p. 220, line 7; Exhibit C-23. |
| F. **MECO'S CALCULATIONS ARE INCOMPLETE AND DECEPTIVE** | | |
| 19. MECO has attempted to justify the need to build another oil burning power plant using economics. They assert that it will be more economical than various other electricity production alternatives (wind, solar, etc.), (F.E.I.S., Pages 3- | Wind and solar energy technologies are as-available technologies (works only when the wind blows and sun shines); therefore, it cannot replace firm, baseloaded technologies. | Exhibit C-23; 2/27/98 transcript, p. 211, line 10 - p. 212, line 1. |

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| 15 to 3-26) | | |
| However, MECO has totally neglected to show the effect of rising fuel prices . . .. If rising fuel costs had been included in their calculations, the total economic impact of rising electricity costs on both Maui residential consumers and businesses would be financially devastating. Consequently, if fuel-oil costs rise, various electricity production alternatives (wind, solar, biomass, etc.) will become more economical and appropriate relative to oil-burning power plants. | Future increases in oil prices is accounted for in MECO's IRP process. A long term fuel price forecast is incorporated in the evaluation of fossil fuel sources in comparison to renewable sources.<br><br>Maui Tomorrow's commentary is directly contradicted by the proof offered by MECO. On an ongoing basis, the Public Utilities Commission requires MECO to examine all technologies (fossil fuel and renewable), as part of the IRP process. The future demand must be met by technologies that can meet various factors (cost, performance or output, environmental factors; stage of maturity, integration with the utility, and others). | Exhibit C-14<br><br>Exhibit C-117; Exhibit C-22; Exhibit C-23. |
| 20. In fact, the calculations included in MECO's F.E.I.S. (on Page 3-24) make a strong case that wind-power is actually much | The F.E.I.S. was not required in seeking a boundary amendment from agricultural land use to urban land use. It was, nevertheless prepared and made available in this proceeding. Maui Tomorrow's criticism of the F.E.I.S. is misplaced, because MECO's F.E.I.S. was accepted as adequately fulfilling the requirements of Chapter 343 H.R.S. by the | 4/8/98 transcript, p. 172, lines 10-24; 4/8/98 transcript, p. 189, line 24 - p. 190, line 3; Exhibits C-103 and C-104; MECO Findings 42-45. |

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| cheaper for Maui than MECO's proposed, oil-burning power plant. Specifically, the F.E.I.S. states that the capital cost for wind generation will be only $13.3 million/10 MW. This cost for a wind facility compares to a higher cost of $17.8 million/10 MW for the oil-burning power plant. (Note: the $17.8 million figure for the oil-burning power plant is derived from a total cost of $417.6 million for a 232 MW facility.) | County of Maui, Department of Planning on November 24, 1997.<br><br>MECO has experience with wind turbines and wind farm development. MECO tested a wind turbine and had a wind energy power purchase contract that was eventually terminated because the developer could not install the project.<br><br>MECO is also in discussions with a wind developer on Maui. | 2/27/98 transcript, p. 208, line 16 - p. 209, line 7<br><br>2/27/98 transcipt, p. 209, line 8 - line 11. |
| Not only will the capital costs, the fuel costs, and the fuel-trucking costs of the wind facility be cheaper than the MECO-proposed, oil-burning power plant, but there would be no fuel cost, no fuel-trucking cost, no air pollution, and, | Renewable energy technologies such as wind farms also have environmental impacts such as excessive noise, visual impacts, bird kills, land intensive needs and others. Maui Tomorrow has failed to offer any proof of the significant costs associated with alternative technologies, including the significant capital investment and maintenance costs assocated with the development and operation of a wind farm; MECO has analyzed alternative technologies, including wind farms, and has concluded that alternative technoligies are not cost effective at this time. MECO's proof on this subject is | F.E.I.S., p. 3-24.; 2/27/98 transcript, p. 215, line 1 - p. 216, line 18; Exhibit C-117. |

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| finally, no loss of prime agricultural land from a wind plant. | unrefuted by any proof entered by Maui Tomorrow and therefore constitutes a clear preponderance of the evidence. | |
| 21. Although MECO's F.E.I.S. (on Page 3-24) indicates that wind power is going to be far cheaper ($13.2 million/10 MW) than fossil fuel, the F.E.I.S. fails to explore this alternative further. | The F.E.I.S. was not required in seeking a boundary amendment from agricultural land use to urban land use. It was, nevertheless prepared and made available in this proceeding. Maui Tomorrow's criticism of the F.E.I.S. is misplaced, because MECO's F.E.I.S. was accepted as adequately fulfilling the requirements of Chapter 343 H.R.S. by the County of Maui, Department of Planning on November 24, 1997. | 4/8/98 transcript, p. 172, lines 10-24; 4/8/98 transcript, p. 189, line 24 - p. 190, line 3; Exhibits C-103 and C-104; MECO Findings 42-45. |
| The F.E.I.S. and MECO's representatives and witnesses have stated that wind power is not economical, "because of the high cost ... (wind power) cannot be considered a feasible alternative to the proposed project." This statement is simply inaccurate, and MECO's own numbers prove it. | A 232 MW wind farm could not be considered a feasible alternative to the proposed project. | F.E.I.S., p. 3-24 - p. 3-25 |
| | There is a limit on the amount of wind energy (about 10 MW) that can be allowed on the utility grid before it starts to cause problems on the utility system. | 2/27/98 transcript, p. 221, line 17 - p. 222, line 9. |
| | Maui Tomorrow has omitted important details from the actual quote contained in the F.E.I.S: "Because of the high cost ***and intermittent nature*** *of this alternative technology, a well as the* ***large land requirements, system limitations, and visual intrusion*** *associated with the* ***vast number of turbines required to produce 232 MW*** *of power, wind energy* cannot be considered a feasible alternative to the proposed project." | F.E.I.S., p. 3-24. |
| 22. The total real costs of the current MECO plan are inaccurately portrayed and calculated. One of | Future increases in oil prices is accounted for in MECO's IRP process. A long term fuel price forecast is incorporated in the evaluation of fossil fuel sources in comparison to renewable sources. | Exhibit C-14. |

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| the significant real costs ignored in the F.E.I.S. for MECO's proposed, oil-burning power plant is fuel cost. (F.E.I.S. Page 3-14.) | This statement is false and these calculations are erroneous. Maui Tomorrow's witness acknowledged that fact during cross-examination. MECO's anticipated rate impact of 1.76 cents per kilowatt *included* fuel, maintenance costs, trucking costs, etc. Maui Tomorrow's witness admitted that such inclusion would change this statement. | 4/24/98 transcript, p. 184, lines 19-25. |
| The following calculations, utilizing the numbers given in the F.E.I.S., give a more accurate picture of the total real costs of this plant: | | |
| $417.6 MILLION FOR THE CAPITAL COSTS PLUS ANNUAL FUEL COSTS: 44 trucks per day * 9,000 gallons/truck ==> 396,000 gallons/day | | |
| 396,000 gallons/day * 365 days ==> 144,500,000 gallons of oil/year | | |
| 144,500,000 gallons/year * $0.60/gallon ==> $86.7 MILLION/YEAR | | |

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| If oil prices rise as predicted, then these fuel costs will rise, and therefore, the cost per year will increase. The public will surely be forced to bear the burden of these hidden cost increases. | | |
| 23. Other major operating costs that are conveniently ignored: road maintenance costs, potential spill clean-up costs, safety costs, pollution monitoring costs, future agricultural opportunity costs (due to the permanent loss of 65.7 acres of "Class A" land), and health costs to residents resulting from fuel oil burning. (F.E.I.S. Page 3-14) | | |
| 24. In the case of renewable electricity production technologies (wind, solar, | Renewable energy technologies such as wind farms also have environmental impacts such as excessive noise, visual impacts, bird kills, land intensive needs and others. | F.E.I.S., p. 3-24. |

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| photovoltaic, biomass, etc.) there will be no potential for oil spills in the ocean or on land, no increase of traffic on Maui's roads and highways causing traffic delays, hazards and increased costs of road repairs and maintenance, no inherent health costs, and most importantly, no loss of prime agricultural land. | | |
| 25. Because of the financial rewards (profits) to be achieved by operating an oil-burning power plant, it is clear why so little effort was made by MECO to give an objective review of the alternatives. | MECO, as part of the IRP process, is required by the PUC to examine all feasible supply-side technologies.<br><br>The investing owner, utility or not, will earn a return on investment, whether implementing conventional or alternate energy technologies (or no investment would be made). Such financial rewards are not unique to utilities who install conventional generation and such return on investment is recognized by the PUC as a necessary component of any rate regulation. | 2/27/98 transcript, p. 198, line 4 - p. 203, line 8. |
| The entirety of the superficial section on non-fossil fuel burning alternatives (F.E.I.S., Pages 3-15 to 3-26) implies that a decision was | Maui Tomorrow has again improperly criticized the analysis of non-fossil fuels that is contained in the F.E.I.S. as superficial. MECO devoted more material in its F.E.I.S. to the analysis of alternative fuels and technologies (pp. 3-15 to 3-33, single spaced) than Maui Tomorrow did in its entire proposed Findings of Fact in this case. The non-fossil fuel analysis that was included in | |

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| made early-on in favor of an oil-burning plant and subsequently MECO did not look seriously at alternative energy sources or combinations. | MECO's F.E.I.S. was a summary of the larger work that was done for the Integrated Resource Planning ("IRP") process. It was not an exhaustive report of the entire analysis involved in that process. Nevertheless, even in summary form, that information is more complete and fact based than anything Maui Tomorrow has offered on the subject.<br><br>Maui Tomorrow's criticisms of the F.E.I.S. are misplaced. The F.E.I.S. was not required in seeking a boundary amendment from agricultural land use to urban land use. It was, nevertheless prepared and made available in this proceeding. MECO's F.E.I.S. was accepted as adequately fulfilling the requirements of Chapter 343 H.R.S. by the County of Maui, Department of Planning on November 24, 1997.<br><br>The F.E.I.S. specifically provides: "Alternative energy sources being developed or in use in the State of Hawaii include biomass conversion, geothermal, hydroelectric, solar, wind, ocean thermal energy conversion, and coal. These technologies are expected to play an increasing role in energy production in the State of Hawaii. However, the timing of their technological development and commercial availability to provide cost-efficient firm generating capacity on the Island of Maui do not make them technically or economically viable options at this time." The F.E.I.S. goes on to discuss Biomass Conversion, Geothermal Energy, Ocean Thermal Energy Conversion, Fuel Cells, Wind Power, Solar Power, Hydroelectric Power, Coal-Based Technologies, Alternative Fuels, Landfill Gas and Digester Gas , Propane, Ethanol, Methanol, Orimulsion, Coal Slurries, Municipal Solid Waste, Naphtha and A-21 in detail. | 4/8/98 transcript, p. 172, lines 10-24; 4/8/98 transcript, p. 189, line 24 - p. 190, line 3; Exhibits C-103 and C-104; MECO Findings 39-42.<br><br>F.E.I.S., p. 3-19. |

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| G. **NEW RESEARCH AND TECHNOLOGY INFORMATION HAS BECOME AVAILABLE SINCE THE COMPLETION OF THE F.E.I.S.** | | |
| **Number skipped by Maui Tomorrow. | | |
| 27. In 1997, the U.S.A. joined with many other industrial nations in Kyoto, Japan in signing a treaty to reduce the levels of $CO_2$ by 7% below 1990 levels by the year 2010. This will help prevent the accumulation of green-house gasses. | This entire finding of fact is premised upon two purported documents, the "Kyoto Agreement" and an article by Richard Heede, which were never entered into evidence before the Land Use Commission nor furnished to the other parties in this matter. Accordingly, the parties were denied the right to cross examination and the opportunity to submit rebuttal evidence to the extent necessary for a full and true disclosure of the facts.<br><br>If the Kyoto Agreement and the Heede article were received into evidence, then MECO has been denied its rights to cross-examination. | "The right to cross-examination attaches when the administrative body receives any testimony or documentary evidence." 2 Am.Jur 2d Administrative Law § 355 (1994). |
| It has been estimated by Mr. Richard Heede that the proposed power plant will add 2.8 billion pounds of $CO_2$ to the earth's atmosphere. This will certainly make it harder to achieve this national and global goal. (Mr. Richard Heede, Point 5) | If the Kyoto Agreement and the Heede article were not received into evidence, then they are outside the record of this proceedings and cannot form the basis of a finding of fact.<br><br>Neither the EPA nor the State of Hawaii regulate $CO_2$.<br><br>If future $CO_2$ regulations are created, then MECO will comply. | 4/24/98 transcript, p. 185, lines 2-7.<br><br>4/24/98 transcript, p. 185, line 8 - p. 186, line 8. |
| 28. Two of the more than twenty particulate | Maui Tomorrow has referenced an article that is not part of the record of this proceeding. Furthermore, the reference to "Inside the EPA" is | 2 Am.Jur.2d, Administrative Law, § 348 (1994) |

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| constituents of diesel exhaust are so damaging to DNA that the National Research Council issued a directive ordering the EPA more stringently to limit PM2.5 emissions. | purely hearsay. Any commentary offered by Maui Tomorrow on the basis of that article constitutes double hearsay and should be disregarded. | ("Although the administrative procedure acts relax the rules of evidence to some degree ... *the proceedings do not become so open as to allow double hearsay*") (emphasis added). |
| These two bad actors are the polycyclical aromatic hydrocarbon compounds 3-Nitrobenzanthrone and 1.8 dinitropyrene. | These statements are not only unsupported by the record, they contradict the testimony of Maui Tomorrow's own witness. Mr. Frye, a witness for Maui Tomorrow, testified that the 3-Nitrobenzanthrone is a "recent discovery by Dr. Suzuki in Japan". | 4/24/98 transcript, p. 59, lines 3-4. |
| | Mr. Frye was not qualified as an expert in toxicology and he does not have a degree in toxicology. Even though his qualifications in the area of toxicology are dubious at best, Mr. Frye did admit that the EPA does not regulate these compounds. "I didn't see anything on this one in particular yet." Mr. Frye acknowledged that this information was based on conjecture and speculation because he agreed that this was emerging information that subject to study by the EPA. Should that EPA study result in requirements for emission control or monitoring for such compounds, then Maui Electric would have to comply with any such new requirements. | 4/24/98 transcript, p. 73, lines 9-11.<br>4/24/98 transcript, p. 62, line 10.<br>4/24/98 transcript, p. 78, line 23 to p. 79, line 14.<br>4/24/98 transcript, p. 80, lines 4-6. |
| They are the most carcinogenic compounds ever examined. Nitrobenzanthrone has the potential to cause 6.3 million mutations per | This is a scientific conclusion which neither Mr. Frye nor any other witness for Maui Tomorrow was qualified to make. There is absolutely no support for this statement in the record and any attempt to lend truth to this statement is pure hearsay upon hearsay.<br><br>These results are not from EPA tests, nor any | |

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| nanomole (one-billionth the gram molecular weight), while a nanomole of 1.8 dinitropyrene can induce 4.78 million mutations in the standard Ames Test. These recent research findings led the EPA to admit that, "diesel exhaust is a probable human carcinogen." (Inside the EPA, March 13, 1998, Vol. 19, n.10 p.3) | other tests sanctioned by the federal government or any other agency charged with the regulation of emission in the United States. These statements are hearsay drawn from reports from Japan. Mr. Frye never produced any exhibits or documentary evidence addressing these tests. Accordingly, they are not properly part of the record and cannot form the basis for a finding of fact because MECO and the other parties were denied an opportunity explore the probative value of this information.<br><br>No evidence was ever offered to support this unsubstantiated statement. There is no support for this proposed Finding anywhere in the record of this proceeding. | 4/24/98 transcript p. 59, lines 3-4. |
| According to table 4-4, page 4-10, Waena F.E.I.S., Nov. '97, maximum fuel flow is 13,306 lbs/hr. for each unit. Maximum possible fuel flow per unit is 116,560,560 lbs/year (13,306 lbs/hour x 24 hours x 365 days). Minus estimated down time (best guess) = 92,000,000 million lbs/year. Fuel + air + water = exhaust. Total annual mass | This is information that was not presented in Mr. Frye's testimony. In fact, when he testified, Mr. Frye declared that "I don't know what the total emissions number is." Maui Tomorrow is improperly attempting to introduce material after the hearings in this matter have been closed. There is no factual basis in the record to support this proposed Finding. | 4/24/98 transcript, p. 78, line 23 - p. 79, line 14. |

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| flow through the turbine = 2,208,000,000 lbs/year. 3-Nitrobenzanthrone is present in diesel exhaust at between 1 and 2 ppm. Given this mass flow of 2,208,000,000 lbs/year/unit, 1 ppm is equal to 2,208 lbs/year and 2 ppm is equal to 4,416 lbs/year. | There is no documentation of the origin of this value, nor any reference to its applicability to exhaust from diesel-fired combustion turbines. This material is not supported by the record in this case.<br><br>Normally, emission factors for air pollutants are expressed as mass of pollutant per unit of fuel burned (pounds of pollutant/MMBtu). Maui Tomorrow has assumed that the new compounds are particulates. However, they use a stack gas concentration (1 to 2 ppm) to determine the emission rate. If the compound is a particulate, then the ppm number is not appropriate: "ppm" values are only valid for gases. If the compounds are a gas, then the application of the 0.5% cumulatively remaining on the Island Maui is invalid, because that modeling is for particulates.<br><br>Maui Tomorrow's calculations are contradictory. Maui Tomorrow assumes that the pollutants in question are both a gas and a particulate. A substance cannot be both. Thus, their calculations are not correct. The following gives details on this finding.<br>The basis of Maui Tomorrow's calculations is a stack gas concentration "3-Nitrobenzanthrone is present in the diesel exhaust at between 1 and 2 ppm" (2nd paragraph, p. 11). "ppm" is parts-per-million and it is the ratio of the volume of the gas in question to the total volume of stack gas. Because it refers to volumes of *gas*, it can only apply to gasses. "ppm" *does not apply to particulates*. Yet Maui Tomorrow does consider the compounds to be particulates. (Maui Tomorrow's | 4/9/98 transcript, p. 23, lines 2-22. |

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| | Findings: the 1st 3 sentences on Item 28, p. 11.) | |
| According to Mr. Clary statements in the F.E.I.S. and in testimony, ½ percent, plus or minus a factor of two, of the exhaust plume will remain on Maui. ½ percent of 2,208 lbs/year/unit = 11.04 lbs/unit year. ½ percent of 4,416 lbs/year/unit = 22.08 lbs/unit/year. Therefore the total range for the 3-Nitrobenzanthrone component of the exhaust remaining on Maui, according to Mr. Clary's model, is between 5.52 lbs/year/unit and 44.16 lbs/year/unit. Since 3-Nitrobenzanthrone is measured in nanomoles, a nanomole being one-billionth the gram molecular weight, there are 9.08 billion | This is incorrect. Mr. Clary's testimony referred not to the exhaust plume remaining on Maui, but to the fact that cumulatively, less than one-half of one percent of the particulates from the exhaust plume would settle anywhere on Maui.<br><br>Maui Tomorrow has once again failed to distinguish between gas and particulates. Accordingly, this proposed Finding is not only unsupported by any evidence in the record, it is simply incorrect. Maui Tomorrow's entire calculation, as well as the associated conclusion, may therefore be disregarded as premised on the mistaken notion that the pollutants in question are both a gas *and* a particulate. A substance cannot be both. | 4/9/98 transcript, p. 23, lines 2-22 |

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| nanomoles in 5.5 lbs and 72.64 billion nanomoles in 44.16 lbs. of 3-Nitrobenzanthrone. As little as one nanomole can cause more than 6 million mutations to the DNA. 1.8 dinitropyrene would be emitted in approximately the same quantities. The total quantity of the two most carcinogenic substances known to man which would actually remain on Maui is somewhere between 10 and 88 lbs. every year per unit. | | |
| H. **MAUI'S ECONOMY COULD BE NEGATIVELY AFFECTED** | | |
| 29. The employment figures used in the F.E.I.S. are very one-sided. They merely mention the added employment resulting from the construction and operation of the oil-burning power plant and then the | This, again, is a misplaced criticism of the F.E.I.S. It is also completely without support in the record. Maui Tomorrow provided neither expert witness testimony nor any proof that there will be greater employment or more development from other technologies. Maui Tomorrow has failed to cite any testimony, analysis, or other evidence in the record to support this finding because there is none. | |

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| F.E.I.S. argues that this will be a help to Maui's economy and development.<br><br>The deception lies in the fact that there will be greater employment and more development from alternative technologies. | | |
| 30. This oil-burning plant will affect Maui's business climate. The economy of the State of Hawai'i has been suffering for many years. The effects are well known and are being aggressively addressed at the state legislature. But many of the causes of the slow-down result from reasons beyond the range of actions which the legislature can take. These primarily lie in the high costs of doing business in Hawai'i. | This proposed Finding is nothing more than opinion and is not supported by any analysis, facts, or evidence in the record. Most renewable energy technologies are not cost-effective at this time. Exhibit C-117 shows a cost comparison of these renewable energy technologies with fossil-fueled technologies. Wind energy costs are close with fossil-fueled technologies; however, wind is an as-available technology (works only when the wind is blowing). The other renewable energy technologies are more expensive than fossil-fueled technologies. If MECO were to install the more expensive renewable energy technologies, the Maui Electric rates would need to be increased by more than the amount anticipated to be caused by the proposed project. This also would not be healthy for local businesses. | Exhibit C-117; 2/27/98 transcript, p. 215, line 1 - p. 216, line 18. |

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| For example, high costs of shipping goods to Hawai'i (Matson Company makes an annual profit of about $70,000,000 per year), high cost of gasoline which results in massive flows of dollars out of the state to non-Hawai'i oil companies. | There is absolutely no evidence in the record to support this Finding. Maui Tomorrow provided neither expert witness testimony nor any proof of the profitability of Matson (not that it is even relevant to this proceeding) or the alleged "flows of dollars out of the State to non-Hawai'i oil companies." | |
| If the power plant is approved the costs for businesses on Maui may unnecessarily rise to levels that will raise business expenses, may kill all profits, and probably will force businesses now having difficulties into bankruptcy.<br><br>This will all be the result of rising fuel oil costs which will be passed on directly to businesses. Several alternative energy sources have NO fuel costs. | No authority has been offered for this extreme conclusion which finds no support whatsoever in the record of this proceeding. | |

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| 31. Other areas of the nation which do use alternative energy technologies will NOT be forced to incur business expenses resulting from rising fuel costs. Maui and all of Hawai'i will be at a competitive disadvantage if we do not wean ourselves from reliance on burning oil. | There is absolutely no evidence in the record to support this Finding. Maui Tomorrow provided neither expert witness testimony nor any proof of the experiences of "other areas of the nation" nor any purported competitive disadvantage that could result "if we do not wean ourselves from reliance on burning oil."<br><br>Most renewable energy technologies are not cost-effective at this time. Exhibit C-117 shows a cost comparison of these renewable energy technologies with fossil fueled technologies. Wind energy costs are close with fossil fueled technologies; however, wind is an as-available technology (works only when the wind is blowing). The other renewable energy technologies are more expensive than fossil-fueled technologies. If MECO were to install the more expensive renewable energy technologies, the Maui Electric rates would be increased more significantly than they will be by the proposed project. This also would not be healthy for local businesses. | Exhibit C-117; 2/27/98 transcript, p. 215, line 1 - p. 216, line 18. |
| | Other areas of the mainland have different systems, their systems are larger with interconnection from other states, and alternate energy is only a small fraction of the generation capacity (alternate energy is not the exclusive source of energy). | 2/27/98 transcript, p. 211, line 10 - p. 212, line 1. |
| 32. Some sense of how the average Maui household's finances would be affected by this power plant can be seen in the following calculations: | MECO's anticipated rate impact of 1.76 cents per kilowatt included fuel, maintenance costs, trucking costs, etc. During cross-examination, Maui Tomorrow's witness admitted that such inclusion would change this statement. This proposed finding is clearly erroneous, by Maui Tomorrow's own admission.<br><br>Accordingly, the calculations in this proposed finding may be disregarded in their entirety. | 4/24/98 transcript, p. 184, lines 19-25. |

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| The F.E.I.S. on Page 3-14 shows 1.76 cents per KWH increase just for the capital cost construction of the power plant:<br><br>For average household using 6,500 KWH year ==> +$114/yr./ household<br><br>Total trucking costs (in F.E.I.S. Appendix A) in present prices $9 million/100,000 households ==> +$90/yr./ household<br><br>Fuel costs in 1998 prices $86.7 million/100,000 households ==> +$867/yr./ household | | |
| 33. There is no discussion of potential disruptions to the island's oil supply security (e.g. wars, shipping strikes, oil boycotts). | There is absolutely no evidence in the record to support this Finding. Maui Tomorrow provided neither expert witness testimony nor any proof of possible disruptions to oil supply. | |
| 34. The effects on traffic are | There is absolutely no evidence in the record to support this Finding. Maui Tomorrow provided | |

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| understated because only intersections were discussed. Road traffic has been ignored despite the fact that there will be 6 trucks per hour during peak traffic ==> one big, heavy, slow-moving truck every 10 minutes going up-hill on a highway that is seeing increased traffic use. There is little opportunity to pass on this narrow highway. | neither expert witness testimony nor any proof of the potential traffic impacts.<br><br>There is no evidence to suggest that fuel trucks along Pulehu Road would be any more "slow-moving" than the rest of the traffic flow. | |
| 35. There will be higher road costs to support the heavy, 9,000 gallon tanker trucks. The added costs to maintain State and County roads are not provided for. | There is absolutely no evidence in the record to support this Finding. Maui Tomorrow provided neither expert witness testimony nor any proof of road cost impacts. | |
| I. **THIS PROJECT DOES NOT HAVE I.R.P. APPROVAL** | | |
| 36. A power plant such as the one being proposed by MECO should be part of an approved Integrated Resource Plan | The power plant is part of MECO's approved IRP Plan. | Exhibit C-116; HPUC D&O No. 14707, Docket No. 7258, dated May 29, 1996, p. 35; "MECO's IRP and action plans are |

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| (I.R.P.). Approval for a power plant should come from the Public Utilities Commission (P.U.C.), PRIOR to approval by the L.U.C. | | approved"; E. Ifuku Summary Testimony, item 13. |
| | IRP is an ongoing process which is approved by the PUC with a formal cycle for resubmissions of the comprehensive plan with annual reviews and updates. | 2/27/98 transcript, p. 149, line 25 - p. 150, line 11. |
| | This IRP process seeks to ensure reliable electric service to MECO's customers, including the generation planning criteria, the mix of supply side resource options both renewable and conventional options. | 2/27/98 transcript, p. 152, lines 13-18; p. 153, lines 12-19. |
| | The generating capacity and combustion technology that has been proposed for the Waena Generating Station was included in the MECO's 1993 submission to the PUC. | Exhibit C-116, p. 16. |
| 37. An Integrated Resource Plan (I.R.P.) for this power plant has yet to be approved by the Public Utilities Commission (P.U.C.). To date, the P.U.C. has only given permission to purchase the 65.7 acres. (F.E.I.S., Page 2-9) | MECO's IRP was approved by the PUC on May 26, 1996. | Exhibit C-116; HPUC D&O No. 14707, Docket No. 7258, dated May 29, 1996, p. 35: "MECO's IRP and action plans are approved"; Exhibit D-3, item 13. |

## J. MECO'S MOTIVATION TO BUILD A COSTLY FUEL-BURNING POWER PLANT IS AGAINST THE INTERESTS OF THE GENERAL PUBLIC

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| 38. Because of the | There is absolutely no evidence in the record to | |

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| way the P.U.C. allows utilities to set rates, it is MORE advantageous (PROFITABLE) for MECO to build a costly fuel-burning power plant than a less expensive alternative energy facility. This is because the P.U.C. allows the utility to get a certain rate of return on its capital costs. The bigger the plant; the higher the profits.<br><br>Furthermore, fuel costs can be directly passed on to the customers (the residents and businesses of Maui). Therefore, from MECO's point of view, there is little incentive to get away from an oil-burning power plant, and a considerable advantage to propose, construct and operate such an oil-burning power plant. | support this Finding. Maui Tomorrow provided neither expert witness testimony nor any proof of the PUC's utility rate approval procedures or profitability. This finding is pure speculation and has no basis in the evidence presented to the Land Use Commission.<br><br>Most renewable energy technologies are not cost-effective at this time. Exhibit C-117 shows a cost comparison of these renewable energy technologies with fossil-fueled technologies. Wind energy costs are close with fossil-fueled technologies; however, wind is an as-available technology (works only when the wind is blowing). The other renewable energy technologies are more expensive than fossil-fueled technologies. If MECO were to install the more expensive renewable energy technologies, the Maui electric rates would have to be increased by more than will be needed for the proposed Waena Generating Station. This also would not be healthy for local businesses. | Exhibit C-117; 2/27/98 transcript, p. 215, line 1 - p. 216, line 18. |

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| 39. It seems that MECO wants this oil-burning power plant as long as the people and businesses of Maui pay for the rising fuel costs and all the other hidden real costs incurred. If MECO were forced to absorb the additional fuel and other real costs over the next thirty years, MECO would probably initiate more effective demand-side management programs, put in wind mills, or develop some other alternative energy technology. | "It seems . . ." reflects that this proposed finding is pure speculation and is not supported by the evidence before the Land Use Commission. Maui Tomorrow provided neither expert witness testimony nor any proof of the decision making process undertaken by MECO nor any intent by MECO to do anything that was not in the best interests of its customers.<br><br>Most renewable energy technologies are not cost-effective at this time. Exhibit C-117 shows a cost comparison of these renewable energy technologies with fossil-fueled technologies. Wind energy costs are close with fossil-fueled technologies; however, wind is an as-available technology (works only when the wind is blowing). The other renewable energy technologies are more expensive than fossil-fueled technologies. If MECO were to install the more expensive renewable energy technologies, the Maui Electric rates would have to be increased by more than will be needed for the proposed Waena Generating Station. This also would not be healthy for local businesses.<br><br>MECO has a greater financial incentive to pursue the implementation of demand-side management programs than through building power plants because of the full expense cost recovery, lost margin and shareholder incentive mechanism. | Exhibit C-117; 2/27/98 transcript , p. 215, line 1 - p. 216, line 18.<br><br>2/27/98 transcript, p. 179, line 15 - p. 180, line 11. |

## III. CONCLUSIONS OF LAW

| MAUI TOMORROW'S COL | MECO'S ANALYSIS, COMMENTS, OBJECTIONS | CITATION/ AUTHORITY |
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| 1. The Land Use Commission should deny this petition because the Constitution of the State of Hawai'i in Article XI Conservation | This Conclusion is contrary to law, is not supported by the evidence or testimony presented at the hearings, nor the facts found by the Land Use Commission. This conclusion merely recites, in part, a provision from the Constitution of the State of Hawaii. It fails to relate how the proposed Waena Generating Station would violate the Constitution of the State of Hawaii, a | |

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| and Development of Resources states in Section 1 "for the benefit of present and future generations, the State ... shall conserve and protect Hawai'i's natural beauty and all natural resources, including land, water, air, minerals and energy sources, and shall promote the development and utilization of these resources in a manner consistent with their conservation and furtherance of self-sufficiency of the state...." | conclusion which is without any basis in fact. | |
| 2. The Land Use Commission should deny this petition because the Constitution of the State of Hawai'i, in Article XI states in Section 3, dealing with Agricultural Lands that "The State shall conserve and protect agricultural lands, promote | This Conclusion is contrary to law, is not supported by the evidence or testimony presented at the hearings, nor the facts found by the Land Use Commission. This conclusion merely recites, in part, a provision from the Constitution of the State of Hawaii. It fails to relate how granting the requested boundary amendment would violate the Constitution of the State of Hawaii, a conclusion which is without any basis in fact. | |

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| diversified agriculture, increase agricultural self-sufficiency and assure the availability of agricultural suitable lands. The Legislature shall provide standards and criteria to establish the foregoing. Lands identified by the State as important agricultural lands needed to fulfill the purposes above shall not be reclassified by the State or re-zoned ... without meeting the standards and criteria established by the legislature ..." | While the lands involved in the present petition have been identified as "prime" agricultural lands, they are not "important agricultural lands" because the conversion of 65.7 acres is an insignificant amount, especially in light of the 1400 acres that will be added to agricultural production. The Department of Agriculture of the State of Hawaii does not object to the proposed boundary amendment.<br><br>This provision from the Constitution of the State of Hawaii expressly recognizes that a petition for boundary amendment from agricultural land use to urban land use should be granted if the standards and criteria established by the legislature (HRS § 205-1 et seq. and LUC Rules § 15-15-18 and § 15-15-77) have been met. | MECO Findings 70, 71, 90-97.<br><br>MECO Findings 85, Exhibit C-85.<br><br>MECO Conclusions 2-19. |
| 3. The Land Use Commission should deny this petition because H.R.S. 205-4(h) states that "No amendment of a district boundary shall be approved unless the commission finds upon the clear preponderance of | This Conclusion is contrary to law, is not supported by the evidence or testimony presented at the hearings, nor the facts found by the Land Use Commission. This conclusion merely recites, in part, a provision from Hawaii Revised Statutes. It fails to relate how granting the requested boundary amendment would violate the recited statute, a conclusion which is without any basis in fact.<br><br>The evidence and testimony presented to the Land Use Commission, as well as the facts found by the Land Use Commission, establish by a | |

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| the evidence that the proposed boundary is ... consistent with the policies and criteria established pursuant to sections 205-16 and 205-17." | clear preponderance of the evidence that the proposed boundary amendment is proper because it is consistent with the policies and criteria established in Sections 205-16 (Compliance with the Hawaii State Plan) and 205-17 (Land Use Commission decision making criteria), HRS. The Office of Planning of the State of Hawaii supports the petition and the petition satisfies the decision making criteria of the Land Use Commission. | 4/23/98 transcript, p. 132, line 14 - p. 135, line 12 and p. 142, lines 4-19; Testimony of the Office of Planning in Support of the Petition, filed on or about February 12, 1998; MECO Findings 82, 83, 185-194. |
| 4. The Land Use Commission should deny this petition because H.R.S. 205-17 indicates the Land Use Commission decision making criteria. It requires that the Land Use Commission "in its review of any petition for reclassification for district boundaries pursuant to this chapter (that) the Commission shall specifically consider the following:<br><br>(1) The extent to which the proposed reclassification | This Conclusion is contrary to law, is not supported by the evidence or testimony presented at the hearings, nor the facts found by the Land Use Commission. This Conclusion merely recites, in part, a provision from Hawaii Revised Statutes. It fails to relate how granting the requested boundary amendment would violate the recited statute, a conclusion which is without any basis in fact.<br><br>In fact, each of the recited criteria have been specifically addressed by the testimony and evidence offered by MECO at the hearings. Most, if not all, of that evidence was never refuted. Accordingly, MECO has established by a clear preponderance of the evidence that the petition should be granted because:<br>(1) The proposed reclassification conforms to the Hawaii State Plan and the applicable functional plan. The petition has the support of the State of Hawaii Office of Planning. | 4/23/98 transcript, p. 132, line 14 - p. 135, line 12 and p. 142, lines 4-19; Testimony of the Office of Planning in Support of the Petition, filed |

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| conforms to the applicable goals, objectives, and policies of the Hawai'i state plan and relates to the applicable priority guidelines of the Hawai'i state plan and the adopted functional plans. | (2) The proposed reclassification conforms to the standards for urban districts. | on or about February 12, 1998; MECO Findings 82, 83, 185-194.<br><br>Petition, p. 10; 4/8/98 transcript, p. 181, line 1 - p. 185, line 22; Exhibits C-108 and C-109; MECO Findings 174-184. |
| (2) The extent to which the proposed reclassification conforms to the applicable district standards; and<br><br>(3) The impact of the proposed reclassification on the following areas of state concern: . . .<br>(C) Maintenance of other natural resources relevant to Hawai'i's economy including, but not limited to, agricultural resources; | (3)(C) The proposed reclassification will have no significant adverse impact on natural resources including agricultural resources. The Department of Agriculture of the State of Hawaii does not object to the proposed boundary amendment. | 4/8/98 transcript, p. 186, line 1 - p. 187, line 3; Exhibits C-85 and C-109; MECO Findings 85, 118-138; MECO Conclusion 16. |
| 5. The Land Use Commission should deny this petition because The Hawai'i State | This Conclusion is contrary to law, is not supported by the evidence or testimony presented at the hearings, nor the facts found by the Land Use Commission. This conclusion merely recites, in part, a provision from the Hawaii State | |

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| General Plan states in H.R.S. 226-18<br><br>"Objective and policies for facility systems -- energy/ telecommunications (a) planning for the State's facility systems with regard to energy/ telecommunications shall be directed towards the achievement of the following objectives:<br><br>(2) Increased energy self-sufficiency where the ratio of indigenous to imported energy use is increased; and<br><br>(3) Greater energy security in the face of threats to Hawai'i's energy supplies and systems.<br><br>(b) To further achieve the energy objectives, it shall be the policy of this State to:<br><br>(C) Promote | General Plan. It fails to relate how granting the requested boundary amendment would violate the recited portion of the Hawaii State Plan, a conclusion which is without any basis in fact.<br><br>Each of the recited provisions has been specifically addressed by the testimony and evidence offered by MECO at the hearings. Most, if not all, of that evidence was never refuted. MECO has established by a clear preponderance of the evidence that the proposed reclassification conforms to the Hawaii State Plan and the applicable functional plan. The petition has the support of the State of Hawaii Office of Planning.<br><br>The proposed boundary amendment is in conformity with Section 226-18 of the Hawaii State Plan, "Objectives and Policies for Facility Systems Energy/ Telecommunication," which states:<br><br>a. Planning for the State's facility systems with regard to energy shall be directed towards the achievement of the following objectives:<br><br>1. Dependable, efficient, and economical statewide energy systems capable of supporting the needs of the people;<br><br>2. Increased energy self-sufficiency where the ratio of indigenous to imported energy use is increased; and<br><br>3. Greater energy security on the face of threats to Hawaii's energy supplies and systems. | 4/23/98 transcript, p. 132, line 14 - p. 135, line 12 and p. 142, lines 4-19; Testimony of the Office of Planning in Support of the Petition, filed on or about February 12, 1998, F.E.I.S. pp. 5-12 to 5-13; MECO Findings 82, 83, 185-194. |

| MAUI TOMORROW'S COL | MECO'S ANALYSIS, COMMENTS, OBJECTIONS | CITATION/ AUTHORITY |
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| prudent use of power and fuel supplies through conservation measures including:<br><br>(A) Development of cost effective demand side management programs ...<br><br>(C) Adoption of energy efficient practices and technologies.<br><br>(4) Insure that the development or expansion of power systems and sources adequately consider environmental, public health, and safety concerns, and resource limitations. | | |
| 6. The Land Use Commission should deny this petition because the current State Energy Functional Plan identifies formal energy objectives based on the statutory objectives. These | This Conclusion is contrary to law, is not supported by the evidence or testimony presented at the hearings, nor the facts found by the Land Use Commission. This conclusion merely recites, in part, a provision from the State Energy Functional Plan. It fails to relate how granting the requested boundary amendment would violate the recited portion of the State Energy Functional Plan, a conclusion which is without any basis in fact. | |

| MAUI TOMORROW'S COL | MECO'S ANALYSIS, COMMENTS, OBJECTIONS | CITATION/ AUTHORITY |
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| are: "moderate the growth in energy demand through conservation and energy efficiency; displace oil and fossil fuels through alternate and renewable resources; support and develop an integrated approach to energy development and management." | Each of the recited provisions has been specifically addressed by the testimony and evidence offered by MECO at the hearings. Most, if not all, of that evidence was never refuted. MECO has established by a clear preponderance of the evidence that the proposed reclassification conforms to the State Energy Functional Plan. The petition has the support of the State of Hawaii Office of Planning.<br><br>The proposed boundary amendment is in conformity with Section 226-18 of the Hawaii State Plan, "Objectives and Policies for Facility Systems Energy/ Telecommunication," which states:<br><br>a. Planning for the State's facility systems with regard to energy shall be directed towards the achievement of the following objectives:<br><br>1. Dependable, efficient, and economical statewide energy systems capable of supporting the needs of the people;<br><br>2. Increased energy self-sufficiency where the ratio of indigenous to imported energy use is increased; and<br><br>3. Greater energy security on the face of threats to Hawaii's energy supplies and systems.<br><br>While MECO believes that the clear preponderance of the evidence supports the conclusion that the proposed boundary amendment is in complete conformity with the State Energy Functional Plan, it must be noted that "State Functional Plans still are not to be interpreted as law or statutory mandates, nor do they mandate County or private sector actions." | 4/23/98 transcript, p. 132, line 14 - p. 135, line 12 and p. 142, lines 4-19; Testimony of the Office of Planning in Support of the Petition, filed on or about February 12, 1998, F.E.I.S. pp. 5-12 to 5-13; MECO Findings 82, 83, 185-194.<br><br>4/23/98 transcript, p. 138, lines 4-24 and p. 142, lines 12-19; State Energy Functional Plan, p. 2. |
| 7. The Land Use | This Conclusion is contrary to law, is not | |

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| Commission should deny this application because a major theme contained within the objectives of the Maui County General Plan, is to: "Protect Maui County's agricultural land and rural identity." (F.E.I.S. Section 5.7 on Pp. 5-18) | supported by the evidence or testimony presented at the hearings, nor the facts found by the Land Use Commission. This conclusion is pure hearsay from Maui Tomorrow about what Maui Tomorrow believes is a "theme" of the Maui County General Plan. This Conclusion fails to relate how granting the requested boundary amendment fails to conform to a "major theme" of the Maui County General Plan, if any such "theme" exists.<br><br>The location of the Waena Generating Station in a lightly traveled area of Maui remote from existing resdiential and related urban development and in proximity to similar existing heavy industrial uses will serve to protect and enhance Maui County's agricultural land and rural identity.<br><br>The Petition conforms to the Maui County General Plan and has the support of the Maui County Planning Department. | 4/8/98 transcript, p. 157, line 23 - p. 158, line 1; 4/23/98 transcript, p. 69, line 6 - p. 72, line 3; Written Testimony of the Maui Planning Department, filed on or around January 26, 1998; pp. 9-12; Petition, pp. 23-24; MECO Findings 79-81. |
| | MECO meets each of the policies "a" - "f" of the Maui County General Plan Energy Policy. MECO: (a) Encourages programs to test the feasibility of alternative sources of energy production; (b) Maintains an ongoing assessment of the County's energy resources, as well as an assessment of alternative sources in the context of a comprehensive integrated | 2/27/98 transcript, p. 154, line 7 - p. 156, line 21 and p. 199, line 14 - p. 223, line 7; F.E.I.S. pp. 3-16 to 3-18; Exhibits C-13, C-20, C-21, C-23, and |

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| | resource plan; (c) Publicizes the need to conserve energy; (d) Creates incentive programs to encourage the use of solar heaters and other energy saving building design concepts and devices; (e) Seeks to incorporate energy-saving building design concepts and devices in government buildings; (f) Encourages the incorporation of energy-saving building design concepts and devices in all new private and public developments by providing energy efficient urban design guidelines and amendments to the Maui County Uniform Building Code.<br><br>Because MECO meets all of the policies of the objectives, MECO cannot be in nonconformance with the objective. MECO has proven, by a clear preponderance of the evidence, that the proposed boundary amendment is in conformity with the goals, objectives, "themes", and express provisions of the Maui County General Plan. | C-117. |
| 8. The Land Use Commission should deny this petition because a major objective of the Maui County General Plan within the land use section of the plan, Objective 3, Policy A is to "Protect prime agricultural lands from competing non-agricultural land uses." (F.E.I.S. Section 5.7 on Page 5-18) | This Conclusion is contrary to law, is not supported by the evidence or testimony presented at the hearings, nor the facts found by the Land Use Commission. This conclusion is pure hearsay from Maui Tomorrow about what Maui Tomorrow believes is an objective of the Maui County General Plan. This Conclusion fails to relate how granting the requested boundary amendment fails to conform to a "major objective" of the Maui County General Plan, if any such objective exists.<br><br>The Petition conforms to the Maui County General Plan and has the support of the Maui County Planning Department. | 4/8/98 transcript, p. 157, line 23 - p. 158, line 1; 4/23/98 transcript, p. 69, line 6 - p. 72, line 3; Written Testimony of |

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| | | the Maui Planning Department, filed on or around January 26, 1998; pp. 9-12; Petition, pp. 23-24; MECO Findings 79-81. |
| | MECO meets each of the policies "a" - "f" of the Maui County General Plan Energy Policy. MECO: (a) Encourages programs to test the feasibility of alternative sources of energy production; (b) Maintains an ongoing assessment of the County's energy resources, as well as an assessment of alternative sources in the context of a comprehensive integrated resource plan; (c) Publicizes the need to conserve energy; (d) Creates incentive programs to encourage the use of solar heaters and other energy saving building design concepts and devices; (e) Seeks to incorporate energy-saving building design concepts and devices in government buildings; (f) Encourages the incorporation of energy-saving building design concepts and devices in all new private and public developments by providing energy efficient urban design guidelines and amendments to the Maui County Uniform Building Code.<br><br>Because MECO meets all of the policies of the objectives, MECO cannot be in nonconformance with the objective. MECO has proven, by a clear preponderance of the evidence, that the proposed boundary amendment is in conformity with the goals, objectives, and express provisions of the Maui County General Plan. | 2/27/98 transcript, p. 154, line 7 - p. 156, line 21 and p. 199, line 14 - p. 223, line 7; F.E.I.S. pp. 3-16 to 3-18; Exhibits C-13, C-20, C-21, C-23, and C-117. |
| 9. The Land Use Commission should deny this petition because a | This Conclusion is contrary to law, is not supported by the evidence or testimony presented at the hearings, nor the facts found by the Land Use Commission. This conclusion is pure | |

| MAUI TOMORROW'S COL | MECO'S ANALYSIS, COMMENTS, OBJECTIONS | CITATION/ AUTHORITY |
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| major objective of the Maui County General Plan within the land use section of the plan, Objective 3, Policy D is to "Discourage the conversion of productive or potentially productive agricultural lands to non-agricultural purposes." (F.E.I.S. Section 5.7 on Page 5-18) | hearsay from Maui Tomorrow about what Maui Tomorrow believes is an objective of the Maui County General Plan. This Conclusion fails to relate how granting the requested boundary amendment fails to conform to a "major objective" of the Maui County General Plan, if any such objective exists. | |
| | The Petition conforms to the Maui County General Plan and has the support of the Maui County Planning Department. | 4/8/98 transcript, p. 157, line 23 - p. 158, line 1; 4/23/98 transcript, p. 69, line 6 - p. 72, line 3; Written Testimony of the Maui Planning Department, filed on or around January 26, 1998; pp. 9-12; Petition, pp. 23-24; MECO Findings 79-81. |
| | MECO meets each of the policies "a" - "f" of the Maui County General Plan Energy Policy. MECO: (a) Encourages programs to test the feasibility of alternative sources of energy production; (b) Maintains an ongoing assessment of the County's energy resources, as well as an assessment of alternative sources in the context of a comprehensive integrated resource plan; (c) Publicizes the need to conserve energy; (d) Creates incentive programs to encourage the use of solar heaters and other energy saving building design concepts and devices; (e) Seeks to incorporate energy-saving building design concepts and devices in government buildings; (f) Encourages the incorporation of energy-saving building design concepts and devices in all new private and public developments by providing energy efficient urban design guidelines and | 2/27/98 transcript, p. 154, line 7 - p. 156, line 21 and p. 199, line 14 - p. 223, line 7; F.E.I.S. pp. 3-16 to 3-18; Exhibits C-13, C-20, C-21, C-23, and C-117. |

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| | amendments to the Maui County Uniform Building Code.<br><br>Because MECO meets all of the policies of the objectives, MECO cannot be in nonconformance with the objective. MECO has proven, by a clear preponderance of the evidence, that the proposed boundary amendment is in conformity with the goals, objectives, and express provisions of the Maui County General Plan. | |
| 10. Significantly, MECO included in their application for a boundary change some of the less relevant sections of the Maui County General Plan. However, MECO omitted the relevant energy section. The Land Use Commission should deny this application because the Maui County General Plan clearly states in Energy Objective #1: "To make Maui County more self-sufficient in its need for non-renewable energy and more efficient in its use of energy." | The Maui County Community Plan Energy Objective states that the County should: "minimize noise, water and air pollution from industrial uses, electric power generating facilities, and wastewater treatment plants." Plan, design, and construct off-site public infrastructure improvements in anticipation of residential, commercial and industrial developments defined in the Community Plan;" and an infrastructure goal that states: Timely and environmentally sound planning, development and maintenance of infrastructure systems which serve to protect and preserve the safety and health of the region's residents, commuters, and visitors."<br><br>During the site selection and IRP processes, MECO considered the use of alternative energies, including biomass, wind, and solar power. However, these alternative energy sources currently are not economically feasible to provide baseload energy to the island of Maui. Because the purpose and need for the proposed Waena Generating Station is to provide for the increasing demand for energy forecast on the island of Maui, the energy the facility provides will allow the County to implement many of the objectives and recommendations of the Community Plan, specifically those pertaining to supporting economic growth and the provision of | F.E.I.S. Section 5, pp. 21-23. |

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| | health and safety services. | Exhibit C-117; 2/27/98 transcript p. 215, line 1 - p. 216, line 18; Exhibit C-103; F.E.I.S., pp. 3-19 - 3-33. |
| 11. In both the approved and newly proposed versions of the Wailuku-Kahului Community Plans (F.E.I.S. Section 5.8.1 on Page 5-20), (F.E.I.S. Section 5.8.2 on Page 5-21) the recommendations pertaining to energy planning are clear and consistent.<br><br>The Land Use Commission should deny this petition because both of these plans state recommendations to "Promote the use of alternative energy sources, such as biomass, wind, and solar." (Page 5-21)<br><br>(It should be noted that this is the ONLY statement | This Conclusion is contrary to law, is not supported by the evidence or testimony presented at the hearings, nor the facts found by the Land Use Commission. This Conclusion fails to relate how granting the requested boundary amendment fails to conform to the Wailuku-Kahului Community Plan, if any such non-conformity exists.<br><br>The Petition conforms to the Wailuku-Kahului Community Plans and has the support of the Maui County Planning Commission.<br><br>Most renewable energy technologies are not cost-effective at this time. Exhibit C-117 shows a cost comparison of the renewable energy technologies with fossil fueled technologies. Wind energy costs are close with fossil fueled technologies, but wind is an as-available technology (i.e., works only when the wind is blowing). The other renewable energy technologies are more expensive than fossil-fueled technologies | 4/8/98 transcript, p. 157, line 23 - p. 158, line 1; 4/23/98 transcript, p. 69, line 6 - p. 72, line 3; Written Testimony of the Maui Planning Department, filed on or around January 26, 1998; pp. 9-12; Petition, pp. 23-24; MECO Findings 79-81.<br><br>Exhibit C-117; 2/27/98 transcript, p. 215, line 1 - p. 216, line 18.<br><br>Exhibit C-103. |

| MAUI TOMORROW'S COL | MECO'S ANALYSIS, COMMENTS, OBJECTIONS | CITATION/ AUTHORITY |
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| relating to energy cited in the two Wailuku-Kahului Community Plans and it clearly indicates that within the Wailuku-Kahului region, alternate energy resources are preferred.) | Alternative energy sources being developed or in use in the State of Hawaii include biomass conversion, geothermal, hydroelectric, solar, wind, ocean thermal energy conversion, and coal. These technologies are expected to play an increasing role in energy production in the State of Hawaii. However, the timing of their technological development and commercial availability to provide cost-efficient firm generating capacity on the Island of Maui do not make them technically or economically viable options at this time. The F.E.I.S. discusses Biomass Conversion, Geothermal Energy, Ocean Thermal Energy Conversion, Fuel Cells, Wind Power, Solar Power, Hydroelectric Power, Coal-Based Technologies, Alternative Fuels, Landfill Gas and Digester Gas, Propane, Ethanol, Methanol, Orimulsion, Coal Slurries, Municipal Solid Waste, Naphtha and A-21. | F.E.I.S., pp. 3-19 to 3-33. |
| | MECO meets each of the policies "a" - "f" of the Wailuku-Kahului Community Plans Energy Policy. MECO: (a) Encourages programs to test the feasibility of alternative sources of energy production; (b) Maintains an ongoing assessment of the County's energy resources, as well as an assessment of alternative sources in the context of a comprehensive integrated resource plan; (c) Publicizes the need to conserve energy; (d) Creates incentive programs to encourage the use of solar heaters and other energy saving building design concepts and devices; (e) Seeks to incorporate energy-saving building design concepts and devices in government buildings; (f) Encourages the incorporation of energy-saving building design concepts and devices in all new private and public developments by providing energy efficient urban design guidelines and amendments to the Maui County Uniform Building Code. | 2/27/98 transcript, p. 154, line 7 - p. 156, line 21 and p. 199, line 14 - p. 223, line 7; F.E.I.S. pp. 3-16 to 3-18; Exhibits C-13, C-20, C-21, C-23, and C-117. |

| MAUI TOMORROW'S COL | MECO'S ANALYSIS, COMMENTS, OBJECTIONS | CITATION/ AUTHORITY |
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| | Because MECO meets all of the policies of the objectives, MECO cannot be in nonconformance with the Wailuku-Kahului Community Plan. MECO has proven, by a clear preponderance of the evidence, that the proposed boundary amendment is in conformity with the goals, objectives, and express provisions of the Wailuku-Kahului Community Plan. | |
| 12. In both the approved and newly proposed versions of the Wailuku-Kahului Community Plans (F.E.I.S. Section 5.8.1 on Page 5-20), (F.E.I.S. Section 5.8.2 on Page 5-21) the recommendations pertaining to energy planning are clear and consistent. | | |
| The Land Use Commission should deny this petition because both plans state, "Preserve agricultural lands as a major element of the open space setting which borders the various communities within the planning region." | The site is not located on agricultural land which constitutes an open-space setting bordering on a community. The site is located near other heavy industrial uses and is compatible with these uses.<br><br>The remote location of the Waena Generating Station creates a substantial distance from the nearest community and there are no intentions or proposals for urban residential amendment of the Wailuku-Kahului Community Plan. The Maui Planning Department has concurred with this land use concept of maintaining the mentioned heavy industrial uses in a remote and isolated location. | 2/26/98 transcript, p. 85, lines 1-16 and p. 86, line 6 - p. 89, line 7; 2/27/98 transcript, p. 122, line 19 - p. 130, line 21; 4/8/98 transcript, p. 14, line 12 - p. 15, line 3, and p. 181, line 9-p. 183, line 2; Exhibits C-2, C-9, C-10, C-56, C-57, C-108; Petition, p. 8; MECO Findings 74, 114-118, and 175; |

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| An L.U.C. district reclassification for the purpose of an oil-burning power plant would violate the Community Plan. | MECO Conclusions 3 and 7, and 17. |

## IV. MAUI TOMORROW'S PROPOSED ORDER

Whereas the Land Use Commission is unable to find adequate justification at this time for a boundary amendment reclassification from the agricultural to the urban district, this petition is hereby denied.

IN THE ALTERNATIVE, (WHICH INTERVENORS BELIEVE SHOULD BE INAPPLICABLE) CONDITIONS

No further re-zoning or reclassification permits or amendments should be applied for by Maui Electric Company, Limited until the Public Utilities Commission approves an Integrated Resource Plan which would allow for an oil-burning power plant at the proposed Waena site.

No power plant should be constructed or applied for by Maui Electric Company, Limited without first being in compliance with the State of Hawai'i General Plan, County of Maui General Plan, and the Wailuku-Kahului Community Plan which variously includes the following objectives:

1. Dependable, efficient and economical energy systems

2. Increased self-sufficiency where the ratio of indigenous to imported energy use is increased

3. Greater energy security in the face of threats to Hawai'i's energy and supply systems

4. Promote the use of alternative energy sources, such as wind, biomass, and solar

5. Make Maui County more self-sufficient in its need for non-renewable energy and more efficient in its use of energy

**MECO'S RESPONSE:** Because Maui Tomorrow's Proposed Findings of Fact are unsupported by the record in this matter, it would be clearly erroneous to find the facts as Maui Tomorrow has proposed. As a direct consequence of Maui Tomorrow's failure to rebut the clear preponderance of the evidence that MECO has presented, Maui Tomorrow's proposed Conclusions of Law are contrary to law. Accordingly, Maui Tomorrow's proposed order, including the alternative order setting forth conditions, is without basis in the record of this proceeding or under the law applicable to the Land Use Commission's determinations on petitions for boundary amendments.

DATED: Honolulu, Hawaii, May 22, 1998.

B. MARTIN LUNA
ALLEN R. WOLFF
RANDALL H. ENDO

Attorneys for Petitioner
MAUI ELECTRIC COMPANY, LIMITED

BEFORE THE LAND USE COMMISSION

STATE OF HAWAII

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| In the Matter of the Petition of | ) | DOCKET NO. A97-722 |
| | ) | |
| MAUI ELECTRIC COMPANY, LIMITED, a Hawaii corporation, | ) | CERTIFICATE OF SERVICE |
| | ) | |
| To Amend the Agricultural Land Use District Boundary into the Urban Land Use District for Approximately 65.7 Acres of Land at Wailuku and Makawao Districts, Maui, Hawaii, TMK 3-8-03:23 and 24 | ) | |

## CERTIFICATE OF SERVICE

The undersigned hereby certifies that a true and correct copy of the foregoing document was duly served upon the following, at their last known address, by U.S. **certified** mail, postage prepaid, on the date indicated below:

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DATED: Honolulu, Hawaii, May 22, 1998.

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LAND USE COMMISSION
STATE OF HAWAII
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BEFORE THE LAND USE COMMISSION

STATE OF HAWAII

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| In the Matter of the Petition of<br><br>MAUI ELECTRIC COMPANY, LIMITED, a Hawaii corporation,<br><br>To Amend the Agricultural Land Use District Boundary into the Urban Land Use District for Approximately 65.7 Acres of Land at Wailuku and Makawao Districts, Maui, Hawaii, TMK 3-8-03:23 and 24 | DOCKET NO. A97-722<br><br>MAUI ELECTRIC COMPANY, LIMITED'S RESPONSE TO THE OFFICE OF PLANNING'S FINDINGS OF FACTS, CONCLUSIONS OF LAW AND DECISION AND ORDER; CERTIFICATE OF SERVICE<br><br>HEARINGS CONDUCTED:<br>February 26 and 27, 1998<br>April 8 and 9, 1998<br>April 23 and 24, 1998 |

MAUI ELECTRIC COMPANY, LIMITED'S RESPONSE
TO THE OFFICE OF PLANNING'S FINDINGS OF FACTS,
CONCLUSIONS OF LAW AND DECISION AND ORDER

Maui Electric Company. Limited, ("MECO") fully supports the proposed Findings of Facts, Conclusions of Law and Decision and Order ("FOFCL") filed by the Office of Planning, Department of Business Economic Development & Tourism, State of Hawaii, ("OP") in this Land Use district boundary amendment proceeding. The evidence presented by MECO, the OP and the Department of Planning, County of Maui, ("Planning Department") in this proceeding provides ample basis for the OP's well-reasoned and incisive FOFCL.

Furthermore, MECO agrees with the eleven conditions that are listed in the FOFCL. MECO will comply with said conditions.

There are a few provisions in OP's FOFCL, however, that MECO desires to have clarified or corrected. MECO's intent to seek such clarification or correction is to assist the Land Use Commission ("LUC"), so that when it prepares its own Findings of Facts, Conclusions of Law and Decision and Order for this proceeding, all of its findings will be technically and factually accurate. By proposing such clarification or correction, MECO is certainly not suggesting that the OP's FOFCL is faulty or questionable in any way. The few comments set forth below can hardly be interpreted to negatively affect the OP's findings. Rather, MECO believes that its suggestions can only help to enhance the credibility of the OP's FOFCL.

Accordingly, MECO respectfully proposes to clarify or modify the following findings of facts ("FOF") in the OP's FOFCL:

1. FOF 41, page 10: This provision should be modified by deleting "complete with heat recovery steam generators" ("HRSG") to prevent the possible interpretation that the HRSG will be installed along with the first CT generator. The HRSG will be installed with the steam turbine in 2006. Petitioner's Exhibit C-17; FEIS page 2-7,

table 2-2; FEIS page 3-14, section 3.1.6; Transcript 2/26/98, page 89, line 19 to page 90, line 13.

2. FOF 42, page 10: This provision should be modified to state that the second CT unit will be installed in 2005. The heat recovery steam generator and the steam turbine generator will be added in 2006. Petitioner's Exhibit C-17; FEIS page 2-7, table 2-2; FEIS page 3-14, section 3.1.6; Transcript 2/26/98, page 89, line 19 to page 90, line 13.

3. FOF 109, page 23: This provision should be modified for purposes of clarity as follows: "Lack of specific commitment, power purchase agreements, or generation facility and other data, and the absence of applicable agency approvals (such as the State Public Utility Commission) do not allow for the inclusion of any IPPs. Therefore, IPPs cannot be looked upon to meet or replace the need for additional units beginning in the year 2004." FEIS page 3-15.

4. FOF 116, second sentence, page 24: MECO is adding three, rather than two, additional units at its Maalaea facility. Petitioner's Exhibit C-17, FEIS page 2-7, table 2-2.

5. FOF, second sentence p. 34: Typographical correction from "(Stone & , 1989)" to "(Stone & Webster, 1989)".

6. FOF 169, citation, p. 37: Typographical correction from "TR 04/08/98, p. 58, Ins 8 to 12)" to "(TR 04/08/98, p. 58, Ins 4 to 12)".

7. FOF 201, page 41: Typographical correction from "$NSO_2$" to "$NO_2$".

8. FOF 267, page 54: Typographical correction from "broilers" to "boilers".

9. FOF 287, first sentence, page 59: Because small increases in air quality impacts is permissible in Class I areas, we suggest that "almost" be inserted between "where" and "any" so that the sentence will be, "PSD regulations provide for the classification of all geographic areas into one of three classes, with Class I designation being the most stringent, where almost any deterioration in quality would be significant, . . . ." FEIS page 4-6, first bullet; Petitioner's Exhibit C-40.

10. FOF 310, page 64: The amount of water which will be drawn from a well for one DTCC unit is about 220,000 gallons per day, and for the four DTCC units, about 880,000 gpd. However, the amount of water that will actually be used by one DTCC unit is about 110,000 gpd and by four DTCC units, about 440,000 gpd. Transcript 4/8/98, page 126, line 25 to page 127, line 10.

11. FOF 311, second sentence, page 64: Typographical correction from "of" to "or".

Obviously, the foregoing proposed modifications to the OP's FOFCL do not change the basis for the OP's recommendation to the LUC to approve MECO's petition for a district boundary amendment. As stated at the outset, these proposed modifications are intended to clarify and correct only a few of the OP's FOF. Accordingly, MECO urges the LUC to approve MECO's petition and to adopt a combination of MECO's Findings of Facts, Conclusions of Law and Decision and Order, and the OP's FOFCL to substantiate said decision.

Dated: Wailuku, Hawaii, May 22, 1998.

B. MARTIN LUNA
ALLEN R. WOLFF
RANDALL H. ENDO

Attorneys for
MAUI ELECTRIC COMPANY, LIMITED

BEFORE THE LAND USE COMMISSION

STATE OF HAWAII

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| MAUI ELECTRIC COMPANY, LIMITED, a Hawaii corporation, | ) | CERTIFICATE OF SERVICE |
| | ) | |
| To Amend the Agricultural Land Use District Boundary into the Urban Land Use District for Approximately 65.7 Acres of Land at Wailuku and Makawao Districts, Maui, Hawaii, TMK 3-8-03:23 and 24 | ) | |

## CERTIFICATE OF SERVICE

The undersigned hereby certifies that a true and correct copy of the foregoing document was duly served upon the following, at their last known address, by U.S. **certified** mail, postage prepaid, on the date indicated below:

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DATED: Wailuku, Hawaii, May 22, 1998.

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MAY 22 12 53 PM '98
LAND USE COMMISSION
STATE OF HAWAII

## TRANSMITTAL LETTER

TO: Esther Ueda
Executive Officer
LAND USE COMMISSION
State of Hawaii
State Office Tower
235 S. Beretania St., 4th Fl.
Honolulu HI 96813
Honolulu, Hawaii 96809

DATE: May 21, 1998

(X) CERTIFIED MAIL ( ) HAND DELIVER ( ) COURT JACKET

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RE: In the Matter of the Petition of MAUI ELECTRIC COMPANY, LTD. - Docket No. A97-722

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| ITEM | DESCRIPTION |
|---|---|
| Original + 21 | MAUI PLANNING DEPARTMENT'S OBJECTIONS TO INTERVENOR MAUI TOMORROW'S PROPOSED FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECISION AND ORDER; CERTIFICATE OF SERVICE |

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| | | | |
|---|---|---|---|
| (X) | For filing | ( ) | Attached as requested |
| ( ) | For your files | ( ) | Per our conversation |
| ( ) | For your information | ( ) | For necessary action |

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REMARKS: PLEASE RETURN FIVE (5) FILE-MARKED COPIES TO US IN THE ENCLOSED SELF-ADDRESSED STAMPED ENVELOPE. THANK YOU. ASSISTANCE. IF YOU HAVE ANY QUESTIONS, PLEASE CALL ME AT (808) 243-7740.

KELLY A. CAIRNS

KELLY A. CAIRNS
Deputy Corporation Counsel

KAC:ln
Enclosures

Printed on recycled paper

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ORIGINAL

LAND USE COMMISSION
STATE OF HAWAII
MAY 22 12 53 PM '98

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAII

| | |
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| In the Matter of the Petition of<br><br>MAUI ELECTRIC COMPANY, LTD.<br><br>To Amend the Land Use District Boundary From the State Agricultural District to the Urban District for Approximately 65.7 acres of Lands Situated at Tax Map Key: 3-8-003:23 and 24, Pulehu, Island of Maui, Hawaii | Docket No. A97-722<br><br>MAUI PLANNING DEPARTMENT'S OBJECTIONS TO INTERVENOR MAUI TOMORROW'S PROPOSED FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECISION AND ORDER; CERTIFICATE OF SERVICE<br><br>HEARINGS CONDUCTED:<br>February 26 and 27, 1998<br>April 8 and 9, 1998<br>April 23 and 24, 1998 |

MAUI PLANNING DEPARTMENT'S OBJECTIONS TO
INTERVENOR MAUI TOMORROW'S PROPOSED FINDINGS OF FACT,
CONCLUSIONS OF LAW, AND DECISION AND ORDER

Pursuant to §15-15-82(c) of the Land Use Commission Administrative Rules, the County of Maui Planning Department (hereinafter referred to as "County") objects to certain Findings of Fact and Conclusions of Law made by the Intervenor Maui Tomorrow (Intervenor). In general, the County finds that certain findings cited by

Maui Tomorrow are conclusions and opinions voiced by the intervenor which have not been substantiated by the record established during the six days of hearings.

## I. OBJECTIONS TO INTERVENOR'S PROPOSED FINDINGS OF FACT

We object to the inaccuracy of Intervenor's Findings No. 6 on Page 2. More accurately, "the Maui Planning Commission voted to make no recommendation to the County Council" due to its failure to reach a consensus. In addition, the concerns raised by the Maui Planning Commission were as follows:

"1. **Address greater demand side management and to make efforts to cut demand through conservation.**

2. **Re-review growth demand estimates/projections.**

3. **Address rate control as an incentive to diversify from fossil fuel.**

4. Close the Maalaea and Kahului generating plants.

5. Adhere to lighting standards by "Night skys".

6. **Commit to renewable fuel technology or other alternatives by a certain time frame.**

7. Establish emission control monitoring so public has 24 hour access to inform authorities (Department of Health).

8. Further investigate Best management Practices (BMP's) of ammonia, sludge, and other potentially hazardous materials/wastes.

9. Get involved in a county wide energy symposium in order to get feedback from the public on energy resources." (emphasis added)

(Testimony of Director David W. Blane on April 23, 1998, Transcript Volume V, pp.73-76)

## II. OBJECTIONS TO INTERVENOR'S CONCLUSIONS OF LAW

In the proposed Conclusions of Law, Intervenor makes conclusions regarding the General Plan 1990 of the County of Maui and Wailuku-Kahului Community Plans with no foundation in the proposed findings. The County objects to the following conclusions of Intervenor, some of which have been misquoted from the adopted documents:

A. Conclusion No. 7 states that "The Land Use commission should deny this application because a major theme contained within the objectives of the Maui County General Plan, is to: "**Protect Maui County's agricultural land and rural identity.**" Intervenor has not adequately established through the Findings of Fact how the Petitioner has not met this objective of the General Plan 1990 of the County of Maui. Further there are four other major themes in the General Plan, as follows.

| | |
|---|---|
| Theme No. 2 | Prepare a Directed and Managed Growth Plan |
| Theme No. 3 | Protect Maui County's Shoreline and Limit Visitor Industry Growth |
| Theme No. 4 | Maintain a Viable Economy That Offers Diverse Employment Opportunities For Residents |
| Theme No. 5 | Provide For Needed Resident Housing |

B. Conclusion No. 8 states that "The Land Use commission should deny this petition because a major objective of the Maui County General Plan within the land use section of the plan, Objective 3, Policy A is to **"Protect prime agricultural lands from competing non-agricultural land uses."**

Although agricultural lands are being redistricted, the petitioner has identified an additional 1,400 acres lands that will be placed in sugarcane cultivation. Also, the removal of 65.7 acres from the 36,000 acres currently under HC&S plantation will have minimal impacts on agricultural resources. (Maui Planning Department Testimony, pp. 11-12, 14-15)

Intervenor fails to include other conflicting objectives and policies that may conflict with policy A, such as within the Public Utilities and Facilities section of the plan, Objective 1 is: **"To anticipate and provide public utilities which will met community needs in a timely manner."** Further, the policies of this objective includes the following (General Plan 1990 of the County of Maui, p. 13 and Intervenor's Exhibit 1):

a. Maintain all power and utility systems so as to meet public health and safety standards.

b. Encourage new and expanded power generation facilities to be community planned based on sound land use and environmental planning principles.

c. Assure the availability of power systems and sources that meet public health and safety standards.

d. Locate energy producing plants in areas where they will not create health hazards.

The Petitioner has shown the need for the new power generating station in order to maintain an adequate system margin-in-reserve generating capacity; provide a system that meet the projected electrical demand; increase system reliability; replace older generation facilities scheduled for retirement; and provided dependable electrical service to its customers. (Office of Planning's Proposed Findings of Fact, Conclusions of Law, and Decision and Order, pp. 19-24)

C. Conclusion No. 9 states that "The Land Use commission should deny this petition because a major objective of the Maui County General Plan within the land use section of the plan, Objective 3, Policy D is to "**Discourage the conversion of productive or potentially productive agricultural lands to non-agricultural purposes.**" The correct quote of Policy D is to "***Discourage the conversion, through zoning or other means, of productive or potentially productive agricultural lands to nonagricultural uses, including but not limited to golf courses and residential subdivisions.***" (General Plan 1990 of the County of Maui, p. 3) In consideration of the various policies and objectives set forth in the general plan, Intervenor does not provide findings which support a conclusion that conversion of productive agricultural lands to non-agricultural purposes in this instance should be discouraged.

D. Conclusion No. 10 states "Significantly, MECO included in their application for a boundary change some of the less relevant sections of the Maui County General Plan. However, MECO omitted the relevant energy section. The

Land Use Commission should deny this application because the Maui County General Plan clearly states in Energy Objective #1: **"To make Maui County more self-sufficient in its need for non-renewable energy and more efficient in its use of energy."**

The Intervenor fails to include the Policies recommended in the Maui County General Plan to achieve this end. These policies include the following (General Plan 1990 of the County of Maui, p. 13 and Intervenor's Exhibit 1)

a. Encourage programs to test the feasibility of alternative sources of energy production.

b. Maintain an ongoing assessment of the county's energy resources, as well as an assessment of alternative sources in the context of a comprehensive integrated resource plan.

c. Publicize the need to conserve energy.

d. Create incentive programs to encourage the use of solar heaters and other energy saving building design concepts and devices.

e. Seek to incorporate energy-saving building design concepts and devices in government buildings.

f. Encourage the incorporation of energy-saving building design concepts and devices in all new private and public developments by providing energy efficient urban design guidelines and amendments of the Maui County Uniform Building Code.

Petitioner is a participant in the Integrated Resource Plan (IRP) process which includes Demand-Side Management (DSM) programs. Also, through the IRP process

alternative energy sources are examined and evaluated including the use of renewable energy sources. (Office of Planning Proposed Findings of Fact, Conclusions of Law, Decision and Order, pp. 38-39, pp 26-33).

E. Conclusion No. 11 states "In both the approved and newly proposed versions of the Wailuku-Kahului Community Plans, (F.E.I.S. Section 5.8.1 on Page 5-20), (F.E.I.S. Section 5.8.2 on Page 5-21) the recommendations pertaining to energy planning are clear and consistent. The Land Use commission should deny this petition because both of these plans state recommendation to "**Promote the use of alternative energy sources, such as biomass, wind, and solar.**"

Petitioner has examined and evaluated the use of alternative energy sources including biomass, wind, and solar and determined that these technologies had not reached a stage in either their development, or commercial availability, to provide cost-efficient firm generating capacity for the Island of Maui. (Office of Planning's Proposed Findings of Fact, Conclusions of Law, and Decision and Order, pp. 26-33) Further, the flexibility of the plant design and phasing of development of the site does enable the petitioner to consider alternative energy sources as new technology is developed making such alternatives more cost effective. (Maui Planning Department Testimony, p. 12)

F. Conclusion No. 12 states "In both the approved and newly proposed versions of the Wailuku-Kahului Community Plans, (F.E.I.S. Section 5.8.1 on Page 5-20) (F.E.I.S. Section 5.6.2 on Page 5-21) the recommendations pertaining to energy planning are clear and consistent. The Land Use commission should deny this petition

because both plans state, **"Preserve agricultural lands as a major element of the open space setting which borders the various communities within the planning region."** Intervenor's Proposed Findings of Fact, Conclusions of Law fails to provide findings that the open space setting which borders the various communities have been impacted.

## III. OBJECTIONS TO INTERVENOR'S ORDER

Intervenor has failed to provide substantiating findings of fact for the Proposed Conclusions of Law. The record established during the six days of hearing does not substantiate the Intervenor's position that the Petition be denied.

DATED: Wailuku, Maui, Hawaii, May 21, 1998.

J.P. SCHMIDT
Corporation Counsel
Attorney for MAUI PLANNING DEPARTMENT

By Kelly A. Cairns
KELLY A. CAIRNS
Deputy Corporation Counsel

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAII

| | | |
|---|---|---|
| In the Matter of the Petition of | ) | Docket No. A97-722 |
| | ) | |
| MAUI ELECTRIC COMPANY, LTD. | ) | CERTIFICATE OF SERVICE |
| | ) | |
| To Amend the Land Use District Boundary From the State Agricultural District to the Urban District for Approximately 65.7 acres of Lands Situated at Tax Map Key: 3-8-003:23 and 24, Pulehu, Island of Maui, Hawaii | ) | |

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a true and correct copy of the foregoing document was duly served upon the following, at their last known address, by U. S. **certified** mail, postage prepaid, on the date indicated below:

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DATED: Wailuku, Maui, Hawaii, May 21, 1998.

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BEFORE THE LAND USE COMMISSION

STATE OF HAWAII

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| In the Matter of the Petition of<br><br>MAUI ELECTRIC COMPANY, LIMITED, a Hawaii corporation,<br><br>To Amend the Agricultural Land Use District Boundary into the Urban Land Use District for Approximately 65.7 Acres of Land at Wailuku and Makawao Districts, Maui, Hawaii, TMK 3-8-03:23 and 24 | DOCKET NO. A97-722<br><br>MAUI ELECTRIC COMPANY, LIMITED'S POST-HEARING BRIEF; CERTIFICATE OF SERVICE<br><br>HEARINGS CONDUCTED:<br>February 26 and 27, 1998<br>April 8 and 9, 1998<br>April 23 and 24, 1998 |

MAUI ELECTRIC COMPANY, LIMITED'S POST-HEARING BRIEF

## I. INTRODUCTION

Petitioner MAUI ELECTRIC COMPANY, LIMITED ("MECO"), by and through its counsel, pursuant to Section 15-15-80 of the Rules of the Land Use Commission

("LUC Rules"), hereby submits its post-hearing brief. This brief discusses relevant statutory law and case law on issues relating to petitions for boundary amendments and is submitted in conjunction with MECO's Proposed Finding of Fact, Conclusions of Law, Decision and Order Granting Petition to Amend District Boundary ("FFCL").

## II. DISCUSSION

### A. MECO's Burden of Proof

Section 15-15-77 of the LUC Rules sets forth the decision making criteria for amending district boundaries:

> The commission shall not approve an amendment of a land use district boundary unless the commission finds upon the clear preponderance of the evidence that the proposed boundary amendment is reasonable, not violative of section 205-2 and consistent with the policies and criteria established pursuant to sections 205-16, 205-17, and 205A-2, HRS.

LUC Rules § 15-15-77(a).[1]

### B. MECO Has Satisfied Its Burden of Proof

MECO has proved by a clear preponderance of the evidence that the proposed boundary amendment is reasonable, meets all statutory criteria, and is consistent with all

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[1] The enabling statute, Haw. Rev. Stat. § 205-4(g) (1997), contains similar language:

> No amendment of a land use district boundary shall be approved unless the commission finds upon the clear preponderance of the evidence that the proposed boundary is reasonable, not violative of section 205-2 and consistent with the policies and criteria established pursuant to sections 205-16 and 205-17.

See also Kilauea Neighborhood Ass'n v. Land Use Com'n of State of Hawaii, 7 Haw. App. 227, 751 P.2d 1031 (1988).

applicable policies. MECO's FFCL, submitted simultaneously with this brief, detail how MECO has met its burden.

### C. Maui Tomorrow Was Granted Standing to Intervene Only As to Four Issues

Maui Tomorrow's petition to intervene was granted on the following four issues only:

> (1) air quality impacts of the proposed project;
>
> (2) alternative sources, fuels and processes;
>
> (3) the cumulative impact of industrialization of the central valley area of Maui; and
>
> (4) visual/aesthetic impacts of the proposed project from the surrounding roads.

Order Granting Petition for Intervention, filed March 3, 1998.

Maui Tomorrow therefore only has standing to address MECO's petition within the confines of the aforementioned four categories. Any and all other objections raised by Maui Tomorrow must be disregarded as outside the scope of issues on which Maui Tomorrow was granted standing to address. See LUC Rules § 15-15-57(a) (LUC authorized to identify the issues for the hearing).

### D. Maui Tomorrow Has Failed to Rebut MECO's Evidence on Any of the Four Issues

Maui Tomorrow has not provided any credible evidence to rebut MECO's proof that reclassification is proper. For the cross-examination of MECO's witnesses, as well as others, Maui Tomorrow was permitted to use multiple individuals. These individuals persisted, in spite of numerous warnings from the Commissioners, in making speeches,

offering narratives, and attempting to testify during their questioning of witnesses. It is well settled that statements made by a person conducting cross-examination are NOT evidence.

Maui Tomorrow's evidence consisted primarily of anecdotal observations by persons opposed to development. Few of Maui Tomorrow's witnesses were actually qualified as expert witnesses in a field relevant to the four issues on which Maui Tomorrow intervened. None of Maui Tomorrow's witnesses conducted any tests, studies, nor presented any written reports to the Land Use Commission. Rather, they simply testified as to information they had read in articles (the names of such articles were usually unknown and never submitted into evidence) or information found while browsing the Internet, or personal feelings about various topics.

Even though hearsay testimony may be admissible in administrative hearings (since the LUC is not bound by the formal rules of evidence), little weight should be given to such evidence when no effort is made to bolster its reliability. See 2 Am.Jur.2d, Administrative Law § 364 (1994)("Hearsay lacking sufficient assurance of truthfulness *cannot constitute substantial evidence which will overcome direct testimony*")(emphasis added). In other words, hearsay evidence should be considered by the LUC only if it is sufficiently reliable and probative. Even then, it should not be given the same weight as evidence that comes from personal observation, personal experience, or an expert's scientific analysis. Id.[2] None of Maui Tomorrow's witnesses testified as to any scientific undertaking

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[2] Moreover, double hearsay (also known as "hearsay within hearsay" or "hearsay upon hearsay") is inadmissible, even in administrative proceedings. 2 Am.Jur.2d, Administrative Law, § 348 (1994) ("Although the administrative procedure acts relax the rules of evidence to some degree . . . *the proceedings do not become so open as to allow double hearsay*") (emphasis added).

to assess potential impacts of the proposed Waena Generating Station. The record is clear that Maui Tomorrow's evidence was not reliable or probative.

The information offered by the witnesses for Maui Tomorrow was hearsay of the lowest form. Maui Tomorrow's witnesses testified about information contained in documents that were not in evidence and were never produced. Maui Tomorrow's witnesses often failed even to describe or state the source of their information. Such tactics made cross-examination and exploration of the credibility of source materials impossible. As a result of the foregoing, the probative value of the evidence offered by Maui Tomorrow must be regarded as dubious at best.

Since Maui Tomorrow was without standing to intervene on any issues other than the four specified issues, MECO's evidence on such other issues is without challenge. By definition then, MECO's evidence on such other issues is the clear preponderance of the evidence. The hard evidence put forth by MECO establishes that it has also met its evidentiary burden on each of the four issues on which Maui Tomorrow had standing to intervene.

**1. Air Quality**

MECO's FFCL detail the impact of the proposed generating station upon air quality. The overwhelming weight of the evidence supports the conclusion that there will be no significant adverse impacts upon air quality. All applicable air quality statutes, regulations, and standards will be met. Maui Tomorrow's material on this issue was purely speculative and hypothetical. Maui Tomorrow provided no air quality analysis or scientific tests to dispute the facts presented by MECO.

### 2. Alternative Sources, Fuels and Processes

MECO's FFCL discuss in detail how alternative energy sources were considered. Alternative energy sources are not viable alternatives at the present time. However, the phasing of the Waena Generating Station will allow the flexibility to use alternative fuels in the future should they become feasible. Maui Tomorrow has failed to rebut the overwhelming evidence presented by MECO on this issue.

### 3. Impact of Industrialization of the Central Valley Area of Maui

MECO's FFCL discuss in detail how there will be no significant adverse impacts caused by the proposed Waena Generating Station. Indeed, the siting of the Waena Generating Station in the immediate vicinity of the existing quarry and landfill places it in an appropriate area of similar heavy industrial uses. The siting of such industrial uses near centers of commercial or residential development would be incompatible with such existing commercial or residential uses. Maui Tomorrow provided no contrary analysis to dispute the facts presented by MECO.

### 4. Visual/Aesthetic Impacts

MECO's FFCL and its evidence at the hearings demonstrate that the proposed Waena Generation Station will not have any adverse visual or aesthetic impacts. This conclusion was undisputed. Maui Tomorrow provided no contrary analysis to dispute the facts presented by MECO.

## E. Maui Tomorrow Has Failed to Rebut MECO's Evidence on Any Issue Relevant to the Granting of the Petition

Maui Tomorrow had no standing to present evidence on any issue other than the four issues on which intervention was granted. Nevertheless, even if Maui Tomorrow's

evidence is considered on other issues relevant to the petition, Maui Tomorrow has still failed to rebut the overwhelming evidence offered in support of the petition by MECO. Accordingly, MECO has presented the clear preponderance of the evidence on those issues as well, and the Land Use Commission should grant the petition.

**F. The LUC Should Grant the Boundary Amendment**

Where a proposed boundary amendment meets the statutory requisites, the LUC should grant the petition. While there are no Hawaii cases directly addressing this issue, the Hawaii Intermediate Court of Appeals has ruled in an analogous situation dealing with Special Management Area (SMA) permits:

> [W]here an administrative record indicates that a proposed development within an SMA would not contravene the statute's policies, objectives, and purposes, *the Commission would exceed its authority by denying an SMAP* . . .

Topliss v. The Planning Commission, 9 Haw. App. 377, 392-94, 842 P.2d 648, 657-58 (1993) (emphasis added). Thus, under Topliss, an administrative agency must approve a request when the statutory requirements have been met. MECO has proven by a clear preponderance of the evidence that "the proposed boundary amendment is reasonable, not violative of section 205-2 and consistent with the policies and criteria established pursuant to sections 205-16, 205-17, and 205A-2, HRS." LUC Rules § 15-15-77(a).

## III. CONCLUSION

For the foregoing reasons, the Land Use Commission should adopt Maui Electric Company, Limited's Proposed Findings of Fact, Conclusions of Law, Decision and Order Granting Petition To Amend District Boundary.

DATED: Honolulu, Hawaii, May 15, 1998.

B. MARTIN LUNA
ALLEN R. WOLFF
RANDALL H. ENDO

Attorneys for Petitioner
MAUI ELECTRIC COMPANY, LIMITED

BEFORE THE LAND USE COMMISSION

STATE OF HAWAII

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**MAUI ELECTRIC COMPANY, LIMITED'S PROPOSED FINDINGS OF FACT, CONCLUSIONS OF LAW, DECISION AND ORDER GRANTING PETITION TO AMEND DISTRICT BOUNDARY**

Maui Electric Company, Limited hereby submits its proposed Findings of Fact, Conclusions of Law, Decision and Order.

## I. INTRODUCTION

1. This case involves the petition of Maui Electric Company, Limited, a Hawaii corporation ("MECO"), filed October 24, 1997, for a land use district boundary amendment to change approximately 65.7 acres of land at the Wailuku and Makawao Districts on the Island of Maui, TMK No. 3-8-03:23 and 24, from agricultural land use district into urban land use district. The petition was filed by MECO pursuant to Chapter 205, Hawaii Revised Statutes, as amended ("HRS") and Title 15, Subtitle 3, Chapter 15, Hawaii Administrative Rules, as amended ("LUC Rules"). MECO seeks this amendment so that it may construct a power generating station, known as the Waena Generating Station, on the reclassified land.

## II. FINDINGS OF FACT

### A. Procedural Matters

#### 1. Prehearing Procedures

2. On October 24, 1997, MECO filed its Petition for Land Use District Boundary Amendment and shortly thereafter, MECO filed its certificate of service pursuant to section 15-15-48 of the LUC Rules.

3. On December 5, 1997, a notice of hearings on the petition was published in the Honolulu Star-Bulletin and the Maui News.

4. On December 22, 1997, a petition to intervene was filed with the Land Use Commission by Maui Tomorrow Foundation, Inc. ("Maui Tomorrow"), a Hawaii non-profit corporation "organized exclusively for charitable and educational purposes under

section 501(c)(3) of the Internal Revenue Code". See Bylaws of Maui Tomorrow (1996 revision), Maui Tomorrow's Exhibit 11, p. 1.

5. On January 22, 1998, following a hearing, Maui Tomorrow's petition to intervene was granted and Maui Tomorrow was granted intervenor status. The Land Use Commission subsequently entered a written order confirming Maui Tomorrow's intervenor status on the following four issues only:

(1) air quality impacts of the proposed project;

(2) alternative sources, fuels and processes;

(3) the cumulative impact of industrialization of the Central Valley area of Maui; and

(4) visual/aesthetic impacts of the proposed project from the surrounding roads.

Order Granting Petition for Intervention, filed March 3, 1998.

6. On February 3, 1998, a prehearing conference was conducted at which time a schedule was agreed upon for the exchange of exhibits and witness lists among all parties.

7. On February 4, 1998, a Prehearing Order was entered by the Land Use Commission which set forth the prehearing schedule and prehearing requirements that applied to all parties.

8. On February 20, 1998, the Land Use Commission received from the parties a stipulation regarding MECO's witnesses. That stipulation set forth that all the witnesses for MECO listed on their witness list were accepted as expert witnesses and were

deemed qualified to provide expert opinions in their respective fields. Stipulation Regarding Applicant Maui Electric Company, Limited's Witnesses, filed February 20, 1998.

9. On February 20, 1998, the Land Use Commission received from the parties a stipulation regarding non-contested issues. That stipulation set forth that Maui Tomorrow did not contest the testimony of the following MECO expert witnesses and that the testimony of such experts could be submitted in written testimony/reports that would be accepted into evidence: Glen Lau on geotechnical resources, natural hazards, geology, and soils; Amy Dunn on archaeological and cultural resources; Dr. Evangeline Funk on biological resources; and J. Michael Silva on electric and magnetic field analysis. Each of the foregoing individuals was later made available by MECO for examination at the hearings before the Land Use Commission. Each of the foregoing individuals concluded and offered testimony that within their area of expertise and study, the proposed Waena Generating Station would cause no significant adverse impact. Stipulation Regarding Non-Contested Issues, filed February 20, 1998. See also Transcript of Proceedings, February 26, 1998, p. 106, line 11 - p. 109, line 20 and Transcript of Proceedings, April 8, 1998, p. 11, line 5 - p. 12, line 19 and Exhibits D-11, D-13, D-14 and D-17.

10. On February 26, 1998, the Land Use Commission received public testimony on the petition. During that public testimony, the Land Use Commission received testimony from eleven members of the general public. During that public testimony, the Land Use Commission received exhibits from some of the individuals who testified. The individuals who testified during the public testimony portion of this proceeding were not subject to cross-examination and the parties to the contested case portion of this proceeding

were not permitted to offer rebuttal testimony or evidence during the public testimony portion of this proceeding.

11. On February 26, 1998, at the conclusion of the period for public testimony, the contested case portion of this proceeding commenced. During the contested case portion of this proceeding, the individuals who testified were subject to cross-examination by the parties and each party was provided an opportunity offer rebuttal testimony and evidence.

12. This case came on for multiple days of a contested case hearing before the Land Use Commission of the State of Hawaii. Hearings were conducted on February 26 and 27, 1998, April 8 and 9, 1998, and April 23 and 24, 1998. During the contested case portion of these hearings, testimony and evidence were received from MECO, the County of Maui, the State of Hawaii, and Intervenor Maui Tomorrow.

**2. Public Testimony**

13. The Public Testimony received by the Land Use Commission on February 26, 1998 included written testimony from:

a. G. Stephen Holaday, Hawaii Commercial and Sugar Company;

b. Harry H.K. Kameenui, International Brotherhood of Electrical Workers;

c. Clyde Murashige, Wailea Resort Company;

d. Terry Vencl, Maui Hotel Association;

e. Lynne Woods, Maui Chamber of Commerce;

f. Warren Watanabe and Kenneth Okamura, Maui County Farm Bureau; and

g. Richard Heede, Rocky Mountain Institute.

Transcript of Proceedings, February 26, 1998, p. 6, line 10 - p. 7, line 17.

14. The Public Testimony received by the Land Use Commission on February 26, 1998 included testimony from Jeffrey Parker, a farmer who expressed concern over the conversion of agricultural land into other uses. Transcript of Proceedings, February 26, 1998, p. 11, line 25 - p. 12, line 6. Mr. Parker also stated that he was concerned over MECO's intention to burn fossil fuels at the Waena Generating Station and its potential impact on the environment. Id., p. 12, line 7 - p. 14, line 25. Mr. Parker also submitted written testimony.

15. The Public Testimony included testimony from Madelyn D'Enbeau, a part-time employee of the County of Maui who does research for county council member Wayne Nishiki. Transcript of Proceedings, February 26, 1998, p. 18, lines 5 - 12. Ms. D'Enbeau expressed concern that the County of Maui had stated its position with respect to the petition before the matter had been addressed by the County of Maui Planning Commission or the County Council. Id., p. 18, lines 12 - 25. Ms. D'Enbeau was also concerned about the need for the Waena Generating Station. She submitted some written materials and stated that she believed that the rate of growth on Maui was less than expected, that the Waena Generating Station would displace existing biomass conversion of energy obtained from sugar cane waste, that the Waena Generating Station would have a detrimental effect on the Paia aquifer, that there would be an adverse impact on traffic, and that MECO had failed to report the conclusions of the various community meetings it conducted on the Waena Generating Station. Id., p. 20, line 18 - p. 25, line 16.

16. The Public Testimony included testimony from Diana Dahl, a representative of the Hawaii Organic Farmers Association. Ms. Dahl expressed concern over the emissions from the Waena Generating Station and the need for increased demand side management. Ms. Dahl referred to an article written by Richard Heede of the Rocky Mountain Institute. Transcript of Proceedings, February 26, 1998, p. 25, line 20 - p. 28, line 12.

17. The Public Testimony included testimony from Lucienne De Naie who expressed concern over the proposed change from agricultural land into land used for a generating station and that there should be more use of energy conservation and alternative energy production via other sources like wind and solar power. Ms. De Naie submitted a newspaper article from the San Francisco Chronicle. Transcript of Proceedings, February 26, 1998, p. 28, line 17 - p. 32, line 18.

18. The Public Testimony included testimony from Daniel Grantham. Mr. Grantham expressed concern over the need for better management of energy inefficiencies, more energy conservation, and the pursuit of alternative sources of energy. Mr. Grantham submitted a videotape which he described as containing a presentation made by Amory Lovins at a conference in April, 1997. Transcript of Proceedings, February 26, 1998, p. 32, line 21 - p. 39, line 11.

19. The Public Testimony included testimony from Glenn Shepherd, a retired geologist. Mr. Shepherd expressed concerns over the site selection for the Waena Generating Station and on the loss of agricultural lands. Mr. Shepherd also expressed concern for further examination of alternative sources of energy. Transcript of Proceedings, February 26, 1998, p. 39, line 15 - p. 45, line 15 and p. 63, line 13 - p. 64, line 23.

20. The Public Testimony included testimony from David Patton, Chief Executive Officer for Maui Memorial Hospital. Mr. Patton expressed support for the proposed Waena Generating Station and stated that there was a need for reliable, consistent, sufficient electricity to provide to patients at Maui Memorial Hospital. Mr. Patton explained that Maui Memorial Hospital intended to develop an additional 100,000 square feet in the near future and that this expansion would increase the hospital's demand for electricity. Transcript of Proceedings, February 26, 1998, p. 45, line 16 - p. 46, line 23.

21. The Public Testimony included testimony from Tom Ulick. Mr. Ulick is a resident of windward Kailua, past Huelo. Mr. Ulick expressed concern over MECO's intention to burn fossil fuels at the Waena Generating Station, the economic impact of burning fossil fuels, and the potential impact on tourism. Transcript of Proceedings, February 26, 1998, p. 47, line 5 - p. 49, line 9.

22. The Public Testimony included testimony from Scott Crawford. Mr. Crawford is the Executive Director for Maui Tomorrow. During Public Testimony, Mr. Crawford testified in his individual capacity as a member of the general public. Mr. Crawford referred to a letter written by Richard Heede of the Rocky Mountain Institute and an article in the March 1998 issue of Scientific American magazine. Mr. Crawford expressed concern over MECO's intention to burn fossil fuels at the Waena Generating Station. Mr. Crawford questioned the demand for additional power and expressed concern about whether an additional power generating facility was necessary. Transcript of proceedings, February 26, 1998, p. 49, line 12 - p. 54, line 18.

23. The Public Testimony included testimony from Marc Drehsen. Even though Mr. Drehsen was listed as a witness for Maui Tomorrow and later testified on behalf

of Maui Tomorrow, during Public Testimony, Mr. Drehsen testified in his capacity as a member of the Maui Clean Air Coalition. Mr. Drehsen expressed concern over MECO's intention to burn fossil fuels at the Waena Generating Station. Mr. Drehsen stated that the Maui Clean Air Coalition preferred further investigation into the burning of sugar cane leaf trash to generate power, using appropriate air pollution controls. Mr. Drehsen also stated that the Executive Committee of the Sierra Club Maui Group passed a resolution supporting energy efficiency. Transcript of Proceedings, February 26, 1998, p. 54, line 22 - p. 55, line 16 and p. 66, line 6 - p. 68, line 2.

24. The Public Testimony included testimony from Constance Palmore, Chair of the Sierra Club Maui Group. Ms. Palmore expressed a desire for increased community involvement in MECO's Integrated Resource Planning program. Ms. Palmore expressed concern about whether an additional power generating facility was necessary. Ms. Palmore referred to a letter written by Richard Heede of the Rocky Mountain Institute and expressed a desire that Maui look more towards energy self-sufficiency through alternative technologies and greater Demand Side Management. Ms. Palmore expressed concern over the visual impact of the Waena Generating Station and its potential impact on tourism. Ms. Palmore expressed concern over potential environmental impacts in the event of a fuel spill at Kahului Harbor or on the transport route from the harbor to the Waena Generating Station. Transcript of Proceedings, February 26, 1998, p. 56, line 6 - p. 63, line 6.

**3. Motions**

25. On March 25, 1998, MECO filed a motion to: (1) preclude Intervenor Maui Tomorrow from submitting exhibits or presenting witnesses not identified by the deadlines established in the Land Use Commission's prehearing order (filed February 4,

1998); (2) limit the testimony of Intervenor Maui Tomorrow's expert witnesses to the subject matter and material disclosed pursuant to the Land Use Commission's prehearing order; and (3) restrict Intervenor Maui Tomorrow from engaging in repetitious and duplicative cross-examination. On April 23, 1998, the Land Use Commission heard and denied the motion. Transcript of Proceedings, April 23, 1998, p. 14, lines 20-23.

26. On April 20, 1998, MECO filed a motion in limine to preclude admission of Maui Tomorrow's Exhibits 4 & 5. On April 23, 1998, the Land Use Commission heard and denied the motion. Transcript of Proceedings, April 23, 1998, p. 17, lines 15-16.

27. On April 20, 1998, MECO filed a motion in limine to preclude testimony of Steven Moser as an expert in air quality and air impacts. Maui Tomorrow did not file any memorandum in opposition, nor did it attempt to qualify Dr. Moser at the hearing. On April 23, 1998, the Land Use Commission heard and granted the motion insofar as it held that Dr. Moser's testimony would not be given the weight reserved to an expert in air quality impacts. However, he was nevertheless permitted to testify as to his conclusions. Transcript of Proceedings, April 23, 1998, p. 106, line 25 - p. 107, line 11. Maui Tomorrow did not make an offer of proof as to the testimony of Dr. Moser.

28. Most of Dr. Moser's professional career has been focussed on his practice as a medical physician. Transcript of Proceedings, April 23, 1998, p. 96, lines 22-24. He has never prepared a formal evaluation on air quality. Id., p. 97, lines 19-20. He did not conduct any air quality testing or scientific evaluation of the potential air quality impacts relating to the project in question. Id., p. 99, lines 2-11. His knowledge as to air quality is based solely upon reviewing documents. Id. He was previously disqualified from testifying

as an expert. Id., p. 101 lines 9 - 19. He has published various scientific articles, but none related to air quality or air impacts. Id., p. 98, lines 7-16.

29. On April 20, 1998, MECO filed a motion in limine to preclude the testimony of Ian Chan-Hodges as an expert as to community impacts/resources, and upon energy planning. Maui Tomorrow did not file any memorandum in opposition. On April 23, 1998, the Land Use Commission heard and granted the motion in part and denied it in part. The Land Use Commission qualified Ian Chan-Hodges to testify as an expert in the area of community economics and banking issues, but not as to energy planning. Transcript of Proceedings, April 23, 1998, p. 179, lines 10-13. Maui Tomorrow did not make an offer of proof as to the testimony of Mr. Chan-Hodges nor the topic of energy planning.

30. Mr. Chan-Hodges has never prepared a report analyzing the impacts of power plants upon community economics. Transcript of Proceedings, April 23, 1998, p. 168, lines 9-11. Mr. Chan-Hodges has no degree in economics, nor has he ever worked as a planner. Transcript of Proceedings, April 23, 1998, p. 169, lines 19-22.

31. On April 20, 1998, MECO filed a motion in limine to preclude the testimony of Dick Mayer as an expert in economics of energy planning and air pollution. Maui Tomorrow did not file any memorandum in opposition. On April 24, 1998, MECO withdrew this motion. Transcript of Proceedings, April 24, 1998, p. 5, line 14 - p. 7, line 10.

32. On April 20, 1998, MECO filed a motion in limine to preclude the testimony of Roy Smith and Erik Frye as experts in air quality and air impacts. Maui Tomorrow did not file any memorandum in opposition. On April 24, 1998, MECO withdrew this motion. Transcript of Proceedings, April 24, 1998, p. 5, line 14 - p. 7, line 10.

33. On April 20, 1998, MECO filed a motion in limine to preclude the testimony of James Williamson as an expert in air quality, water, fuel and fuel alternatives. Maui Tomorrow did not file any memorandum in opposition. On April 24, 1998, MECO withdrew this motion. Transcript of Proceedings, April 24, 1998, p. 5, line 14 - p. 7, line 10.

34. On April 23, 1998, MECO filed its Motion in Limine To Preclude Admission of Maui Tomorrow's Exhibits 2, 3 & 12. On April 23, 1998, the Land Use Commission heard and denied the motion. Transcript of Proceedings, April 23, 1998, p. 22, lines 14-16.

**4. Contested Case**

35. On February 26, 1998, the Land Use Commission received into evidence oral and/or written testimony from the following individuals:

a. Edward Reinhardt, MECO Manager for Engineering. Transcript of Proceedings, February 26, 1998, p. 82, line 24 - p. 105, line 19;

b. Dr. Evangeline J. Funk, biologist (via offer of proof). Transcript of Proceedings, February 26, 1998, p. 106, lines 19 - 21.

c. Glen Lau, geotechnical engineer (via offer of proof). Transcript of Proceedings, February 26, 1998, p. 106, lines 21 - 24.

d. Amy Dunn, archaeologist (via offer of proof and testimony). Transcript of Proceedings, February 26, 1998, p. 106, line 24 - p. 109, line 20.

e. Yoichi Ebisu, acoustical engineer. Transcript of Proceedings, February 26, 1998, p. 110, line 8 - p. 115, line 13.

36. On February 27, 1998, the Land Use Commission received into evidence oral and/or written testimony from the following individuals:

a. Leslie Vernon Mathine, civil and structural engineer. Transcript of Proceedings, February 27, 1998, p. 122, line 8 - p. 148, line 15.

b. Earle H. Ifuku, MECO Manager for Customer Service. Transcript of Proceedings, February 27, 1998, p. 149, line 7 - p. 196, line 7.

c. Arthur Seki, Energy Specialist for Hawaiian Electric Company, Inc. Transcript of Proceedings, February 27, 1998, p. 196, line 22 - p. 244, line 9.

d. Dr. Thomas A. Schroeder, meteorologist. Transcript of Proceedings, February 27, 1998, p. 244, line 20 - p. 267, line 12.

37. On April 8, 1998, the Land Use Commission received into evidence oral and/or written testimony from the following individuals:

a. James Michael Silva, electrical engineer. Transcript of Proceedings, April 8, 1998, p. 11, line 5 - p. 12, line 19.

b. Stanley K. Kiyonaga, MECO Manager for Production. Transcript of Proceedings, April 8, 1998, p. 12, line 22 - p. 43, line 14.

c. Scott W.H. Seu, environmental scientist for Hawaiian Electric Company, Inc. Transcript of Proceedings, April 8, 1998, p. 43, line 22 - p. 103, line 5.

d. Ted S. Kawahigashi, traffic engineer. Transcript of Proceedings, April 8, 1998, p. 103, line 8 - p. 120, line 6.

e. Daniel Lum, hydrologist/geologist. Transcript of Proceedings, April 8, 1998, p. 120, line 12 - p. 138, line 11.

f. Albert Lono Lyman, economist/land use planner. Transcript of Proceedings, April 8, 1998, p. 138, line 14 - p. 150, line 10.

g. Christopher L. Hart, landscape architect/land use planner. Transcript of Proceedings, April 8, 1998, p. 150, line 17 - p. 170, line 15.

h. Mark R. Willey, project manager/environmental planner. Transcript of Proceedings, April 8, 1998, p. 170, line 18 - p. 208, line 18.

38. On April 9, 1998, the Land Use Commission received into evidence oral and/or written testimony from the following individuals:

a. James C. Clary, Jr., meteorologist/air quality consultant. Transcript of Proceedings, April 9, 1998, p. 8, line 24 - p. 78, line 25.

b. Dr. Robert E. Paull, plant physiologist. Transcript of Proceedings, April 9, 1998, p. 79, line 10 - p. 100, line 7.

c. Jan Randall Medusky, real estate appraiser. Transcript of Proceedings, April 9, 1998, p. 101, line 6 - p. 130, line 16.

39. On April 23, 1998, the Land Use Commission received into evidence oral and/or written testimony from the following individuals:

a. William A. Bonnet, MECO President. Transcript of Proceedings, April 23, 1998, p. 23, line 4 - p. 67, line 25.

b. David Blane, Director of Planning, County of Maui. Transcript of Proceedings, April 23, 1998, p. 68, line 5 - p. 95, line 5.

c. Dr. Steven Moser, M.D. (not qualified as an expert witness before the Land Use Commission). Transcript of Proceedings, April 23, 1998, p. 95, line 22 - p. 131, line 18.

d. Abe Mitsuda, Head of Land Use Division, State of Hawaii Office of Planning. Transcript of Proceedings, April 23, 1998, p. 131, line 21 - p. 146, line 6.

e. Marc Drehsen, meteorologist. Transcript of Proceedings, April 23, 1998, p. 149, line 1 - p. 161, line 6.

f. Ian-Chan-Hodges, qualified as an expert by the Land Use Commission only on issues of "community economics and banking issues" (Transcript of Proceedings, April 23, 1998, p. 178, lines 11 - 16). Transcript of Proceedings, April 23, 1998, p. 165, line 19 - p. 205, line 19.

40. On April 24, 1998, the Land Use Commission received into evidence oral and/or written testimony from the following individuals:

a. Roy Smith, farmer. Transcript of Proceedings, April 24, 1998, p. 12, line 17 - p. 55, line 5.

b. Erik Frye, farmer/agricultural ecologist. Transcript of Proceedings, April 24, 1998, p. 55, line 18- p. 89, line 3.

c. Ian Chan-Hodges (continuation of prior testimony), qualified as an expert by the Land Use Commission only on issues of "community economics and banking issues" (Transcript of Proceedings, April 23, 1998, p. 178, lines 11 - 16). Transcript of Proceedings, April 24, 1998, p. 89, line 19 - p. 105, line 6.

d. Richard Haake, Managing Director, County of Maui. Transcript of Proceedings, April 24, 1998, p. 106, line 8 - p. 125, line 4.

e. Dick Mayer, economist. Transcript of Proceedings, April 24, 1998, p. 125, line 8 - p. 198, line 18.

41. The Land Use Commission, having heard and examined the testimony, evidence and argument presented during both the Public Testimony portion of this proceeding and the Contested Case portion of this proceeding, the various Proposed Findings of Fact, Conclusions of Law, Decision and Order submitted by the various parties and the objections, responses, and exceptions submitted by the various parties, hereby makes the following findings of fact and conclusions of law:

**5. Final Environmental Impact Statement Determination**

42. An Environmental Impact Statement is not required in proceedings seeking a boundary amendment from the Land Use Commission to convert land classified for

agricultural use into land classified for urban use. Transcript of Proceedings, April 8, 1998, p. 172, lines 10-13.

43. Nevertheless, MECO prepared and submitted an Environmental Impact Statement for the proposed project as a requirement for a Community Plan amendment for the County of Maui. Transcript of Proceedings, April 8, 1998, p. 172, lines 14-17.

44. The Land Use Commission's decision-making criteria and standards for boundary amendments reclassifying agricultural land use district into urban land use district are addressed in MECO's Environmental Impact Statement. Transcript of Proceedings, April 8, 1998, p. 172, lines 18-24.

45. The project's Final Environmental Impact Statement was accepted by the County of Maui Planning Department on November 24, 1997. Transcript of Proceedings, April 8, 1998, p. 189, line 24 - p. 190, line 3. See also Exhibits C-103 and C-104.

**6. Exhibits**

46. On February 26, 1998, the Land Use Commission received and admitted into evidence a memorandum dated December 10, 1997 from Rae M. Loui, Deputy Director, Commission on Water Resource Management to Richard Egged, Jr., as LUC Exhibit "1". Transcript of Proceedings, February 26, 1998, p. 5, line 20 - p. 7, line 4.

**a. Exhibits Admitted into Evidence from MECO**

47. MECO's Petition for District Boundary Amendment from Agricultural to Urban, filed October 24, 1997, was admitted as Exhibit A ("Petition").

48. MECO's Project Maps, included in MECO's Petition, were admitted as Exhibit A-1.

49. MECO's Land Ownership Documentation, included in MECO's Petition, were admitted as Exhibit A-2.

50. MECO's Letter of Authorization, included in MECO's Petition, was admitted as Exhibit A-3.

51. MECO's Final Environmental Impact Statement, dated November 1997, was admitted as Exhibit A-4.

52. The Financial Statement of MECO, included in MECO's Petition, was admitted as Exhibit A-5.

53. MECO's siting studies, included in MECO's Petition, were admitted as Exhibit A-6.

54. The resumes and/or curriculum vitae of MECO's witnesses were admitted as Exhibit B.

55. Documentary evidence was received from MECO and admitted as Exhibits C-1 through C-118.

56. Written summaries of the testimony of MECO's experts were admitted as Exhibits D-1 through D-21.

**b. Exhibits Admitted into Evidence from County of Maui**

57. The written Testimony of the Maui Planning Department, filed on or around January 26, 1998, was admitted as Exhibit 1 from the County of Maui.

**c. Exhibits Admitted into Evidence from State of Hawaii**

58. The written Testimony of the Office of Planning in Support of the Petition, filed on or around February 12, 1998, was admitted as Exhibit 1 from the State of Hawaii.

**d. Exhibits Admitted into Evidence from Maui Tomorrow**

59. Documentary evidence was received from Maui Tomorrow and admitted as Maui Tomorrow's Exhibits 1 through 21.

**B. Description of the Property**

**1. General Location**

60. The property is approximately 65.7 acres of land located at the intersection of Pulehu Road and Waiko Road in the Wailuku and Makawao Districts of Maui, Hawaii and is identified as TMK Nos. 3-8-03:23 and 24. The property is located approximately three and a half miles southeast of Kahului, approximately five miles northeast of Kihei, four miles west of Pukalani, and seven miles northwest of Kula. Transcript of Proceedings, February 26, 1998, p. 9, line 24 - p. 11, line 9. See also Exhibits C-3 and C-9.

**2. Present and Previous Land Use**

61. The property consists of land historically and currently cultivated in sugarcane, cane haul roads, and irrigation ditches. None of the property is improved. Final Environmental Impact Statement, November 1997, p. 4-20.

62. The subject property consists of approximately 66 acres located within a plantation of approximately 36,000 acres. Hawaiian Commercial and Sugar Co. ("HC&S"), a subsidiary of Alexander & Baldwin-- Hawaii, cultivates sugarcane on the proposed site and the surrounding area. Furthermore, the Department of Agriculture of the State of Hawaii and HC&S have indicated that HC&S is in the process of increasing its inventory of productive lands by 1400 acres. Transcript of Proceedings, April 8, 1998, p. 154, line 11 - p. 156, line 10. See also Exhibit C-85.

63. Prior to purchasing the property, MECO obtained approval from the Public Utilities Commission of the State of Hawaii. Transcript of Proceedings, February 26, 1998, p. 92, lines 9-19. See also Exhibit C-115. The property is presently leased to HC&S for sugarcane cultivation. The lease is on a month-to-month basis for the project site until the area is required for development by MECO for utility purposes or December 31, 2004, whichever comes first, or if cultivation of crops on the premises is no longer permissible by law. HC&S must use the premises solely for the purposes of crop cultivation and ancillary agricultural activities. Petition for Land Use District Boundary Amendment, filed October 24, 1997 ("Petition"), pp. 2-3.

64. For over 100 years, including the past two years, the property has been in continuous active sugarcane cultivation. HC&S also holds easements within the property for maintenance and use of its irrigation ditch, identified as easements 1 to 4 within Exhibit 2 to the Petition. Easements 5 to 11 described within Exhibit 2 to the Petition were previously granted to MECO for transmission line use. See Petition, pp. 2-3.

65. Lands immediately surrounding the site are owned by Alexander & Baldwin-Hawaii and are used by HC&S for sugarcane cultivation. Across Pulehu Road from the site are a sanitary landfill, owned and operated by the County of Maui, and a quarry, operated by Ameron HC&D. Both the landfill and the quarry have proposed expansion, as granted by Land Use Commission Special Permits. Petition, p. 3.

**3. Ownership, Leases, Agreements to Develop**

66. MECO is the fee owner of the property. The land surrounding the property is owned by Alexander & Baldwin--Hawaii, the corporate parent of HC&S. Alexander & Baldwin supports the petition. Letter from G. Stephen Holaday, Plantation

Manager, dated February 20, 1998, filed with the Land Use Commission on February 23, 1998.

67. In the immediate vicinity of the property are two parcels used for heavy industrial uses that are subject to special use permits. One such parcel is used as the Central Maui Landfill by the Department of Public Works and Waste Management, Solid Waste Division of the County of Maui (Docket No. SP97-390). The subject property is located approximately one-quarter of one mile from the Central Maui Landfill. Transcript of Proceedings, February 26, 1998, p. 84, lines 18-23. The other parcel subject to special use permit is used as a quarry by Ameron HC&D (Docket No. 77-271).

**4. Elevation; Slope; Rainfall**

68. Elevations at the site range from approximately 335 feet above mean sea level on the western side to 365 feet above mean sea level on the eastern side. The average slope from the southeast to northwest is about one degree. Final Environmental Impact Statement, dated November 1997, p. 4-20. Annual rainfall in the area is about 20 inches. Id., p. 4-1.

**5. SCS Soil Classification**

69. The United States Department of Agriculture Soil Conservation Service ("SCS") classified the soils at the site as Waiakoa Series, silty clay loam (WeB). Final Environmental Impact Statement, November 1997, p. 4-20.

**6. Land Study Bureau Classification**

70. The University of Hawaii Land Study Bureau's detailed classification designates the land as "A". This classification system rates lands on a scale of "A" to "E" reflecting land productivity characteristics. Lands designated with "A" are considered to be of

highest productivity, with "E" rated lands ranked the lowest. The proposed use of the site does not significantly diminish the available supply of land used for agricultural activities, nor will it have any adverse impact on the remaining adjacent agricultural uses. Petition, p. 9.

**7. ALISH Classification**

71. The property is listed as "prime agricultural land" according to the Agricultural Lands of Importance to the State of Hawaii (ALISH) Map. Petition, p. 9.

**8. Flood Insurance Study Designation**

72. The project site is located in Zone C of the Federal Emergency Management Agency's Flood Insurance Rate Map, areas experiencing minimal flooding. According to the National Flood Insurance Program, Zone C areas are not considered to be flood plain areas. Final Environmental Impact Statement, November 1997, p. 4-25.

**C. Proposal for Reclassification**

**1. Summary of Proposed Uses**

73. Petitioner proposes to design, construct, and operate a 232-megawatt (MW) electrical generating station on 65.7 acres of land located along Pulehu and Waiko Roads in central Maui. Related 69 kilovolt (kV) transmission lines from the site to substations at the Paia Sugar Mill and Puunene Sugar Mill are also proposed as part of this project. Distribution lines (12 kV) may also lead from the proposed generating station to Puunene. In addition, the Petitioner may relocate its existing transmission and distribution base yard and related support facilities from its current location in Kahului to the new facility. Petition, p. 3. See also Transcript of Proceedings, February 26, 1998, p. 105, lines 9-17.

74. The proposed project will be a heavy industrial use and will be located in close proximity to two other heavy industrial uses, the central Maui landfill and the

Ameron HC&D quarry. The site is adjacent to agricultural district lands that will remain in sugar cultivation. The proposed project will be compatible with these uses. Petition, p. 7. See also Transcript of Proceedings, April 8, 1998, p. 181, lines 9-24 and Exhibit C-108.

**2. Affordable/Group Housing**

75. Directly, this project does not contain any proposal for affordable or group housing. Indirectly, the electricity provided by the Waena Generating Station will support continued economic expansion on the Island of Maui and will provide the necessary energy to support affordable housing programs as they are developed. Petition, p. 24 and Transcript of Proceedings, April 8, 1998, p. 187, lines 7-10.

**3. Construction Costs**

76. The estimated costs for construction of the initial dual train combined cycle combustion turbine are approximately $105.4 million. Cost of construction of the entire Waena Generating Station project, excluding land purchase costs, is estimated at approximately $415.7 million. Petition, p. 4 and Transcript of Proceedings, February 26, 1998, p. 92, line 20 - p. 93, line 11. See also Exhibit C-8.

**4. Development Timetable**

77. When completed, the Waena Generating Station will produce 232 megawatts of power through four 58-MW dual-train, combined cycle combustion turbines ("DTCC"). Engineering for the first component of generating capacity will begin in the year 2000. The construction start date for sitework is scheduled for the year 2002, and the first 20-MW combustion turbine scheduled for operation by the year 2004. Completion of the first 58-MW DTCC unit is planned for 2006. In accordance with section 15-15-50(19) of the LUC Rules, the entire 65.7 acre site will be developed for the installation of the first unit of

generation by the year 2006. This will include full grading of the site and the installation of necessary infrastructure, such as drainage improvements, domestic wastewater systems, and roads required to support all four DTCC generating units. As the need for additional generation capacity occurs, the subsequent DTCC units will be placed upon the already improved site. Electrical generating activities, HC&S easements, transmission line corridors, leach fields and other supporting urban uses will maximize the amount of usable area available on the property. The necessary permitting process includes approximately 20 permits to be issued from a variety of governmental agencies before construction may begin. Those permits are expected to take approximately four years to obtain. Petition, pp. 3-4. See also Transcript of Proceedings, February 26, 1998, p. 89, line 12 - p. 94, line 20 and Exhibits C-4, C-6, C-7, C-8, and C-107 and Final Environmental Impact statement, dated November 1997, p. 3-15, table 3-1.

**D. Petitioner's Financial Capability**

78. MECO is a subsidiary of Hawaiian Electric Company, Inc. ("HECO"), which in turn is a wholly owned subsidiary of Hawaiian Electric Industries ("HEI"), a holding company with publicly traded stock. MECO is regulated by the Public Utilities Commission. MECO has concluded that the proposed project meets internal economic feasibility criteria. As a subsidiary of a publicly traded company, MECO has access to sufficient economic resources required to develop the project. MECO can request the authority from the Public Utilities Commission to make expenditures for construction of the proposed facility and recapture costs through the electricity rates paid by the Petitioner's customers. In addition, HECO is also able to issue bonds and stock to finance the project. Petition, p. 24. See also Transcript of Proceedings, April 8, 1998, p. 187, lines 16-21 and Exhibit C-109. The

financial statements submitted by MECO indicate that it has the financial capability to proceed with the project. Transcript of Proceedings, April 23, 1998, p. 25, line 3 - p. 26, line 6 and Exhibit A-5.

**E. State and County Plans and Programs**

**1. County of Maui**

**a. Support for the Petition**

79. The County of Maui supports the petition for district boundary amendment. The County of Maui Planning Department is not proposing any conditions for the boundary amendment. Transcript of Proceedings, April 23, 1998, p. 69, line 6 - p. 72, line 3. See also Testimony of the Maui Planning Department, filed January 26, 1998.

**b. Conformity with Maui County General Plan**

80. The County of Maui Planning Department has confirmed that the proposed project is consistent with the Maui County General Plan (1990) and that it conforms with the goals and objectives outlined in the Wailuku-Kahului Community Plan. Testimony of the Maui Planning Department, filed January 26, 1998, pp. 9-12. See also Transcript of Proceedings, April 8, 1998, p. 157, line 23 - p. 158, line 1 and Final Environmental Impact Statement, dated November 1997, pp. 5-17 to 5-23.

81. MECO has also applied for a Community Plan Amendment. Pursuant to section 15-15-24 of the LUC Rules, power generation on the proposed site is a use permitted by the County of Maui on lands zoned "Heavy Industrial." MECO is pursuing the necessary County of Maui approvals to rezone the site to the "Heavy Industrial" zoning classification. The County of Maui's decision for a zoning reclassification cannot occur until

the Land Use Commission has approved redesignation of the site from State of Hawaii agricultural land use district to urban land use district. Petition, pp. 23-24.

**2. State of Hawaii**

**a. Support for the Petition**

82. The Office of Planning of the State of Hawaii supports the petition for district boundary amendment subject to eleven conditions set forth in its written testimony. Transcript of Proceedings, April 23, 1998, p. 132, line 14 - p. 135, line 12 and p. 142, lines 4-19. See also Testimony of the Office of Planning in Support of the Petition, filed February 12, 1998. MECO has agreed to comply with the conditions proposed by the Office of Planning of the State of Hawaii with only minor clarifications to the conditions. Transcript of Proceedings, April 23, 1998, p. 27, line 9 - p. 31, line 16. The Office of Planning of the State of Hawaii has stated no objections to the modifications or clarifications made by MECO. Transcript of Proceedings, April 23, 1998, p. 134, line 18 - p. 135, line 11. The eleven conditions of the Office of Planning of the State of Hawaii, as modified and clarified by MECO without objection from the Office of Planning of the State of Hawaii, are set forth below as conditions one through eleven in the proposed Decision and the proposed Order.

**b. Conformity with Hawaii State Plan**

83. The Office of Planning of the State of Hawaii has stated that "the proposed reclassification is generally consistent with the objectives and policies [of the Hawaii State plan] for the economy, facility systems energy and telecommunications." Testimony of the Office of Planning in Support of the Petition, filed February 12, 1998, pp. 56-57. See also Transcript of Proceedings, April 23, 1998, p. 142, lines 4-19 and section N (Conformance with Hawaii State Plan) below.

84. The Office of Planning of the State of Hawaii has confirmed that the proposed Waena Generating Station will comply with sections 226-14 and 226-18, HRS. Testimony of the Office of Planning in Support of the Petition, filed February 12, 1998, pp. 23-25. See also section N (Conformance with Hawaii State Plan) below.

**3. Changed Land Use**

85. The Department of Agriculture of the State of Hawaii does not object to the requested district boundary amendment. See Exhibit C-85.

86. The change in land use from agriculture to urban will remove 65.7 acres from active sugarcane cultivation. Impacts to agricultural lands from land use changes can take three forms: impacts from the new land use on existing agricultural operations; impacts from agricultural operations on the new land use; and indirect impact of the new land use on agricultural potential. Petition, p. 25.

87. Impacts on Existing Agricultural Operations. Construction and operation of the proposed Waena Generating Station will be a compatible land use to the existing planned land uses in the vicinity of the project site. Existing easements with HC&S will be maintained throughout the development of the proposed project. Site access will occur from Pulehu Road and will not conflict with cane hauling operations along plantation roads. Activities associated with the proposed generating station will not negatively impact cultivation activities of surrounding properties. Petition, p. 25.

88. Agricultural Impacts on Proposed Project. In some instances, the continued agricultural operations adjacent to a new land use will impact that new use. When this occurs, it is sometimes necessary for the agricultural uses to be modified. In the case of the proposed Waena Generating Station, MECO and HC&S have developed a cooperative

relationship to ensure compatibility of agricultural and generating station operations. Petition, p. 25.

89. As demonstrated at MECO's Maalaea facility, little impact to generating facilities occurs from adjoining sugarcane cultivation. Prior to cane burning or harvesting activities, HC&S notifies MECO. MECO safety personnel keep an active watch during actual burning and facility employees are advised to have breathing aides and other protective devices immediately available in case of shifts in wind. HC&S operates under established field burning protocols to keep cane fires away from adjoining property boundaries. In addition, a 15-foot landscaped perimeter will be planted around the proposed generating station, further removing it from the adjoining cane fields. Because of the long-standing relationship between HC&S and MECO as well as the established protocols, continued agricultural operations should not need to be modified to accommodate the proposed generating station. Petition, pp. 25-26.

90. Impacts on Agricultural Lands. According to the Maui County Data Book (County of Maui, 1996), approximately 360,000 acres of land in Maui County is classified as "farmland." Of this acreage, approximately 89,000 acres are considered cropland, 36,500 of which are cultivated by HC&S and 11,000 of which are cultivated by Maui Land & Pineapple Co., Ltd. ("ML&P"). The subject parcel represents approximately 0.02 percent of Maui County's total farmland, 0.07 percent of Maui Country's total cropland, and only 0.18 percent of HC&S total acreage. In comparison to the approximately 1.7 million acres of total farmland listed within the entire State of Hawaii, the 65.7 acre site represents the removal of an even more insignificant 0.004 percent. Petition, p. 26. See also Transcript of Proceedings, April 8, 1998, p. 187, line 23 - p. 189, line 3 and Exhibit C-109.

91. Currently, HC&S is in the process of expanding their current acreage under active cultivation by 280 acres near Kuihelani Highway as part of a strategy to reuse ML&P's cannery effluent. In addition, HC&S is working towards adding another 1,100 acres of land formerly cultivated by Wailuku Agribusiness. Petition, p. 26.

92. The change in land use from agriculture to urban will remove 65.7 acres of "prime agricultural land," as defined by the Agricultural Lands of Importance to the State of Hawaii (ALISH) map, from active cultivation. However, this represents an insignificant amount of HC&S's total acreage under cultivation and an even more insignificant amount of Maui County's and the State of Hawaii's total farmland. In addition, HC&S is undergoing expansion plans which will more than replace these 65.7 acres of cropland. Petition, pp. 26-27. The subject property of approximately 66 acres is located within a plantation of approximately 36,000 acres and HC&S is in the process of increasing its inventory of productive lands by 1400 acres. Transcript of Proceedings, April 8, 1998, p. 154, line 11 - p. 156, line 10. See also Exhibit C-85. Removal of such an insignificant amount of farmland from active production will have no adverse impact upon either the County's or the State's overall agricultural production capabilities. Petition, pp. 26-27.

93. The removal of 65.7 acres of prime agricultural lands from production also must be weighed against the public use and public good derived from any proposed land use change. The proposed Waena Generating Station is planned to provide the necessary energy to both meet and allow the expanding energy needs of the Island of Maui's residents and economy and is reasonably necessary for urban growth. The additional energy will also allow for continued and expanded agricultural operations by ensuring reliable power for irrigation uses and processing operations. Petition, p. 27.

94. Because the amount of prime agricultural land being removed is small, and because HC&S will more than replace the loss, the proposed project is not considered to have a significant adverse impact on overall prime agricultural land production. The proposed project will have a beneficial impact by providing reliable power to support continued and expanded agricultural operations and is reasonably necessary for urban growth on the Island of Maui. Petition, p. 27.

95. The proposed boundary amendment conforms to the Maui County General Plan. Transcript of Proceedings, April 8, 1998, p. 157, lines 23-24.

96. The proposed boundary amendment conforms to the Wailuku/Kahului Community Plan. Transcript of Proceedings, April 8, 1998, p. 157, line 25 - p. 158, line 1.

**F. Need for the Proposed Development**

97. The need for additional generating capacity has been identified by MECO in its Plan from the 1994-2013 Integrated Resource Planning ("IRP") which was approved by the Public Utilities Commission of the State of Hawaii. See Exhibit C-116. MECO's capacity planning criteria for addition of generation in MECO's long-range expansion studies apply the following standard: the sum of the reserve ratings of all available units minus the reserve rating of the largest available unit minus the reserve ratings of any units on maintenance must be equal to or greater than the system peak load to be supplied. This criteria has been reviewed and approved by the Public Utilities Commission of the State of Hawaii. Transcript of Proceedings, April 8, 1998, p. 15, line 25 - p. 17, line 5. See also Exhibit C-116.

98. The analyses presented in MECO's 1997 IRP Annual Evaluation Report dated June 1997 confirmed that MECO must continue to proceed with its supply-side

action activities which include plans for expanded power generating capacity with the phased installation of a dual train combined cycle combustion turbine plant at a new "green field" site in central Maui. The phased construction of the power plant on a new site requires a significant number of preliminary tasks to be completed early in the project schedule. Transcript of Proceedings, February 26, 1998, p. 91, line 11 - p. 92, line 8. Transcript of Proceedings, February 27, 1998, p. 159, lines 5-16 and p. 160, line 23 - p. 161, line 17 and p. 163, line 4 - p. 167, line 7. Transcript of Proceedings, April 8, 1998, p. 15, line 14 - p. 19, line 24. See also Exhibits C-17, C-18, C-19 and C-107.

99. At present, MECO's reserve margin of power capacity is insufficient to fulfill peak demand in the event of an unexpected shut down of a large power generating unit. On March 11, 1998, certain areas of Maui were blacked out when one of MECO's largest units at the Maalaea Generating Station shut down unexpectedly. Consequently, the only way for MECO to maintain system integrity was to interrupt electrical services to portions of the island. Transcript of Proceedings, April 8, 1998, p. 27, lines 7-20.

100. MECO's IRP is a comprehensive ongoing process for near and long term energy planning that has been required of all utilities by the Public Utilities Commission of the State of Hawaii. In its IRP process, MECO has involved an advisory group comprised of 24 different organizations representing key stakeholders from the state and county government, community, business, environmental groups and individual citizens from Maui, Lanai, and Molokai for over five and one-half years. Transcript of Proceedings, February 27, 1998, p. 149, line 23 - p. 151, line 23. See also Exhibits C-116 and C-14.

101. MECO's 1994-2013 IRP Plan and its most recent 1997 IRP Annual Evaluation Report have consistently confirmed the need for expanded power generating

capacity by the year 2004, taking into consideration the forecast of customer demand. That forecast includes the estimated impacts of MECO's Demand Side Management programs, purchase power and unit retirement assumptions. An annual review of MECO's need for additional generating capacity and the continuing viability of Phases II and III of MECO's DTCC combustion turbine No. 2 expansion project at the Maalaea Generating Station was submitted to the Public Utilities Commission of the State of Hawaii as Annual Review No. 3 in Docket No. 7744 on January 15, 1998. The report incorporated findings and conclusions using the best available information at the time including current planning assumptions regarding: sales; growth; impact of demand side management conservation programs; unit retirements and life extension; and purchase power contract extensions. Information in the report supported the need for additional power generation capability by the year 2004, beyond the current expansion of the DTCC combustion turbine No. 2 expansion project at the Maalaea Generating Station. Transcript of Proceedings, February 27, 1998, p. 157, line 2 - p. 161, line 14. See also Exhibits C-17 and C-19.

102. Starting with independent reports (California Energy Commission Energy Technology Status Report and Black & Veatch Generation Technology Assessment Report), MECO has undertaken an analysis of approximately 65 available and emerging technologies for power generation. Transcript of Proceedings, February 27, 1998, p. 197, line 1 - p. 201, line 4. See also Exhibits C-14, C-20 and C-21. The consistent conclusion reached by that analysis is that the most reliable and cost-effective method of power generation is oil fired turbines. In reaching this conclusion, MECO has considered alternative fuel energy sources such as fuel cells as well as renewable energy sources such as biomass, wind, sun and water power. The alternative technology is either insufficient to meet the demand, is

incapable of providing reliable energy when demanded, or in most cases, is prohibitively expensive. Transcript of Proceedings, February 27, 1998, p. 211, line 1 - p. 218, line 25 See also Exhibits C-22, C-23 and C-117.

103. The generating units planned for the Waena Generating Station will have the capability to burn not only diesel fuel, but other gaseous fuels as well, should the technical feasibility and economics of alternative fuels be demonstrated in the future. The planned installation of units over a 30-year span will also allow MECO to take advantage of new technologies for power generation at such times as they may be appropriate. Transcript of Proceedings, April 23, 1998, p. 47, line 22 - p. 48, line 15 and p. 64, lines 3-11.

104. The power generation capacity of the Waena Generating Station at full buildout will be 232 megawatts. To produce that much capacity from wind turbines, approximately 1600 acres of land would be required. Transcript of Proceedings, February 27, 1998, p. 217, lines 5-16.

105. Wind turbines are as-available technologies. When the wind does not blow, the wind turbines will not work. Transcript of Proceedings, February 27, 1998, p. 218, line 13 - p. 220, line 1.

106. MECO is different from mainland utilities. Among other differences, MECO is smaller than mainland utilities and it does not have interconnections with other states, as do mainland utilities. As a result, reliability is very important. When the wind does not blow, MECO still must provide energy. Transcript of Proceedings, February 27, 1998, p. 211, line 10 - p. 212, line 1.

107. There is a limit to the amount of wind turbines that the MECO electrical system can include. This became apparent during gusty winds on the Big Island of

Hawaii when three wind farm facilities jerked the electrical grid. Transcript of Proceedings, February 27, 1998, p. 221, line 17 - p. 222, line 9.

**G. Economic Impacts**

108. The Waena Generating Station project is not a primary economic activity, thus it is not expected to influence population growth on the island of Maui. The Waena Generating Station will meet the anticipated growth demands attributed to the island's primary economic activities and secondary and tertiary growth induced by the primary economic activities. The Waena Generating Station project will not be a generator of industrial, urban, or rural growth into either the area immediately surrounding the project site or elsewhere on the Island of Maui. Transcript of Proceedings, April 8, 1998, p. 142, line 22 - p. 143, line 9.

109. The operation of the proposed facility will create approximately 46 new jobs directly. The project will require between 80 to 100 construction workers during the initial installation. Indirectly, the project could create an additional 52 jobs statewide. The electricity provided by the proposed facility will support the continued economic expansion of the Island of Maui and provide the necessary energy to support affordable housing programs as they are developed. Petition, p. 24 and Transcript of Proceedings, April 8, 1998, p. 140, line 19 - p. 141, line 4 . Accordingly, the project is expected to have a positive effect on continued economic growth and opportunities for employment. Transcript of Proceedings, April 8, 1998, p. 187, lines 4-6 and Exhibit C-109.

**H. Social Impacts**

110. The Waena Generating Station will have a positive effect on the provision of essential functions, including expansion of the Maui Memorial Hospital. See

Testimony from David Patton, Chief Executive Officer for Maui Memorial Hospital, Transcript of Proceedings, February 26, 1998, p. 45, line 16 - p. 46, line 23.

111. Construction of the Waena Generating Station will not have a significant impact on property values. Alexander and Baldwin/HC&S confirmed that there would be no significant impacts on the value of the property immediately surrounding the Waena Generating Station. The only discernable impact to the property immediately surrounding the project would be the minor effect on sugar cane production operations such as crop dusting and harvesting activities caused by the physical presence of the structure on the property and the erection of utility lines. Transcript of Proceedings, April 9, 1998, p. 103, line 8 - p. 108, line 6. See also Exhibit C-111.

112. Buyers and realtors involved in real estate transactions in the immediate vicinity of the Maalaea Generating Station confirm that the presence and operation of the Maalaea Generating Station had virtually no effect on the prices paid for residential units within only one mile of that facility. The residential development that is closest to the proposed Waena Generating Facility is, by contrast, nearly three miles away. Transcript of Proceedings, April 9, 1998, p. 109, lines 7 - 21 and p. 111, lines 7-10. See also Exhibit C-111.

113. The Maalaea study and study of the power generating station located at Keahole on the Island of Hawaii confirms that there may be a small effect on residential property values in the immediate vicinity of the facility, but that the effect on property values diminishes to relatively minimal and becomes nonexistent as you proceed approximately one-half mile away from the facility. Study of the power generating station at Keahole also confirms that there is virtually no impact on the value of agricultural land in the immediate

vicinity of the facility. Transcript of Proceedings, April 9, 1998, p. 110, lines 1-25 and p. 113, line 17 - p. 114, line 13. See also Exhibit C-111. The land in the immediate vicinity of the proposed Waena Generating Station is agricultural land. Accordingly, there is no evidence that the Waena Generating Station would have any adverse impact on property values. Transcript of Proceedings, April 9, 1998, p. 111, lines 1-10. See also Exhibit C-111.

**I. Impacts Upon Resources of the Area**

114. The site was selected after undertaking approximately 10 studies of potential sites all over the Island of Maui. That study process began in 1989 and concluded in 1995 with a recommendation that the current site be selected. Transcript of Proceedings, February 26, 1998, p. 85, lines 1-16 and p. 86, lines 6- p. 89, line 7. See also Exhibit C-10.

115. Factors considered in the site selection process for the proposed Waena Generating Station included: the compatibility of using the site for generation with the nearby quarry and landfill and the surrounding agricultural uses; the site's separation from more sensitive urban uses; and the site's centralized location within the MECO system. The centralized location will allow the station to provide reliable power and transmission of electricity to the Island of Maui and will allow for additional growth. Petition, p. 8. Transcript of Proceedings, April 8, 1998, p. 14, line 12 - p. 15, line 3 and Exhibit C-2. See also Transcript of Proceedings, April 8, 1998, p. 181, line 9- p. 183, line 2 and Exhibit C-108.

116. In the final evaluation, three possible sites were examined with the proposed infrastructure layouts. 37 screening factors were applied including, among others: land ownership use and regulation, air quality, soils, geography, topography, ground water, wastewater disposal, surface water, noise, biology, cultural resources, natural hazards, engineering, traffic transportation, capital costs, infrastructure costs, and land costs.

Transcript of Proceedings, February 27, 1998, p. 122, line 19 - p. 130, line 21. See also Exhibits C-9, C-56 and C-57.

117. In the site selection process, MECO investigated community acceptance of the various proposed sites. To that end, MECO held 11 meetings throughout the Maui community, including Kihei, Kula, Pukalani, Makawao, Paia, and Kahului, among others. The Kihei Community Association submitted a petition to the Maui County Council expressing appreciation for MECO's presentation and requesting that the present site be selected for MECO's new facility. Transcript of Proceedings, February 26, 1998, p. 87, line 17 - p. 89, line 11. See also Exhibit C-11.

118. Existing sugar mill sites on Maui and the industrial area near Kahului Hobron Harbor were analyzed and considered. However, existing industrial areas within the central Maui urban areas were eliminated from site consideration due to constrained lands, air quality concerns, or incompatible adjacent land uses. The proposed site is approximately 3 miles from Puunene, the nearest urban center. The site is not adversely affected by constrained lands, air quality concerns, or incompatible adjacent land uses. Siting the Waena Generating Station adjacent to existing urban areas would be inappropriate, as the facility would represent an incompatible land use to adjacent urban commercial and residential areas. Petition, p. 8.

**1. Agricultural Resources**

119. The project does not significantly diminish the supply of land used for agricultural activities. Petition, p. 24. Transcript of Proceedings, April 8, 1998, p. 186, line 1 - p. 187, line 3 and Exhibit C-109. There will be no significant impacts to crops caused by either sulfur dioxide or ethylene as a result of emissions from the Waena Generating Station.

Transcript of Proceedings, April 8, 1998, p. 83, line 7 - p. 86, line 18. See also Appendix C-4 to the Final Environmental Impact Statement, dated November 1997.

**2. Flora and Fauna**

120. Site investigations and reconnaissance revealed no endangered species and no critical habitats associated with the site. There is no significant adverse impact expected from the proposed project on flora or fauna. Transcript of Proceedings, February 26, 1998, p. 106, lines 19-21. See also Appendix F to Final Environmental Impact Statement, dated November 1997.

**3. Archaeological/Historical Resources**

121. No cultural or historic resources were discovered and none would be expected to be located at the site. The site has been under continuous active sugarcane cultivation for over 100 years. No traditional or customary rights were discovered at the site and there is therefore no conflict with Article 12, section 7 of the Hawaii State Constitution. The Historic Preservation Division of the State of Hawaii Department of Land and Natural Resources concurred with the findings of MECO's archaeologist. Petition, p. 23 and Transcript of Proceedings, February 26, 1998, p. 106, line 24 - p. 109, line 20. See also Exhibit C-62 and Appendix G to Final Environmental Impact Statement, dated November 1997.

122. There is no significant adverse impact expected from the proposed project on archaeological or historical resources. The Historic Preservation Division of the State of Hawaii Department of Land and Natural Resources has reviewed the archaeologist's report for the subject property and has approved it. Transcript of Proceedings, February 26,

1998, p. 106, line 24 - p. 109, line 20. See also Exhibit C-62 and Appendix G to Final Environmental Impact Statement, dated November 1997..

**4. Ground Water Resources**

123. At full buildout, the project is expected to draw approximately 880,000 gallons of water daily. Approximately 440,000 gallons of water will be consumed in the power generation process. Approximately 440,000 gallons will be disposed into injection wells as wastewater. Prior to release into the injection wells, the water will be transformed from essentially brackish water to a byproduct of demineralized water via dual media filters, reverse osmosis, and other methods of filtration and demineralization. Transcript of Proceedings, February 27, 1998, p. 127, line 1 - p. 133, line 2 and Transcript of Proceedings, April 8, 1998, p. 126, lines 1 - p. 127, line 10. See also Exhibit C-57 and Appendix E to Final Environmental Impact Statement, dated November 1997.

124. Disposal of wastewater from the proposed Waena Generating Station by means of injection wells is feasible. The wastewater returned to the ground water aquifer is suitable for irrigation purposes. The aquifer to which it will be returned is not used for potable water, but instead is used primarily for irrigation. The water requirement for the project can be easily met by drilling and developing onsite wells. The project lies within the Paia Basal Aquifer System which comprises 61 square miles and which the State Water Commission has estimated to have a ground water recharge of 17 million gallons per day and a sustainable yield of 8 million gallons per day. Transcript of Proceedings, April 8, 1998, p. 121, line 10 - p. 122, line 11. See also Appendix E to Final Environmental Impact Statement, dated November 1997 and Exhibit C-63.

125. In the project site, the basal aquifer has an estimated head of 4.8 feet and chloride content of approximately 190-215 mg./liter and is capable of meeting the project's total water requirements which may rise to as much as 880,000 gallons per day. The aquifer is primarily used for sugar cane irrigation. The Paia aquifer is not considered a primary source of potable water because: (1) the aquifer has a chloride content that ranges below and above the potable water limit of 250 mg./liter chlorides; (2) the aquifer is largely recharged artificially by an elaborate irrigation system that delivers an estimated average of 164 million gallons daily of surface water from East Maui; and (3) the groundwater aquifer is susceptible to contamination from overlying existing land uses. Transcript of Proceedings, April 8, 1998, p. 122, line 12 - p. 124, line 3 and p. 124, line 25 - p. 125, line 7 and p. 134, line 22 - p. 135, line 7. See also Appendix E to Final Environmental Impact Statement, dated November 1997.

126. The estimated direction of ground water movement at the project site is generally northwestward. The nearest wells down gradient of the project site lie 1.5 miles away and 3.0 miles away and produce non-potable water, primarily for sugarcane irrigation. The nearest existing municipal well source is located 4.5 miles northwest of the project site. Transcript of Proceedings, April 8, 1998, p. 122, line 12 - p. 124, line 3 and p. 124, line 25 - p. 125, line 7.

127. The project's total water requirement of as much as 880,000 gallons per day can be met by drilling and developing onsite wells, without any adverse impact on groundwater resources or the nearest existing wells. The net withdrawal of groundwater will actually be no more than 440,000 gallons per day due to the return of wastewater to the aquifer by means of the injection wells, and represents only 0.055% of a total of 80.6 million

gallons per day developed by five irrigation wells within a radius of approximately 3 miles. Transcript of Proceedings, April 8, 1998, p. 125, line 8 - p. 130, line 19. See also Exhibit C-56 and Appendix E to Final Environmental Impact Statement, dated November 1997.

128. Wastewater from the project will consist of basal water developed from onsite supply wells that has been demineralized and primarily used for steam generation and nitrogen oxide control. The mineral content of the wastewater is therefore expected to be similar in quality to that of the basal aquifer from which it originates, but more concentrated. The effluent water quality is expected to be very similar to the ambient groundwater quality. The density and temperature of the wastewater will be comparable to the ambient groundwater and its overall quality will be suitable for irrigation purposes. Transcript of Proceedings, April 8, 1998, p. 126, line 1 - p. 128, line 18. See also Appendix E to Final Environmental Impact Statement, dated November 1997.

129. Results of computer modeling indicate that disposal of an average of as much as 440,000 gallons per day of wastewater from the project site by means of injection wells is feasible. Continuous injection at this maximum rate for a period of 10 years will create a plume only 0.45 miles wide by 0.8 miles long. The dispersion, which was not accounted for in the model, will have a mitigating effect causing any concentration differences to dissipate and approach ambient water quality. Transcript of Proceedings, April 8, 1998, p. 128, line 25 - p. 131, line 5. See also Exhibit C-56.

130. The disposal of as much as 440,000 gallons per day of wastewater, which will have a quality similar to that of down gradient wells, will not adversely impact ground water resources or the nearest existing wells. Under maximum conditions, a plume 0.45 by 0.8 mile will be created after ten years of injection and this plume will be mitigated by

natural dispersion of concentrations toward ambient water quality. Transcript of Proceedings, April 8, 1998, p. 125, line 8 - p. 130, line 19. See also Exhibit C-56 and Appendix E to Final Environmental Impact Statement, dated November 1997.

131. There will therefore be no significant adverse impact on ground water resources.

**5. Recreational, Scenic, Cultural**

132. There are no known traditional gathering activities and/or cultural practices affecting the subject property. The site and surrounding area have been utilized for sugar cane cultivation for over one hundred years, and no significant archeological resources were discovered during surveys of the site. Therefore, it is anticipated that the subject property will not have an adverse impact upon any significant archeological or historical resources. Petition, p. 20-21. Transcript of Proceedings, February 26, 1998, p. 106, line 24 - p. 109, line 20. See also Exhibit C-62.

133. The location of the project site does not represent a significant adverse impact to scenic views or vistas, nor does it cause a significant adverse impact on the aesthetic quality of the landscape. Visual impacts can be mitigated through landscaping and choices of paint colors appropriate to the area. The construction and operation of the facility will adhere to existing regulations governing the public health, welfare and safety. Petition, p. 9. The 150 foot height of the stacks at the Waena Generating Station will be lower than the 185 foot height of the existing stack at the Kahului Generating Station. Transcript of Proceedings, April 8, 1998, p. 26, lines 2-8.

134. Visual impact analysis was performed by conducting line-of-sight examinations from various public access points within the central Maui region. View planes

were examined from, among others, Hana Highway, Haleakala Highway, Pulehu Road, and Omaopio Road. Visual simulations were also performed using three-dimensional computer modeling to examine the visual impact of the completed Waena Generating Station from a variety of vistas and distances. In each instance, the visual impact of the completed Waena Generating Station was insignificant, especially considering that the views of the Waena Generating Station are mostly intermittent due to vegetation along the roadways. At night, the visual impact of the security lighting at the Waena Generating Station can be diminished by use of non-reflective surfaces and finishes and hooded downward lighting. Transcript of Proceedings, April 8, 1998, p. 171, line 13 - p. 179, line 3. See also Exhibits C-114, C-86, C-87, C-89, C-90 and C-91.

135. Landscaping will provide visual buffers for motorists traveling along Pulehu Road. The minimum width of that buffer will be 15 feet and it will effectively obscure the site and the activities at the Waena Generating Station from passing motorists. This will be accomplished by taking advantage of the existing six foot berm along Pulehu Road, on top of which trees varying from 20 to 40 feet high will be planted. Transcript of Proceedings, April 8, 1998, p. 150, line 20 - p. 154, line 10. See also Exhibits C-5, C-83, and C-84.

136. The plume from the stack will not have a significant visual impact. Plume opacity will typically be less than 5 percent. Heat waves will be the most visible part of the plume. Transcript of Proceedings, April 8, 1998, p. 69, line 15 - p. 70, line 12.

137. There are no impacts to other natural resource areas. There will be no impact from the Waena Generating Station's emissions to Haleakala National Park visibility areas. The project is not located near tourist areas. Petition, p. 24. Transcript of Proceedings, April 8, 1998, p. 186, line 1 - p. 187, line 3 and Exhibit C-109.

### 6. Coastal/Aquatic Resources

138. The project does not impact the shoreline or marine resources. Petition, p. 24. Transcript of Proceedings, April 8, 1998, p. 186, line 1 - p. 187, line 3 and Exhibit C-109. See also Section O (Conformance with Coastal Zone Management Act) below.

## J. Environmental Quality

### 1. Noise

139. Risks of adverse noise impacts were considered to be near zero at the closest residential communities. Existing background ambient noise levels in the residential communities closest the Waena Generating Station are very low (35 to 45 dBA at night). Compliance with the State Department of Health 70 dBA limit along the station's property lines should be possible with four DTCC units. Waena Generating Station noise levels should not be significantly audible at the closest communities (2 to 3 miles away), with or without sound amplification effects due to meteorological factors. Final Environmental Impact Statement, November 1997, Exhibit A-4, Appendix H. See also Transcript of Proceedings, February 26, 1998, p. 110, line 22 - p. 114, line 24 and Exhibits C-64, C-65 and C-66.

### 2. Air Quality

#### a. Analysis and Studies

140. The analysis and studies conducted by MECO establish that there will be no significant adverse impact on air quality caused by the Waena Generating Station. As early as 1993, MECO was commencing air quality studies to determine the most suitable locations on the Island of Maui for the siting of a power generating facility so as to minimize the impact on air quality. MECO's studies included the gathering of data from two meteorological towers for one year, from February 1994 through January 1995. Another

study was done at the request of the National Parks Service to determine the visibility and air quality impacts on Haleakala National Park. Another study examined the potential impacts on crops. During the study process, the Maui Farm Bureau expressed concern over potential impacts on crops of the proposed generating station. A study was conducted, including consultation with the Maui Farm Bureau, and on February 10, 1998, the Maui Farm Bureau stated in a letter that "we concur with the conclusions of the [MECO studies] dealing with Maui Vortex Potential Impacts and Sulfur Dioxide and Ethylene Emissions . . .. [I]t appears that there may not be any harmful effects on new and existing crops." Transcript of Proceedings, April 8, 1998, p. 44, line 2 - p. 50, line 23 and April 9, 1998, p. 80, line 13 - p. 81, line 8 and p. 83, line 7 - p. 86, line 18. See also Appendix C-1, C-2, C-3 and C-4 to Final Environmental Impact Statement, dated November 1997.

141. The conclusion of the MECO studies was that, of all the candidate sites, the proposed site for the Waena Generating Station was the best site for minimizing air quality impacts. The studies also determined the best stack height for management of the emissions from the facility. Transcript of Proceedings, April 8, 1998, p. 44, line 2 - p. 50, line 23. See also Exhibit C-37 and Appendix C-1, C-2, C-3 and C-4 to Final Environmental Impact Statement, dated November 1997.

142. MECO has evaluated the potential impact of the Waena Generating Station's emissions on air quality under the federal standards set forth in the Clean Air Act, the federal regulations promulgated in the Code of Federal Regulations, and the Administrative Rules of the State of Hawaii Department of Health. The applicable statutes and regulations include the Clean Air Act Amendments of 1990, the federal Prevention of Significant Deterioration ("PSD") and operating permit regulations, and the State covered

source permit regulations. In accordance with these regulations, MECO has evaluated the potential impact of the Waena Generating Station's emissions with respect to compliance with the Ambient Air Quality Standard established by the Environmental Protection Agency of the federal government and the State of Hawaii Department of Health. Transcript of Proceedings, April 8, 1998, p. 53, line 7 - p. 60, line 22. See also Exhibits C-27, C-28.

143. MECO has analyzed potential air quality impacts of the Waena Generating Station based on the current Best Available Control Technology ("BACT") standard. BACT is the applicable standard for the Waena Generating Station as set forth in the federal PSD regulations. BACT takes into account both technical and economic feasibility of emission control technologies. The BACT analysis is approved by the Environmental Protection Agency and the State of Hawaii Department of Health through the permitting process. The BACT analysis must therefore be updated each time a new air permit is sought. Since the Waena Generating Station will be developed in stages, MECO will be updating its BACT analysis numerous times over the next 20 to 30 years. This will ensure that the most current, best available control technology is applied to each stage of development of the Waena Generating Station. Following construction of each stage, MECO will be required to comply with the conditions of its air permits. These conditions include emissions and opacity limits. The air permit for Waena Generating Station is expected to limit opacity of the plume emitted from the stack to 20 percent, but the actual opacity is expected to be less than 5 percent, based on actual operating experience at MECO's Maalaea Generating Station where a DTCC unit is being used. Transcript of Proceedings, April 8, 1998, p. 60, line 23 - p. 74, line 4. See also Exhibits C-30, C-31, C-32, C-33 and C-34.

144. MECO considered the air quality impacts of the project during its site selection process. Based on that analysis, the proposed site minimizes air quality impacts of the project. The analysis further confirms that MECO will be able to obtain air permits for up to four 58-MW DTCC units at the proposed site without any significant deterioration in air quality. It therefore appears that the proposed site is a good location for air quality concerns. Transcript of Proceedings, April 8, 1998, p. 76, lines 5-16.

**b. Meteorology**

145. The proposed site is located in the Central Maui Valley on the northwest slope of Haleakala. The Maui Vortex is a meteorological phenomenon which occurs on the slopes of Haleakala when the trade winds blow from the northeast and meet with upslope sea breezes as the slopes of Haleakala heat up. This creates a cyclonic spin. Transcript of Proceedings, February 27, 1998, p. 247, lines 10-16. The concern over siting an oil-fired power generating station in the vicinity of the Maui Vortex is that emissions from the station could be drawn into the Maui Vortex, possibly causing a significant adverse impact on air quality. Meteorological studies establish, however, that the Maui Vortex is a diurnal feature that spins up, if at all, during the day and that dissipates at night. Transcript of Proceedings, February 27, 1998, p. 255, lines 2-6. See also Exhibits C-46, C-47, C-48, C-49, C-50, C-51 and C-52.

**c. Emissions**

146. The PSD regulations apply to the analysis of air quality impacts of the Waena Generating Station. The maximum project impacts at full buildout of the Waena Generating Station will still not exceed the health based ambient air quality standards and

PSD increment limits. Transcript of Proceedings, April 9, 1998, p. 13, line 14 - p. 16, line 18. See also Exhibits C-41, C-43, C-45, and C-53.

147. Each 58-MW DTCC unit will have an insignificant impact on air quality for particulate matter and nitrogen dioxide. The Waena Generating Station emissions will not cause the strict PSD Class I standards at the Haleakala National Park to be exceeded. The impact of one 58-MW unit is a small percentage of the health based standards. Transcript of Proceedings, April 9, 1998, p. 13, line 14 - p. 16, line 18. See also Exhibits C-41, C-43, C-45, and C-53.

148. If the Maui Vortex phenomenon prevailed for one full month without interruption, the worst case concentrations of pollutants would be insignificant according to the levels established by the Environmental Protection Agency. Studies establish that sulfur dioxide, nitrogen dioxide, and particulate matter emissions have an insignificant impact on air quality following such a worst-case one-month accumulation. For ethylene, a non-criteria pollutant according to the Environmental Protection Agency, over 1300 continuous days of the Maui Vortex would have to exist before concentrations even reached the point of 1/100th microliters per liter, assuming no degradation. Transcript of Proceedings, April 9, 1998, p. 17, line 18 - p. 19, line 18. See also Exhibit C-44. The half-life of ethylene is between 0.4 days and 4 days, mostly due to ultraviolet light causing a breakdown of the ethylene molecule. Accordingly, it is unlikely that ethylene concentrations would ever reach the point of 1/100th microliters per liter, even over a period of 1300 days of continuous Maui Vortex. Transcript of Proceedings, April 9, 1998, p. 85, line 23 - p. 86, line 8.

149. There will be no significant accumulation of emissions in the Maui Vortex. Computer modeling confirmed that 99.65 percent of the emissions from the Waena

Generating Station stacks would not be entrained into the Maui Vortex, even when such conditions existed. Those emissions would instead be swept out to sea where they would not have a significant impact on human health. Transcript of Proceedings, April 9, 1998, p. 19, line 21 - p. 23, line 22. See also Exhibits C-41 and C-53.

150. The potential effect on the Kihei community is negligible due to dispersion of the plume before it reaches the ground level at Kihei. The combined impact of elevation difference, stack height, and plume rise means that the Waena Generating Station's plume will be at least 600 feet above the ground when it reaches Kihei. There is also a five mile distance from the project site to Kihei. Transcript of Proceedings, April 9, 1998, p. 23, line 23 - p. 24, line 25.

151. The Waena Generating Station will have no significant adverse impact on vog and acid rain or adverse cumulative impact on cane burning. Transcript of Proceedings, April 9, 1998, p. 29, line 1 - p. 31, line 19.

152. Cumulatively, less than one-half of one percent of any particulate emissions from the Waena Generating Station will settle anywhere on the Island of Maui. Because of this dispersion, there will be no significant adverse impact caused by any lead or mercury emissions from the Waena Generating Station. Transcript of Proceedings, April 9, 1998, p. 31, line 20 - p. 33, line 4.

153. Because of good dispersion and low emissions, there will be no significant adverse impact caused by any emissions of air toxics from the Waena Generating Station. Transcript of Proceedings, April 9, 1998, p. 32, line 15 - p. 33, line 4.

154. There are no expected significant adverse impacts on air quality. The Waena Generating Station will comply with all federal and state ambient air quality standards,

including those that are designed to be protective of human health and welfare, animals, soils, and vegetation. Transcript of Proceedings, April 9, 1998, p. 33, lines 9-16. See also Exhibits C-38, C-41, C-43, C-44, C-45, and C-53.

**3. Water Quality**

155. See discussion in section I.4. (Ground Water Resources) above.

**4. Others**

156. There is nothing unique or unusual about the proposed design, which is typical for projects of this type. The calculated Electromagnetic Field ("EMF") levels are the same, or lower, than similar facilities already operating on Maui, the neighbor islands and the mainland. The project has design features that reduce EMF levels. EMF levels are far below EMF standards that exist elsewhere. Exhibit J to Final Environmental Impact Statement, dated November 1997. See also Transcript of Proceedings, April 8, 1998, p. 10, line 12 - p. 12, line 18.

**K. Adequacy of Public Service and Facilities**

157. The proposed project will not require extension of existing county or state infrastructure to the site, and the project is not expected to have any direct impact that will require the expenditure of public funds for infrastructure, facilities, or public services. Petition, p. 24 and Final Environmental Impact Statement, pp. 4-71 to 4-86.

**1. Highway and Roadway Facilities**

158. The project will have no significant adverse impact on regional traffic which will require mitigation. Petition, p. 9. See also Transcript of Proceedings, April 8, 1998, p. 182, lines 10-21 and Exhibit C-108. Diesel Fuel to power the DTCC generators at the Waena Generating Station will be delivered to the Island of Maui via ship at Kahului Harbor.

Following study of the cost effectiveness of various means of delivering fuel from the harbor to the project site, the possibility for construction of a pipeline was eliminated and the use of trucking was selected. The study concluded that over the entire course of eighteen years of construction of the various phases of the Waena Generating Station, there would never be a time when construction of a pipeline would be less expensive than the cost of trucking fuel to the plant. Transcript of Proceedings, February 27, 1998, p. 136, line 2 - p. 138, line 1. See also Appendix A to Exhibit A-4 of the Final Environmental Impact Statement, dated November 1997.

159. At full buildout, the Waena Generating Station will require 44 truckloads of diesel fuel daily. Transcript of Proceedings, February 27, 1998, p. 140, lines 15-18. Recognizing this as a potential impact, MECO performed a Traffic Impact Analysis Report in accordance with the State of Hawaii Department of Transportation requirements. That study analyzes existing road conditions and determines the impact, if any, of the expected traffic volumes for the build-out time and the completion of the project. The study includes consideration of growth factors over time and the roadways in the vicinity of the project. The conclusion of that study was that management of the fuel delivery schedule to ensure that such traffic took place during non-peak times would result in no significant impact caused by the construction and operation of the Waena Generating Station. Transcript of Proceedings, April 8, 1998, p. 104, line 5 - p. 108, line 23. See also Appendix I to Exhibit A-4 of the Final Environmental Impact Statement, dated November 1997 and Exhibit C-4. The State Department of Transportation has confirmed that "state transportation facilities can adequately accommodate the subject project. We do not anticipate an adverse impact to our systems." Exhibit C-61.

**2. Water Service**

160. Potable water will be delivered by truck and sanitary wastewater facilities will be constructed onsite. Petition, p. 9.

**3. Wastewater Disposal**

161. Approximately 440,000 gallons of industrial wastewater will be disposed into injection wells as wastewater. Wastewater disposed into injection wells will consist of basal water that has been demineralized and primarily used for steam generation and nitrogen oxide control. The mineral content of the wastewater is therefore expected to be similar in quality to that of the basal aquifer from which it originates, but more concentrated. The effluent water quality is expected to be very similar to the ambient groundwater quality. The density and temperature of the wastewater will be comparable to the ambient groundwater and its overall quality will be suitable for irrigation purposes. Transcript of Proceedings, February 27, 1998, p. 127, line 1 - p. 133, line 2 and Transcript of Proceedings, April 8, 1998, p. 126, line 1 - p. 128, line 18. See also Exhibits C-56, C-57, C-63 and Appendix E to Final Environmental Impact Statement, dated November 1997.

162. Sanitary waste will be disposed on site via a septic tank and a leach field. Transcript of Proceedings, February 27, 1998, p. 130, lines 9-17 and p. 134, lines 14-20. No sanitary waste will be placed in the injection wells. Transcript of Proceedings, February 27, 1998, p. 134, lines 21-23. Solids from the sanitary septic system will periodically be disposed of at a County of Maui wastewater treatment facility. Final Environmental Impact Statement, dated November 1997, p. 4-85.

**4. Drainage**

163. Slopes on the project site are minimal (approximately one degree). Petition, p. 8. See also Transcript of Proceedings, February 26, 1998, p. 104, lines 11-18. According to the Federal Emergency Management Agency Flood Insurance Rate Map, the project site is located in Zone C, areas experiencing minimal flooding. According to the National Flood Insurance Program, Zone C areas are not considered to be flood plain areas. The site does not lie in a tsunami zone. Soil conditions at the site consist of the Waiakoa series, a generally stony soil grading to hard bedrock within a depth of approximately 5 feet. Petition, p. 8. See also Transcript of Proceedings, April 8, 1998, p. 183, lines 3-8 and p. 184, lines 22-24 and Exhibit C-108.

164. Retention/infiltration ponds will be used to prevent storm water from the developed site from exiting the site onto the existing sugarcane lands and irrigation ditch. All storm water drainage will be diverted through oil/water interceptors prior to discharge into the retention/infiltration pond to remove any contaminants from the water. Contained areas such as for field storage, will not be discharged into the storm water system. The drainage containment retention/infiltration ponds will be designed in accordance with the "Rules for the Design of Storm Drainage Facilities in the County of Maui" approved by the County of Maui Department of Public Works using the Maui County Drainage Standard of a 50-year storm of one-hour duration. Transcript of Proceedings, February 27, 1998, p. 133, lines 11-24. See also Petition, pp. 8-9.

**5. Solid Waste Disposal**

165. Solid waste disposal systems on Maui consist of the Central Maui Landfill, located across Pulehu Road from the proposed site, and the Hana Landfill. The Central Maui Landfill was designed as the primary landfill on Maui and it accepts

commercial, industrial, and residential waste. Final Environmental Impact Statement, dated November 1997, p. 4-85.

166. During operation, a minimal amount of solid waste will be generated. To the fullest extent possible, parts, materials, and equipment will be salvaged or recycled. Remaining solid waste will be disposed of at the Central Maui Landfill. Final Environmental Impact Statement, dated November 1997, p. 4-85.

167. MECO will comply with all applicable requirements for the disposal of hazardous solid waste, if any. Such waste would not be accepted at the Central Maui Landfill and it would therefore be shipped off-island for proper disposal pursuant to federal Environmental Protection Agency and State of Hawaii Department of Health requirements. No hazardous wastes will be disposed of either on site or within the State of Hawaii. Final Environmental Impact Statement, dated November 1997, p. 4-86. See also Transcript of Proceedings, April 23, 1998, p. 30, lines 3-11.

**6. Schools**

168. The project will not directly cause additional population growth on the island of Maui and, therefore, the project will not adversely impact existing housing supply. The project will not directly result in any increase in school population and, therefore, will have no adverse impact on area school capacities. Petition, pp. 9-10. See also Transcript of Proceedings, April 8, 1998, p. 182, lines 10-21 and Exhibit C-108.

**7. Police and Fire Protection/Civil Defense**

169. Development of the site is not expected to have an impact on any requirement for police and fire protection. Petition, p. 9. See also Transcript of Proceedings, April 8, 1998, p. 182, lines 10-21 and Exhibit C-108. MECO has implemented comprehensive

environmental response planning to anticipate emergency hazard situations. These include containment systems for fuel and chemicals stored on site at the Waena Generating Station, contingencies for fuel spills or fires, and natural disaster plans. All transport contractors involved in trucking fuel to the Waena Generating Station will be required to file spill prevention and control and containment plans with the State of Hawaii. In the event of such a spill, first responders will be the transport contractor, the county fire department, and MECO safety personnel. Transcript of Proceedings, April 8, 1998, p. 19, line 25 - p. 25, line 15 and p. 29, lines 6-24.

170. Because there is currently no outdoor civil defense siren that reaches the proposed site, the State Civil Defense office has recommended that a siren simulator be placed at the Waena Generating Station in a location that is manned 24 hours a day, such as the security office. Transcript of Proceedings, April 8, 1998, p. 31, lines 3-12.

171. The project will therefore have no significant adverse impact on police, fire, emergency, or civil defense services.

**8. Electricity and Telephone Service**

172. The project will indirectly support additional population and economic growth through the provision of adequate and reliable electricity. Petition, pp. 9-10. See also Transcript of Proceedings, April 8, 1998, p. 182, lines 10-21 and Exhibit C-108.

**L. Commitment of State Funds and Resources**

173. The project is not expected to require the commitment of any state funds or resources to support the construction or operation of the Waena Generating Station. Petition, p. 24. Transcript of Proceedings, April 8, 1998, p. 186, line 1 - p. 187, line 3 and Exhibit C-109.

## M. Conformance to Applicable District Standards

174. The proposed reclassification complies with section 15-15-18 of the LUC Rules.

175. While the area is not adjacent to existing urban district land, the establishment of the nearby landfill and quarry have created an area of "city-like" heavy industrial use near the proposed Waena Generating Station site which are located away from sensitive, commercial, and public areas. Petition, p. 10. See also Transcript of Proceedings, April 8, 1998, p. 181, lines 18-24 and Exhibit C-108.

176. The quarry, landfill, and power generating station are all uses that are necessary to support urban uses and growth. Petition, p. 10. See also Transcript of Proceedings, April 8, 1998, p. 181, lines 18-24 and Exhibit C-108.

177. Necessary basic services are available. See section K (Adequacy of Public Services and Facilities) above.

178. Development of the Waena Generating Station site does not adversely impact the provision of sufficient reserve areas for other urban growth requirements. Granting of the petition would be consistent with the Land Use Commission's approval of special permits for the adjoining quarry and landfill.

179. Topography and Drainage on the proposed site are appropriate for the proposed use. See section B (Description of the Property) above and section K (Adequacy of Public Services and Facilities) below.

180. The subject property was selected through several siting studies which examined existing industrial-zoned sites and lands contiguous with the urban district. Existing industrial-zoned sites were eliminated from consideration due to constrained lands,

air quality concerns, or incompatible adjacent land uses. The proposed facility would also represent an incompatible adjacent land use to existing residential or commercial areas. Use of the site will not diminish the available supply of lands designated for urban use. While the proposed site is not contiguous with existing urban areas, it is in close proximity with similar heavy industrial uses at the nearby landfill and quarry. Exhibit C-108.

181. Urbanization of the site does not contribute to scattered spot urban development, as it is in close proximity to an existing landfill and quarry, both being heavy industrial uses permitted by the Land Use Commission. The petitioner's proposed project will be compatible with these uses, as well as adjacent agricultural uses. Sites within areas indicated for urban growth would be inappropriate due to constrained lands and incompatible adjacent land uses. Petition, p. 10. See also Transcript of Proceedings, April 8, 1998, p. 184, lines 1-21 and Exhibit C-108.

182. Future additional urban uses in the area must receive applicable land use, community plan, and zoning redesignations or special use permits. Because of this, policy and decision makers will be able to determine the extent and nature, if any, of future development around the proposed project site. Petition, p. 10.

183. The Hawaii State Plan is a guide for future long-range development. It identifies the goals, objectives, policies, and priorities for the State; allocates limited resources; improves coordination among federal, state, and county agencies; and establishes a system for integrating all major state and county activities. The project complies with the Hawaii State Plan, the State Energy Functional plan, the Coastal Zone Management Act, the Maui County General Plan, and the Wailuku/Kahului Community Plan. MECO is actively involved in projects, Demand Side Management programs, energy conservation programs,

and MECO actively supports continued education and research in these areas. Transcript of Proceedings, April 8, 1998, p. 185, lines 5-22 and Exhibit C-109.

184. Section 15-15-24 of the LUC Rules establishes that power generation on the site is a use permitted by the County of Maui on lands zoned "Heavy Industrial." MECO is pursuing the necessary County of Maui approvals to rezone the site to the "Heavy Industrial" zoning classification. The County of Maui's decision for a zoning reclassification to Heavy Industrial cannot occur until the Land Use Commission has approved redesignation of the site from State Agricultural District to Urban District. Petition, pp. 23-24. The project complies with district standards for urban areas. Transcript of Proceedings, April 8, 1998, p. 185, lines 20-22 and Exhibit C-109.

**N. Conformance with the Hawaii State Plan**

185. The proposed Waena Generating Station is designed to meet the increasing demand for electricity on the island of Maui and to improve system reliability. As a result of its planned addition of generation capacity over the next 20 to 30 years, the Waena Generating Station can accommodate changing public demands and allow for the flexibility of future designs and technologies. Currently a 58-MW DTCC unit is the least cost option in terms of both initial and long term costs. Petition, p. 12.

186. The proposed project, in the context of MECO's integrated approach to energy production and conservation, conforms to the objectives and policies of Sections 226-14 and 226-18 of the Hawaii State Plan. The purpose of the proposed Waena Generating Station is to provide a system that meets the projected electrical demand, increases system reliability, and provides dependable electrical service. Petition, pp. 13-14.

187. Resource limitations and environmental, public health, and safety concerns were considered in selecting the site and appropriate technology for the generating facility. During the development of the petition's integrated resource plan, a comparison of costs and benefits for both alternative fuels and alternative technology was performed. At the present time, alternative fuels and technologies do not represent the least-cost energy supply option or the maximum efficient technology. The use of diesel-fueled DTCC units are justified while other renewable energy projects and technologies are still being developed. Petition, p. 14.

188. As part of the Public Utilities Commission's renewable energy docket, MECO has committed to an action plan to try to overcome some of the barriers to renewable energy development. These include implementing conservation programs, assisting the state in simplifying permits for renewable energy projects, implementing cost-effective renewable energy projects, participating in and monitoring ongoing renewable energy research, development and demonstration projects, implementing a green pricing program (Sun Power for Schools), and examining renewable energy in MECO's modeling and planning efforts. Transcript of Proceedings, February 27, 1998, p. 203, line 11 - p. 204, line 12.

189. MECO and its sister utilities Hawaiian Electric Company and Hawaii Electric Light Company are actively participating in education, research, and cost-effective programs to further develop alternative fuels and technologies in Hawaii, as is evident through MECO's activity in wind energy demonstrations, independent wind energy negotiations, and solar thermal evaluations. Transcript of Proceedings, February 27, 1998, p. 204, line 16 - p. 211, line 9 and p. 213, line 16 - p. 214, line 19 and p. 220, line 8 - p. 221, line 16 and p. 222, lines 10-23.

190. MECO is cooperating with the Pacific International Center for high technology research, the County of Maui and the State of Hawaii in examining biomass electricity applications for Hawaii. MECO is additionally continuing to operate its program of installing small photovoltaic systems on public schools ("Sun Power for Schools"). Petition, p. 14.

191. The State Energy Functional Plan seeks to achieve dependable, efficient, and economical statewide energy systems capable of supporting the needs of the people in the state. The Waena Generating Station project conforms to the objectives of the State Energy Functional Plan by allowing for the retirement of less fuel-efficient power generating units. Transcript of Proceedings, April 8, 1998, p. 179, line 20 - p. 181, line 1.

192. The Office of Planning of the State of Hawaii has stated that "the proposed reclassification is generally consistent with the objectives and policies [of the Hawaii State plan] for the economy, facility systems energy and telecommunications." Testimony of the Office of Planning in Support of the Petition, filed February 12, 1998, pp. 56-57. See also Transcript of Proceedings, April 23, 1998, p. 142, lines 4-19 and section N (Conformance with Hawaii State Plan) below.

193. The Office of Planning of the State of Hawaii has confirmed that the proposed Waena Generating Station will comply with sections 226-14 and 226-18, HRS. Testimony of the Office of Planning in Support of the Petition, filed February 12, 1998, pp. 23-25.

194. The project conforms to the Hawaii State Plan and the State Energy Functional Plan. Transcript of Proceedings, April 8, 1998, p. 179, line 20 - p. 181, line 1.

**O. Conformance with Coastal Zone Management Requirements**

195. The subject property is located approximately four miles inland. The proposed project will have no impact on the public's access and use of the shoreline area, and there will be no adverse impact to near shore waters from point and non-point sources of pollution. Because of its location and lack of coastal impacts, the project will conform with the objectives related to recreational resources, coastal ecosystems, beach protection, and marine resources. Petition, p. 20.

196. The location of the project site does not represent a significant adverse impact to scenic views or vistas related to coastal areas. Additional impacts will be mitigated through landscaping and choices of paint colors appropriate to the area. Therefore, the project will have no negative impact on the visual character of its immediate environs within the central Maui region. Petition, p. 21. Transcript of Proceedings, April 8, 1998, p. 150, line 20 - p. 154, line 10 and p. 171, line 13 - p. 179, line 3. See also Exhibits C-5, C-83, C-84, C-86, C-87, C-89, C-90, C-91 and C-114.

197. The project complies with the economic uses objective by providing the necessary facility located away from coastal areas which will meet and support continued economic growth on the island of Maui. The subject property has no involvement with construction of any structures within the shoreline area and will not have an impact upon any public beaches. Petition, p. 21.

198. The project has produced an environmental impact statement which has gone through public review and comment. That Final Environmental Impact Statement was accepted by the County of Maui Planning Department on November 24, 1997. Transcript of Proceedings, April 8, 1998, p. 189, line 24 - p. 190, line 3. In addition, several public meetings were held during both the facility siting and environmental assessment phases of the

project. The requirement of the project to follow the Maui County Community Plan Amendment and county rezoning processes, as well as the State Land Use Boundary Redesignation process, ensures the development of the project will be managed with a high level of public input and participation. Petition, p. 21.

199. The project complies with the policies, goals, and objectives of the Coastal Zone Management Act. Transcript of Proceedings, April 8, 1998, p. 179, lines 15-19.

**P. Incremental Districting**

200. Pursuant to section 15-15-78 of the LUC Rules, incremental districting is not required because full development of the subject property can substantially be completed within ten years after the date of the Land Use Commission's approval.

201. If any of the foregoing Findings of Fact constitute Conclusions of Law, the Land Use Commission so concludes.

## III. RULING ON PROPOSED FINDINGS OF FACT

202. The Land Use Commission hereby adopts the foregoing findings of fact.

## IV. CONCLUSIONS OF LAW

1. The Land Use Commission has jurisdiction over this matter because amendments of a land use district boundary involving land areas greater than fifteen acres shall be determined by the Land Use Commission pursuant to Section 15-15-77(e) of the LUC Rules and sections 205-3.1, HRS.

2. The Land Use Commission finds by a clear preponderance of the evidence that the proposed boundary amendment conforms to the standards for determining "U" urban district boundaries. LUC Rules § 15-15-18.

3. While the area is not adjacent to existing urban district land, the nearby landfill and quarry have created an area of "city-like" heavy industrial use near the proposed Waena Generating Station site which are located away from sensitive, commercial, and public areas. The proposed boundary amendment includes lands, by virtue of the adjacent quarry and landfill and upon completion of the project, that are and will continue to be characterized by "city-like" heavy industrial use. LUC Rules § 15-15-18(1).

4. The Land Use Commission has considered the factors outlined in section 15-15-18(2) of the LUC Rules and concludes that the proposed boundary amendment and the proposed development of the Waena Generating Station is in conformity with the standards for an urban district. LUC Rules § 15-15-18(2).

5. The proposed boundary amendment includes lands with satisfactory topography, drainage, and reasonably free from the danger of any flood, tsunami, unstable soil condition, and other adverse environmental effects. LUC Rules § 15-15-18(3).

6. The proposed site was selected through several siting studies which eliminated sites in the immediate vicinity of land with existing urban uses. The proposed facility would represent a land use that is incompatible with residential or commercial areas within the existing urban district. LUC Rules § 15-15-18(4).

7. The proposed land use will be a heavy industrial use and will be located in close proximity to other existing industrial uses. The proposed project will be compatible with nearby heavy industrial uses as well as the adjacent agricultural uses. Sites within areas indicated for urban growth would be inappropriate due to constrained lands and incompatible adjacent land uses. LUC Rules § 15-15-18(5).

8. The Land Use Commission need not consider § 15-15-18(6) of the LUC Rules because the proposed boundary amendment conforms to the standards for "U" urban district boundaries set forth in LUC Rules § 15-15-18(1) to (5).

9. The proposed boundary amendment will not contribute toward scattered spot urban development necessitating unreasonable investment in public infrastructure or support services. LUC Rules § 15-15-18(7).

10. The proposed boundary amendment does not include lands with a general slope of twenty per cent or more and therefore the Land Use Commission need not find that the lands are desirable and suitable for urban purposes and that the design and construction controls, as adopted by any federal, state, or county agency, are adequate to protect the public health, welfare and safety, and the public's interests in the aesthetic quality of the landscape. LUC Rules § 15-15-18(8).

11. The Land Use Commission concludes that the petitioner meets each and every standard for determining an urban district boundary for the subject property pursuant to the Land Use Commission Rules, Section 15-15-18(1) to (8), inclusive, as applicable.

12. The Land Use Commission finds by a clear preponderance of the evidence that the proposed boundary amendment conforms to the decision-making criteria for boundary amendments. LUC Rules § 15-15-97.

13. The proposed boundary amendment is reasonable, not violative of section 205-2, HRS, and is consistent with the policies and criteria established pursuant to sections 205-16, 205-17, and 205A-2, HRS.

14. The proposed reclassification conforms to the applicable goals, objectives, and policies of the Hawaii State Plan and relates to the applicable priority guidelines of the Hawaii State Plan and the adopted functional plans. LUC Rules § 15-15-77(b)(1).

15. The proposed reclassification conforms to the applicable district standards. LUC Rules § 15-15-77(b)(2).

16. The proposed reclassification will not adversely impact on the following areas of state concern:

(1) Preservation or maintenance of important natural systems or habitats;

(2) Maintenance of valued cultural, historical, or natural resources;

(3) Maintenance of other natural resources relevant to Hawaii's economy including, but not limited to agricultural resources;

(4) Commitment of state funds and resources;

(5) Provision for employment opportunities and economic development; and

(6) Provision for housing opportunities for all income groups, particularly the low, low-moderate, and gap groups. LUC Rules § 15-15-77(b)(3).

17. The proposed reclassification conforms to the general plan of the county in which the land is located. LUC Rules § 15-15-77(b)(4).

18. The representations and commitments made by the petitioner in securing a boundary change have been satisfactory and the petitioner has the necessary economic ability to carry out the representations and commitments relating to the proposed use or development. LUC Rules § 15-15-77(b)(5).

19. The lands involved in the present petition have been in intensive agricultural use for two years prior to date of filing of the petition and are lands with a high capacity for intensive agricultural use. The Land Use Commission finds that the proposed boundary amendment:

(a) Will not substantially impair actual or potential agricultural production in the vicinity of the subject property or in the county or State; and

(b) Is reasonably necessary for urban growth. LUC Rules § 15-15-77(b)(6).

20. If any of the foregoing Conclusions of Law constitute Findings of Fact, the Land Use Commission so finds.

## V. DECISION

Pursuant to Chapter 205 of the Hawaii Revised statutes, as amended, and the Rules of the Land Use Commission, the Land Use Commission finds upon a clear preponderance of the evidence that the reclassification of the property, consisting of a total of approximately 65.7 acres of land at Wailuku and Makawao Districts, Maui, Hawaii, and identified as TMK Nos. 3-8-03:23 and 24 shall be and hereby is reclassified from the Agricultural Land Use District into the Urban Land Use District, subject to the following seventeen conditions:

1. Petitioner shall participate in an air quality monitoring program, coordinated with and approved by the State of Hawaii Department of Health ("DOH") to monitor air quality impacts attributable to the operations of the Waena Generating Station. Mitigation measures for air quality impacts attributable to the operations of the Waena Generating Station shall be implemented by Petitioner if, based on applicable State and Federal air quality standards, the results of the monitoring program

warrant them. Mitigation measures shall be developed in coordination with the DOH and implemented by Petitioner.

2. Petitioner shall consult with the DOH and, if necessary, Petitioner shall participate in a groundwater quality monitoring program in consultation with the County of Maui Department of Water and approved by the DOH to monitor groundwater quality impacts directly attributable to the operations of the Waena Generating Station. The Petitioner shall implement mitigation measures should the results of the monitoring program warrant them based on applicable State and Federal water quality standards. Mitigation measures shall be developed in coordination with the DOH and implemented by Petitioner.

3. Petitioner shall provide at its own expense, adequate non-potable water source, storage, and transmission facilities and improvements to accommodate the proposed project. The non-potable water improvements shall meet all applicable County, State, and Federal standards and shall be consistent with the County of Maui adopted water use and development plan.

4. Petitioner shall consult with the DOH and, if necessary, prepare a wastewater disposal plan subject to review and approval by the DOH. Petitioner shall provide at its own expense adequate wastewater treatment, transmission and disposal facilities for wastewater directly attributable to the operations of the Waena Generating Station.

5. Petitioner shall establish appropriate systems to contain spills and prevent materials associated with heavy industrial uses attributable to the operations of the Waena Generating Station, such as petroleum products, chemicals or other pollutants, from leaching or draining into above ground or subsurface storm drainage collection areas. Based on applicable State and Federal standards, Petitioner shall use best management practices to minimize non-point source pollution into irrigation ditches. Petitioner shall consult with the DOH and County Department of Public Works and Waste Management and obtain any permits required or construct improvements required for storm water discharge on the Property.

6. Petitioner shall consult with the DOH regarding hazardous waste storage and, if necessary, prepare a hazardous waste storage plan.

7. Petitioner shall participate in the funding and construction of local and regional transportation improvements and programs attributable to the operations of the Waena Generating Station as determined by the State of Hawaii Department of Transportation ("DOT") and the County of Maui.

8. Petitioner shall coordinate with the surrounding property owner to ensure that the proposed project will not adversely impact the use of cane haul roads and irrigation ditches or adversely impact the continued agricultural operation of adjoining sugar cane cultivation areas.

9. Petitioner shall participate in the pro rata funding and construction of adequate civil defense measures (i.e., an emergency siren which may be located upon the project site).

10. Petitioner shall implement effective soil erosion and dust control measures during and after construction in compliance with the applicable rules and regulations of the DOH and the County of Maui.

11. Should any human burials or any historic artifacts, such as charcoal deposits, stone platforms, pavings or walls be found, Petitioner shall stop work in the immediate vicinity and contact the State of Hawaii Historic Preservation Division ("SHPD") of the Department of Land and Natural Resources. The significance of these finds shall then be determined and approved by the SHPD and, if applicable, an acceptable mitigation plan shall be approved by the SHPD. The SHPD must verify that the fieldwork portion of the mitigation plan has been successfully executed prior to work proceeding in the immediate vicinity of the find. Burials must be treated under specific provisions of Chapter 6E, HRS.

12. Petitioner shall develop the Property in substantial compliance with the representations made to the Commission. Failure to so develop the Property may result in reversion of the Property to its former classification, or change to a more appropriate classification.

13. Petitioner shall give notice to the Commission of any intent to sell, lease, assign, place in trust, or otherwise voluntarily alter the ownership interests in the Property, prior to the development of the Property.

14. Petitioner shall timely provide without any prior notice, annual reports to the Commission, the Office of State Planning, and the County of Maui Planning Department in connection with the status of the subject project

and Petitioner's progress in complying with the conditions imposed herein. The annual report shall be submitted in a form prescribed by the Executive Officer of the Commission. Annual reports will not be required after substantial completion of the final phase of development of the Property.

15. The Commission may fully or partially release the conditions provided herein as to all or any portion of the Property upon timely motion and upon the provision of adequate assurance of satisfaction of these conditions by Petitioner.

16. Within 7 days of the issuance of the Commission's Decision and Order for the subject reclassification, Petitioner shall (a) record with the Bureau of Conveyances a statement that the Property is subject to conditions imposed herein by the Land Use Commission in the reclassification of the Property, and (b) shall file a copy of such recorded statement with the Commission.

17. Petitioner shall record the conditions imposed herein by the Commission with the Bureau of Conveyances pursuant to Section 15-15-92, Hawaii Administrative Rules.

## VI. ORDER GRANTING PETITION FOR BOUNDARY AMENDMENT

The Petition of Maui Electric Company, Limited, a Hawaii corporation, for District Boundary Amendment, to amend the Agricultural Land Use District Boundary into the Urban Land Use District for approximately 65.7 acres of land at Wailuku and Makawao Districts, Maui Hawaii, TMK Nos. 3-8-03:23 and 24, filed October 24, 1997 as Docket No. A97-722 is hereby GRANTED subject to the following seventeen conditions:

1. Petitioner shall participate in an air quality monitoring program, coordinated with and approved by the State of Hawaii Department of Health ("DOH") to monitor air quality impacts attributable to the operations of the Waena Generating Station. Mitigation measures for air quality impacts attributable to the operations of the Waena Generating Station shall be implemented by Petitioner if, based on applicable State and Federal air quality standards, the results of the monitoring program

warrant them. Mitigation measures shall be developed in coordination with the DOH and implemented by Petitioner.

2. Petitioner shall consult with the DOH and, if necessary, Petitioner shall participate in a groundwater quality monitoring program in consultation with the County of Maui Department of Water and approved by the DOH to monitor groundwater quality impacts directly attributable to the operations of the Waena Generating Station. The Petitioner shall implement mitigation measures should the results of the monitoring program warrant them based on applicable State and Federal water quality standards. Mitigation measures shall be developed in coordination with the DOH and implemented by Petitioner.

3. Petitioner shall provide at its own expense, adequate non-potable water source, storage, and transmission facilities and improvements to accommodate the proposed project. The non-potable water improvements shall meet all applicable County, State, and Federal standards and shall be consistent with the County of Maui adopted water use and development plan.

4. Petitioner shall consult with the DOH and, if necessary, prepare a wastewater disposal plan subject to review and approval by the DOH. Petitioner shall provide at its own expense adequate wastewater treatment, transmission and disposal facilities for wastewater directly attributable to the operations of the Waena Generating Station.

5. Petitioner shall establish appropriate systems to contain spills and prevent materials associated with heavy industrial uses attributable to the operations of the Waena Generating Station, such as petroleum products, chemicals or other pollutants, from leaching or draining into above ground or subsurface storm drainage collection areas. Based on applicable State and Federal standards, Petitioner shall use best management practices to minimize non-point source pollution into irrigation ditches. Petitioner shall consult with the DOH and County Department of Public Works and Waste Management and obtain any permits required or construct improvements required for storm water discharge on the Property.

6. Petitioner shall consult with the DOH regarding hazardous waste storage and, if necessary, prepare a hazardous waste storage plan.

7. Petitioner shall participate in the funding and construction of local and regional transportation improvements and programs attributable to the operations of the Waena Generating Station as determined by the State of Hawaii Department of Transportation ("DOT") and the County of Maui.

8. Petitioner shall coordinate with the surrounding property owner to ensure that the proposed project will not adversely impact the use of cane haul roads and irrigation ditches or adversely impact the continued agricultural operation of adjoining sugar cane cultivation areas.

9. Petitioner shall participate in the pro rata funding and construction of adequate civil defense measures (i.e., an emergency siren which may be located upon the project site).

10. Petitioner shall implement effective soil erosion and dust control measures during and after construction in compliance with the applicable rules and regulations of the DOH and the County of Maui.

11. Should any human burials or any historic artifacts, such as charcoal deposits, stone platforms, pavings or walls be found, Petitioner shall stop work in the immediate vicinity and contact the State of Hawaii Historic Preservation Division ("SHPD") of the Department of Land and Natural Resources. The significance of these finds shall then be determined and approved by the SHPD and, if applicable, an acceptable mitigation plan shall be approved by the SHPD. The SHPD must verify that the fieldwork portion of the mitigation plan has been successfully executed prior to work proceeding in the immediate vicinity of the find. Burials must be treated under specific provisions of Chapter 6E, HRS.

12. Petitioner shall develop the Property in substantial compliance with the representations made to the Commission. Failure to so develop the Property may result in reversion of the Property to its former classification, or change to a more appropriate classification.

13. Petitioner shall give notice to the Commission of any intent to sell, lease, assign, place in trust, or otherwise voluntarily alter the ownership interests in the Property, prior to the development of the Property.

14. Petitioner shall timely provide without any prior notice, annual reports to the Commission, the Office of State Planning, and the County of Maui Planning Department in connection with the status of the subject project

and Petitioner's progress in complying with the conditions imposed herein. The annual report shall be submitted in a form prescribed by the Executive Officer of the Commission. Annual reports will not be required after substantial completion of the final phase of development of the Property.

15. The Commission may fully or partially release the conditions provided herein as to all or any portion of the Property upon timely motion and upon the provision of adequate assurance of satisfaction of these conditions by Petitioner.

16. Within 7 days of the issuance of the Commission's Decision and Order for the subject reclassification, Petitioner shall (a) record with the Bureau of Conveyances a statement that the Property is subject to conditions imposed herein by the Land Use Commission in the reclassification of the Property, and (b) shall file a copy of such recorded statement with the Commission.

17. Petitioner shall record the conditions imposed herein by the Commission with the Bureau of Conveyances pursuant to Section 15-15-92, Hawaii Administrative Rules.

## VII. MAPS

See Petition, Exhibit A-1.

DATED: Honolulu, Hawaii, May 15, 1998.

B. MARTIN LUNA
ALLEN R. WOLFF
RANDALL H. ENDO

Attorneys for
MAUI ELECTRIC COMPANY, LIMITED

BEFORE THE LAND USE COMMISSION

STATE OF HAWAII

| | | |
|---|---|---|
| In the Matter of the Petition of<br><br>MAUI ELECTRIC COMPANY, LIMITED,<br>a Hawaii corporation,<br><br>To Amend the Agricultural Land Use<br>District Boundary into the Urban Land Use<br>District for Approximately 65.7 Acres of<br>Land at Wailuku and Makawao Districts,<br>Maui, Hawaii, TMK 3-8-03:23 and 24 | ) | DOCKET NO. A97-722<br><br>CERTIFICATE OF SERVICE |

**CERTIFICATE OF SERVICE**

The undersigned hereby certifies that a true and correct copy of the foregoing document was duly served upon the following, at their last known address, by U.S. **certified** mail, postage prepaid, on the date indicated below:

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Corporation Counsel
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DATED: Honolulu, Hawaii, May 15, 1998.

B. MARTIN LUNA
ALLEN R. WOLFF
RANDALL H. ENDO

Attorneys for
MAUI ELECTRIC COMPANY, LIMITED

# BEFORE THE LAND USE COMMISSION
# OF THE STATE OF HAWAI'I

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| In the matter of the petition of | ] | DOCKET NO. A97-722 |
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| MAUI ELECTRIC COMPANY, LIMITED | ] | |
| | ] | |
| To Amend the Land Use | ] | |
| District Boundary of Certain | ] | |
| Lands Situated at Wailuku and | ] | |
| Makawao Districts, Island of | ] | |
| Maui, State of Hawai'i, | ] | |
| Consisting of 65.7 Acres from | ] | |
| The Agricultural to the Urban | ] | |
| District | ] | |

LAND USE COMMISSION
STATE OF HAWAII
MAY 15 9 44 AM '98

## Maui Tomorrow

## PROPOSED FINDINGS OF FACT
## IN THE MATTER OF CASE DOCKET # A97-722

## PROPOSED CONCLUSIONS OF LAW

# BEFORE THE LAND USE COMMISSION
# OF THE STATE OF HAWAI'I

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| In the matter of the petition of | ] | DOCKET NO. A97-722 |
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| MAUI ELECTRIC COMPANY, LIMITED | ] | |
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| Maui, State of Hawai'i, | ] | |
| Consisting of 65.7 Acres from | ] | |
| The Agricultural to the Urban | ] | |
| District | ] | |

## CERTIFICATE OF SERVICE

I hereby certify that a copy of Maui Tomorrow's Findings of Fact and Conclusions of Law and Order was served upon the following by U.S. Postal Service certified mail:

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Wailuku, Hawai'I 96793

Dated Makawao, Hawai'i this 14th day of May 1998 Mark Sheehan

Mark Sheehan, Pres. Maui Tomorrow

# PROPOSED FINDINGS OF FACT
# IN THE MATTER OF CASE DOCKET # A97-722

## A. HAWAI'I'S "CLASS A" PRIME AGRICULTURAL LANDS REQUIRE PRESERVATION.

1. Class A agricultural lands are lands which have been rated by the University of Hawai'i's Land Study Bureau to have the highest quality productivity rating. Only 32,678 acres out of Maui Island's 459,269 total acres are rated "Class A". (Detailed Land Classification - Island of Maui, U.H. Land Study Bureau, May, 1967)

2. The entirety of the 65.7 acre location of the proposed power plant is rated as "Class A Prime agricultural" land. (F.E.I.S., Page 4-64)

3. The construction of the foundation alone (which would be completed in the first phase regardless of any changes to the technology used over time) for this proposed power plant would permanently remove this "Class A" rated agricultural land from future agricultural use. (F.E.I.S., Pages 6-1 + 6-2)

4. MECO stated several times in its L.U.C. hearing testimony that **the loss of 65.7 acres of prime "Class A" land is appropriate** since lands elsewhere would be added to production. MECO neither identified the particular land parcel(s) that would be substituted nor did MECO ever state whether "Class A" lands would be substituted, but rather stated that 1,100 acres of formerly cultivated land would be put back into production (F.E.I.S., Page 4-69). This conversion of crop land would be occurring with or without the sale of the 65.7 acre parcel for the proposed power plant.

**The use of wind mills would allow agricultural lands to remain in production.** According to the testimony of MECO'S expert witness, Mr. Seki, the

land under the windmills could continue to be utilized for agricultural purposes. He said, "I've seen wind operations at Kahua Ranch on the big Island where they had some wind farms operating and they cattle grazing under that area." (L.U.C. hearing on April 8, 1998, Volume VI Page 236)

5. Population depends on food supply, not energy supply. Hawai'i currently imports approximately 86 percent of its food supply. There is currently a three day supply of food on island of Maui. Other food producing areas on which Hawai'i is dependent are being degraded, costs are rising, and global competition is becoming a factor. Approximately half an acre of agricultural land is required per person for sustainable agriculture, to reproduce food on a continuous basis for a long duration. The amount of prime agricultural land required to feed the resident population of Maui is slightly more than the amount of prime agricultural land currently available. The irreversible loss of 65.7 acres of prime agricultural land is a significantly adverse impact. (Hearing transcripts, Roy Smith, April 24, Vol. VI, pages 19-23).

## B. MAUI COUNTY PLANNING COMMISSION HAS SERIOUS CONCERNS ABOUT THIS PROJECT

6. At the Maui County Planning Commission hearing on this petition held March 10, 1998, the Maui County Planning Commission did not recommend approval or denial of this petition. At that time, the commissioners raised a number of serious concerns, among these concerns are:

**(a)"support more aggressive demand-side management"**

**(b)"review growth and demand projections"**

**(c)"consider rate control to protect consumers from rising oil costs"**

**(d)"make firm commitment to renewable energy with SPECIFIC goals and dates for implementation."**

## C. MECO HAS FAILED TO ADEQUATELY PLAN FOR RISE IN FOSSIL FUEL COSTS

7. The F.E.I.S. analysis failed to adequately evaluate and address future increases in oil prices resulting from the depletion of oil reserves globally. Therefore, when comparing real costs, fossil fuel becomes a less viable or acceptable fuel source than renewable energy sources. According to oil experts, writing in a very recent issue of Scientific American, **"Global production of conventional oil will begin to decline sooner than most people think, probably within 10 years"**. The article goes on to point out that, **"From an economic perspective, ... what really matters is (the period of time) when production begins to taper off. Beyond that point, prices will rise unless demand declines commensurately."** (Scientific American "The End of Cheap Oil" by C. J. Campbell and J. H. Laherrere, March, 1998, Page 78)

8. The article concludes with a dire warning, **"What our society does face, and soon, is the end of the abundant and cheap oil on which all industrial nations depend."** (Scientific American "The End of Cheap Oil" by C. J. Campbell and J. H. Laherrere, March, 1998, Page 83)

## D. MECO'S CURRENT PLAN DISREGARDS THE HAWAI'I STATE GOVERNMENT'S CONCERNS ABOUT HAWAI'I'S DEPENDENCE ON IMPORTED OIL

9. The proposed power plant plan is in direct contradiction to the State of Hawai'i's "Hawai'i Energy Strategy Program". In 1992, the Energy Policy Advisory Committee declared the following as part of the State of Hawai'i's "Hawai'i Energy Policy Plan";

(a)"Hawai'i's current **over-dependence upon petroleum is of major concern**. Aggressive implementation of cost-effective energy efficiency measures and **diversification of energy supplies shall be given priority consideration in reducing this over-dependence and increasing energy security.**"

(b)"The **state shall encourage the development of its renewable energy resources** in a socially and environmentally sensitive and cost-effective manner."

(c)"**Hawai'i's utility sector, whose dependence upon petroleum as its source of fuel far exceeds the national average, is significant because it presently has the greatest potential for improvement in the efficiency of energy use as well as for a major shift from oil to other sources in the near term.**"

(d)"**World oil supplies are finite and prices are subject to sudden, extreme fluctuations which can threaten our economy's health. Oil endangers Hawai'i's fragile environment more than most other fuels.**"

(e)"**Hawai'i businesses face high energy prices which reduce profitability and competitiveness, limiting funds available for expansion and job creation. Dollars spend for imported energy leave the islands and are not available to the local economy. The state has long recognized its dependence on oil and the need to diversify its energy base.**"

## E. RENEWABLE (NON-FOSSIL FUEL BURNING) ENERGY SOURCES HAVE BEEN IMPROPERLY PORTRAYED, INADEQUATELY RESEARCHED AND SUMMARILY IGNORED

10. The F.E.I.S. dismisses the potential for supplying Maui's electricity consumers with inexpensive, non-fossil fuel dependent electricity production technologies (wind, solar, biomass, photo-voltaic, etc.) in a very superficial, abbreviated, and miss-leading manner. (F.E.I.S., Pages 3-15 to 3-26)

11. The justification to give more serious consideration to **renewable electricity production technologies (wind, solar, biomass, photo-voltaic, etc.)** is based on the fact that these technologies:

**1) are less polluting;**

**2) provide more jobs;**

**3) are potentially less expensive;**

**4) may provide security against oil price rises; and**

**5) may provide security against fuel-oil supply disruptions.**

12. The F.E.I.S accurately states that "The Hawai'ian Islands are very well suited to the development of wind energy technologies," and that "...wind energy is very desirable from the community standpoint," and indicates that wind energy is more cost effective than the proposed technology, but wind energy is dismissed as a viable alternative primarily because "...it depends on an intermittent resource." Yet energy storage systems, including pump storage, which may help overcome this limitation, are not addressed in the F.E.I.S. or the petition.

13. During the L.U.C. hearing MECO representatives stated that a pump-storage system feasibility study had been conducted by MECO. MECO'S expert witness, Mr. Seki, stated, (referring to pump storage information) "...now we have that information for the second round of IRP." (L.U.C. hearing on April 8, 1998, Volume VI Page 242). However, repeated requests to MECO and to its attorney, Mr. Martin Luna, have been met with a refusal to supply this documentation. The pump-storage system study would clarify the potential for wind-power and perhaps other renewable energy production facilities. The L.U.C. should have this study available for examination and inclusion in their decision making process, as well as for the general public.

14. Water heating comprises one of the most significant sectors of energy use on Maui, particularly at peak time. Solar thermal water heating is currently economically viable on Maui, with a great unmet potential for installation. The cost of such systems could be reduced even more through the economies of scale if a large-scale effort were made to install systems, including manufacturing or assembling systems locally, which also creates more jobs and economic benefit. Solar thermal systems have no ongoing fuel costs. Solar thermal hot water systems reduce the peak and overall demand for central energy generating capacity, and are sited on existing rooftops, therefore require no conversion of agricultural land to industrial use.

15. According the Department of Energy National Renewable Energy Laboratory, grid-connected customer-sited photovoltaic systems are currently economical on Maui. As with photovoltaics, the cost of such systems could be reduced even more through the economies of scale if a large-scale effort were made to install systems, including manufacturing or assembling systems locally, which also creates more jobs and economic benefit. Photovoltaics have no ongoing fuel costs. Customer-sited photovoltaic systems reduce the peak and overall demand for central energy generating capacity, and are sited on existing rooftops, therefore require no conversion of agricultural land to industrial use.

16. The discussion of renewable energy sources in the F.E.I.S. (Pages 3-15 to 3-26) incorrectly assumes that an oil-burning plant might only be replaced 100% by a single alternative. There is absolutely no discussion of the possibility of a mix of technologies. (For example, a feasible approach might be to utilize wind for 25%, photovoltaic for 25%, biomass for 25% and, oil-burning for 25%).

17. MECO has failed to adequately examine innovative approaches to Demand Side Management and conservation. A considerable amount of electricity on Maui is used for water pumping by the Maui County Department of Water and by H.C.&S. **These pumps could be turned off during certain periods. There are numerous other motors and users who similarly could be put off the grid during peak hours or when alternative energy sources are unavailable. Significantly, these actions have been omitted in the MECO petition and DSM plan.**

18. The F.E.I.S. analysis fails to differentiate between the need for base load as opposed to peak load. Such a distinction would greatly clarify the role of renewable technologies.

## F. MECO'S CALCULATIONS ARE INCOMPLETE AND DECEPTIVE

19. MECO has attempted to justify the need to build another oil burning power plant using economics. They assert that it will be more economical than various other electricity production alternatives (wind, solar, etc.), (F.E.I.S., Pages 3-15 to 3-26)

However, MECO has totally neglected to show the effect of rising fuel prices. If rising fuel costs had been included in their calculations, the total economic impact of rising electricity costs on both Maui residential consumers and businesses would be financially devastating. **Consequently, if fuel-oil costs rise, various electricity production alternatives (wind, solar, biomass, etc.) will become more economical and appropriate relative to oil-burning power plants.**

20. In fact, the calculations included in MECO's F.E.I.S (on page 3-24) make a very strong case that wind-power is actually much cheaper for Maui than MECO's proposed, oil-burning power plant. **Specifically, the F.E.I.S. states that the capital cost for wind generation will be only $13.3 million /10 MW. This cost for a wind facility compares to a higher cost of $17.8 million/10 MW for the oil-burning power plant.** (Note: the $17.8 million figure for the oil-burning power plant is derived from a total cost of $417.6 million for a 232 MW facility.)

Not only will the capital cost, the fuel costs, and the fuel-trucking costs of the wind facility be cheaper than the MECO-proposed, oil-burning power plant, but **there would be no fuel cost, no fuel-trucking cost, no air pollution, and, finally, no loss of prime agricultural land from a wind plant**.

21. Although MECO's F.E.I.S (on Page 3-24) indicates that wind power is going to be far cheaper ($13.2 million / 10 MW) than fossil fuel, the F.E.I.S fails to explore this alternative further. The F.E.I.S and MECO's representatives and witnesses have stated that wind power is not economical, "because of the high cost ... (wind power) cannot be considered a feasible alternative to the proposed project." This statement is simply inaccurate, and MECO's own numbers prove it.

22. The total real costs of the current MECO plan are inaccurately portrayed and calculated. One of the significant real costs ignored in the F.E.I.S. for MECO's proposed, oil-burning power plant is fuel cost. (F.E.I.S Page 3-14.)

The following calculations, utilizing the numbers given in the F.E.I.S., give a more accurate picture of the total real costs of this plant:

**$417.6 MILLION FOR THE CAPITAL COSTS**

**PLUS ANNUAL FUEL COSTS**:

44 trucks per day * 9,000 gallons/truck ==> 396,00 gallons / day

396,000 gallons * 365 days ==> 144,500,000 gallons of oil / year

144,500,000 gallons/year * $0.60/gallon ==> **$86.7 MILLION/YEAR**

**If oil prices rise as predicted, then these fuel costs will rise, and therefore, the cost per year will increase. The public will surely be forced to bear the burden of these hidden cost increases.**

23. Other major operating costs that are conveniently ignored: **road maintenance costs, potential spill clean-up costs, safety costs, pollution monitoring costs, future agricultural opportunity costs (due to the permanent loss of 65.7 acres of "Class A" land), and health costs to residents resulting from fuel oil burning.** (F.E.I.S Page 3-14.)

24. In the case of renewable electricity production technologies (wind, solar, photo-voltaic, biomass, etc.) there will be no potential for oil spills in the ocean or on land, no increase of traffic on Maui's roads and highways causing traffic delays, hazards and increased costs of road repairs and maintenance, no inherent health costs, and most importantly, no loss of prime agricultural land.

25. Because of the financial rewards (profits) to be achieved by operating an oil-burning power plant, it is clear why so little effort was made by MECO to give an objective review of the alternatives.

The entirety of the superficial section on non-fossil fuel burning alternatives (F.E.I.S., Pages 3-15 to 3-26) implies that a decision was made early-on in favor of an oil-burning plant and subsequently MECO did not look seriously at alternative energy sources or combinations.

## G. NEW RESEARCH AND TECHNOLOGY INFORMATION HAS BECOME AVAILABLE SINCE THE COMPLETION OF THE F.E.I.S.

27. In 1997 the U.S.A. joined with many other industrial nations in Kyoto, Japan in signing a treaty to reduce the levels of $CO_2$ by 7% below 1990 levels by the year 2010. This will help prevent the accumulation of green-house gasses.

It has been estimated by Mr. Richard Heede that the proposed power plant will add 2.8 billion pounds of $CO_2$ to the earth's atmosphere. This will certainly make it harder to achieve this national and global goal. (Mr. Richard Heede, Point 5)

28. Two of the more than twenty particulate constituents of diesel exhaust are so damaging to DNA that the National Research Council issued a directive ordering the EPA more stringently to limit PM2.5 emissions. These two bad actors are the polycyclical aromatic hydrocarbon compounds 3-nitrobenzanthrone and 1,8 dinitropyrene. They are the most carcinogenic compounds ever examined. Nitrobenzanthrone has the potential to cause 6.3 million mutations per nanomole (one-billionth the gram molecular weight), while a nanomole of 1,8 dinitropyrene can induce 4.78 million mutations in the standard Ames Test. These recent research findings led the EPA to admit that, "diesel exhaust is a probable human carcinogen." (Inside the EPA, March 13, 1998, vol.19, n.10 p.3)

According to table 4-4, page 4-10, Waena F.E.I.S., Nov. '97, maximum fuel flow is 13,306 lbs/hr. for each unit. Maximum possible fuel flow per unit is 116,560,560 lbs/year (13,306 lbs/hour X 24 hours X 365 days). Minus estimated down time (best guess) = 92,000,000 million lbs/year. Fuel + air + water = exhaust. Total annual mass flow through the turbine = 2,208,000,000 lbs/year. 3-Nitrobenzanthrone is present in diesel exhaust at between 1 and 2 ppm. Given this mass flow of 2,208,000,000 lbs/year/unit, 1 ppm is equal to 2,208 lbs/year, and 2 ppm is equal to 4,416 lbs/year.

According to Mr. Clary statements in the F.E.I.S and in testimony, 1/2 percent, plus or minus a factor of two, of the exhaust plume will remain on Maui. 1/2 percent of 2,208 lbs/year/unit = 11.04 lbs/unit year. 1/2 percent of 4,416 lbs/year/unit = 22.08 lbs/unit year. Therefore, the total range for the 3-nitrobenzathrone component of the exhaust remaining on Maui, according to Mr. Clary's model, is between 5.52 lbs/year/unit and 44.16 lbs /year/unit. Since 3-nitrobenzanthrone is measured in nanomoles, a nanomole being one-billionth the gram molecular weight, there are 9.08 billion nanomoles in 5.5 lbs and 72.64 billion nanomoles in 44.16 lbs. of 3-nitrobenzanthrone. As little as one nanomole can cause more than 6 million mutations to the DNA. 1,8 dinitropyrene would be emitted in approximately the same quantities.

**The total quantity of the two most carcinogenic substances known to man which would actually remain on Maui is somewhere between 10 and 88 lbs every year per unit.**

## H. MAUI'S ECONOMY COULD BE NEGATIVELY AFFECTED

29. The employment figures used in the F.E.I.S. are very one-sided. They merely mention the added employment resulting from the construction and operation of the oil-burning power plant and then the F.E.I.S. argues that this will be a help to Maui's economy and development.

The deception lies in the fact that **there will be greater employment and more development from alternatives technologies**.

30. **This oil-burning plant will affect Maui's business climate.**

The economy of the State of Hawai'i and has been suffering for many years. The effects are well known and are being aggressively addressed at the state legislature. But many of the causes of the slow-down result from reasons beyond the range of actions which the legislature can take. These primarily lie in the high costs of doing business in Hawai'i.

For example; high costs of shipping goods to Hawai'i (Matson Company makes an annual profit of about $70, 000,000 per year), high cost of gasoline which results in massive flows of dollars out of the state to non-Hawai'i oil companies.

**If this power plant is approved the costs for businesses on Maui may unnecessarily rise to levels that will raise business expenses, may kill all profits, and probably will force businesses now having difficulties into bankruptcy.**

**This will all be the result of rising fuel oil costs which will be passed on directly to businesses. Several alternative energy sources have NO fuel costs.**

31. **Other areas of the nation which do use alternative energy technologies will NOT be forced to incur business expenses resulting from rising fuel costs. Maui and all of Hawai'i will be at a competitive disadvantage if we do not wean ourselves from reliance on burning oil.**

32. **Some sense of how the average Maui household's finances would be affected by this power plant can be seen in the following calculations.**

The F.E.I.S. on page 3-14 shows 1.76 cents per KWH increase just for the capital cost construction of the power plant:

For average household using 6,500 kWh year ==> **+$114 / yr. /household**

Total trucking costs( in F.E.I.S. Appendix A) in present prices
$9 million / 100, 000 households ==> **+$90 / yr. / household**

Fuel costs in 1998 prices
$86.7 million / 100, 000 households ==> **+$867 / yr. / household**

33. There is no discussion of potential disruptions to the island's oil supply security (e.g. wars, shipping strikes, oil boycotts).

34. The **effects on traffic are understated** because only intersections were discussed. Road traffic has been ignored despite the fact that there will be 6 trucks

per hour during peak traffic ==> **one big, heavy, slow-moving truck every 10 minutes going up-hill on a highway that is seeing increased traffic use. There is little opportunity to pass on this narrow highway..**

35. There will be higher road costs to support the heavy, 9,000 gallon tanker trucks. The added costs to maintain State and County roads are not provided for.

## I. THIS PROJECT DOES NOT HAVE I.R.P. APPROVAL

36. A power plant such as the one being proposed by MECO should be part of an approved Integrated Resource Plan ( I.R.P.). Approval for a power plant should come from the Public Utilities Commission (P.U.C.), PRIOR to approval by the L.U.C.

37. An Integrated Resource Plan ( I.R.P..) for this power plant has yet to be approved by the Public Utilities Commission (P.U.C.). To-date the P.U.C. has only given permission to purchase the 65.7 acres. (F.E.I.S, Page 2-9)

## J. MECO'S MOTIVATION TO BUILD A COSTLY FUEL-BURNING POWER PLANT IS AGAINST THE INTERESTS OF THE GENERAL PUBLIC

38. Because of the way the P.U.C. allows utilities to set rates, it is MORE advantageous (PROFITABLE) for MECO to build a costly fuel-burning power plant than a less expensive alternative energy facility. This is because the P.U.C. allows the utility to get a certain rate of return on its capital costs. The bigger the plant; the higher the profits.

Furthermore, fuel costs can be directly passed on to the customers (the residents and businesses of Maui). Therefore, from MECO's point of view, there is little incentive to get away from an oil-burning power plant, and a considerable advantage to propose, construct and operate such an oil-burning power plant

39. It seems that MECO wants this oil-burning power plant as long as the people and businesses of Maui pay for the rising fuel costs and all the other hidden real costs incurred. If MECO were forced to absorb the additional fuel and other real costs over the next thirty years, MECO would probably initiate more effective demand-side management programs, put in wind mills, or develop some other alternative energy technology.

## PROPOSED CONCLUSIONS OF LAW

1. The Land Use commission should deny this petition because the **Constitution of the State of Hawai'i**, in Article XI Conservation and Development of Resources states in Section 1 "for the benefit of present and future generations, **the State ... shall conserve and protect** Hawai'i's natural beauty and all natural resources, including land, water, air, minerals and energy sources, and **shall promote the development and utilization of these resources in a manner consistent with their conservation and furtherance of self-sufficiency of the state**..."

2. The Land Use commission should deny this because petition the **Constitution of the State of Hawai'i**, in Article XI states in Section 3, dealing with Agricultural Lands that "**The State shall conserve and protect agricultural lands**, promote diversified agriculture, **increase agricultural self-sufficiency and assure the availability of agricultural suitable lands**. The Legislature shall provide standards and criteria to establish the foregoing. **Lands identified by the State as important agricultural lands needed to fulfill the purposes above shall NOT be reclassified by the State or re- zoned ...without meeting the standards and criteria established by the legislature** ..."

3. The Land Use commission should deny this petition because H.R.S. 205-4 (h) states that"No amendment of a district boundary shall be approved unless the commission finds upon the clear preponderance of the evidence that the proposed boundary is ... consistent with the policies and criteria established pursuant to sections 205-16 and 205-17"

4. The Land Use commission should deny this petition because H.R.S. 205-17 indicates the land use commission decision making criteria. It requires that the

**Land Use Commission** " in its review of any petition for reclassification for district boundaries pursuant to this chapter (that) the Commission **shall specifically consider the following**:

(1) The extent to which the proposed reclassification **conforms to the applicable goals, objectives, and policies of the Hawai'i state plan** and relates to the applicable priority guidelines of the Hawai'i state plan **and the adopted functional plans**.

(2) The extent to which the proposed reclassification conforms to the applicable district standards; and

(3) The impact of the proposed reclassification on the following areas of state concern: ...

(C) Maintenance of other natural resources relevant to Hawai'i's economy including, but not limited to, agricultural resources;

5. The Land Use commission should deny this petition because The **Hawai'i State General Plan** states in H.R.S. 226-18

"Objective and policies for facility systems -- energy / telecommunications

(a) **planning for the State's facility systems with regard to energy** / telecommunications shall be directed towards the achievement of the following objectives:

(2) **Increased energy self-sufficiency where the ratio of indigenous to imported energy use is increased**; and

(3) **Greater energy security in the face of threats to Hawai'i's energy supplies and systems**.

(b) To further achieve the energy objectives, it shall be the policy of this State to:

(3) **Promote prudent use of power and fuel supplies through conservation measures** including:

(A) **Development of cost effective demand side management programs** ...

(C) **Adoption of energy efficient practices and technologies**.

(4) Insure that the development or expansion of power systems and sources adequately consider environmental, public health, and safety concerns, and resource limitations.

6. The Land Use commission should deny this petition because The **current State Energy Functional Plan** identifies formal energy objectives based on the statutory objectives. These are:

"**moderate the growth in energy demand through conservation and energy efficiency**; **displace oil and fossil fuels through alternate and renewable resources**; support and develop and integrated approach to energy development and management."

7. The Land Use commission should deny this application because a major theme contained within the objectives of the Maui County General Plan, is to: **"Protect Maui County's agricultural land and rural identity."** (F.E.I.S. Section 5.7 on Pp. 5-18)

8. The Land Use commission should deny this petition because a major objective of the Maui County General Plan within the land use section of the plan, Objective 3, Policy A is to **"Protect prime agricultural lands from competing non-agricultural land uses"** (F.E.I.S. Section 5.7 on PAGE 5-18)

9. The Land Use commission should deny this petition because a major objective of the Maui County General Plan within the land use section of the plan, Objective 3, Policy D is to **"Discourage the conversion of productive or potentially productive agricultural lands to non-agricultural purposes."** (F.E.I.S. Section 5.7 on PAGE 5-18)

10. Significantly, MECO included in their application for a boundary change some of the less relevant sections of the Maui County General Plan. However MECO omitted the relevant energy section. The Land Use commission should deny this application because the Maui County General Plan clearly states in Energy Objective #1: "**To make Maui County more self-sufficient in its need for non-renewable energy and more efficient in its use of energy.**"

11. In both the approved and newly proposed versions of the Wailuku-Kahului Community Plans, (F.E.I.S. Section 5.8.1 on Page 5-20), (F.E.I.S. Section 5.8.2 on Page 5-21) the recommendations pertaining to energy planning are clear and consistent.

The Land Use commission should deny this petition because both of these plans state recommendations to "**Promote the use of alternative energy sources, such as biomass, wind, and solar**." (Page 5-21)

(It should be noted that this is the ONLY statement relating to energy cited in the two Wailuku-Kahului Community Plans and it clearly indicates that within the Wailuku-Kahului region, alternate energy resources are preferred).

12. In both the approved and newly proposed versions of the Wailuku-Kahului Community Plans, (F.E.I.S. Section 5.8.1 on Page 5-20), (F.E.I.S. Section 5.8.2 on Page 5-21) the recommendations pertaining to energy planning are clear and consistent.

The Land Use commission should deny this petition because **both plans state, "Preserve agricultural lands as a major element of the open space setting which borders the various communities within the planning region."**

An LUC district reclassification for the purpose of an oil-burning power plant would violate the Community Plan.

**NOTE:**

**If a "Fact" is construed as a "Conclusion of Law", then it should be treated as such; and**

**If a "Conclusion of Law" is construed as a "Fact, then it should be treated as such.**

## PROPOSED ORDER

Whereas the Land Use Commission is unable to find adequate justification at this time for a boundary amendment re-classification from the agricultural to the urban district, this petition is hereby denied.

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## IN THE ALTERNATIVE, (WHICH INTERVENORS BELIEVE SHOULD BE INAPPLICABLE) CONDITIONS

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1. No further re-zoning or re-classification permits or amendments should be applied for by Maui Electric Company, Limited until the Public Utilities Commission approves an Integrated Resource Plan which would allow for an oil-burning power plant at the proposed Waena site.

2. No power plant should be constructed or applied for by Maui Electric Company, Limited without first being in compliance with the State of Hawai'i General Plan, County of Maui General Plan, and the Wailuku-Kahului Community Plan which variously include the following objectives:

    1. Dependable, efficient and economical energy systems

    2. Increased self-sufficiency where the ratio of indigenous to imported energy use is increased

    3. Greater energy security in the face of threats to Hawai'i's energy and supply systems

    4. Promote the use of alternative energy sources, such as wind, biomass, and solar

    5. Make Maui county more self-sufficient in its need for non-renewable energy and more efficient in its use of energy

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAII

| | | |
|---|---|---|
| In the Matter of the Petition of Maui Electric Company, Ltd. | ) | DOCKET NO. A97-722 |
| To Amend the Agricultural Land Use District Boundary into the Urban Land Use District for Approximately 65.7 Acres of Land at Wailuku and Makawao Districts, Island of Maui, State of Hawaii, Tax Map Key Nos.: 3-8-03: 23 and 3-8-03: 24 | ) | |

ORIGINAL

LAND USE COMMISSION
STATE OF HAWAII
MAY 14 3 57 PM '98

THE OFFICE OF PLANNING'S PROPOSED FINDINGS OF FACT CONCLUSIONS OF LAW, AND DECISION AND ORDER

Maui Electric Company, Limited, the Petitioner, whose business and mailing address is P.O. Box 398, Kahului, Maui, Hawaii, 96733-6898, filed a Petition with the Land Use Commission ("Commission") on November 1, 1998, pursuant to Chapter 205, Hawaii Revised Statutes ("HRS"), as amended and Chapter 15-15, Hawaii Administrative Rules ("Commission Rules"), to amend the Land Use District Boundary to reclassify approximately 65.7 acres situated in the Wailuku and Makawao Districts, Island of Maui, Tax Map Key Nos.: 3-8-03: 23 and 3-8-03: 24, ("Property") from the Agricultural District to the Urban District to permit the construction of the Waena Generating Station.

The Commission, having heard and examined the testimony and evidence presented during the hearing, the Petitioner's proposed findings of fact, conclusions of law and decision and order, the responses to Petitioner's findings of fact, conclusions of law, and decision and order by the County of Maui Planning Department ("Planning Department"), the Office of Planning ("OP"), and Maui Tomorrow ("Intervenor"), hereby makes the following findings of fact, conclusions of law, and decision and order:

PROCEDURAL MATTERS

1. On October 24, 1997, Petitioner filed a Petition for Land Use Boundary Amendment, and Exhibits Nos. 1, 2, 3, 4, 5, and 6.

2. On November 3, 1997, the Land Use Commission deemed the Petition defective.

3. On November 7, 1997, the Petition was deemed a proper filing.

4. On November 10, 1997, Petitioner filed signed replacement page for Petition page 29.

5. On November 17, 1997, Petitioner filed the Waena Generating Station Final Environmental Impact Statement (FEIS).

6. On December 3, 1997, the County of Maui filed the Position of the Maui Planning Department in Support of the Position.

7. On December 8, 1997, the Office of Planning filed a Statement of Position in Support of the Petition.

8. On December 22, 1997, Mr. Mark Sheehan, President, Maui Tomorrow, filed a Petition for Intervention.

9. On January 22, 1998, the commission took action on the intervention and the Intervenor was granted authority to intervene.

10. On February 3, 1998, the Land Use Commission held a prehearing conference for the subject Petition.

11. On February 26 and 27, 1998, the Land Use Commission conducted a hearing held in the Nahele Room of the Sandalwood Clubhouse, 2500 Honoapiilani Hwy., Waikapu, Maui.

12. On April 8, and 9, 1998, the Land Use Commission conducted a continued hearing in the Nahele Room of the Sandalwood Clubhouse, 2500 Honoapiilani Hwy., Waikapu, Maui.

13. On April 24, 1998, Petitioner filed the following Motions In Limine:

- #1: to Preclude Admission of Maui Tomorrow's Exhibits 4 & 5; Declaration of Randall H. Endo; Exhibits "A" & "B";

- #2: To Preclude Testimony of Roy Smith and Erik Frye as Experts in Air Quality and Air Impacts; Declaration of Randall H. Endo; Exhibits "A" & "B";

- #3 To Preclude Testimony of Steven Moser as an Expert in Air Quality and Air Quality Impacts; Declaration of Randall H. Endo; Exhibit "A";

- #4: To Preclude Testimony of James Williamson as an Expert; Declaration of Randall H. Endo; Exhibit "A";

- #5: To Preclude Testimony of Dick Mayer and Ian Chan-Hodges as Experts; Declaration of Randall H. Endo; Exhibits "A" & "B"

14. On April 23, and 24, 1998, the Land Use Commission conducted a continued hearing in the Nahele Room of the Sandalwood Clubhouse, 2500 Honoapiilani Hwy., Waikapu, Maui.

15. On May 1, 1998, the Land Use Commission filed:

- An Order Granting Petitioner's April 24, 1998 Request To Strike Any and All References To Mr. Paul and Mr. Schoeder's Positions with the University of Hawaii Contained in the Record, Including MECO's Witness Lists;

- An Order Denying Maui Electric Company, Limited's Motion To:

1) Preclude Intervenor Maui Tomorrow from submitting Exhibits or Presenting Witnesses Not Identified By the Deadlines Established in the Commission's Prehearing Order (Filed February 4, 1998);

2) Limit the Testimony of Intervenor Maui Tomorrow's Expert Witnesses to the Subject Matter and Material Disclosed Pursuant to the Commission's Prehearing Order; and

3) Restrict Intervenor Maui Tomorrow From Engaging in Repetitious and Duplicative Cross-Examination.

- Order Denying Applicant's Motion in Limine to Preclude Admission of Maui Tomorrow's Exhibits 2, 3, & 12;

- Order Denying Applicant's Motion in Limine #1: to Preclude Admission of Maui Tomorrow's Exhibits 4 & 5;

- Order Granting Oral Motion to Withdraw Applicant's Motion in Limine #2: To Preclude Testimony of Roy Smith and Erik Frye as Experts in Air Quality and Air Quality Impacts;

- Order granting Applicant's Motion in Limine #3 To Preclude Testimony of Steven Moser as an Expert in Air Quality and Air Quality Impacts;

- Order granting Oral Motion to Withdraw Applicant's Motion in Limine #4: To Preclude Testimony of James Williamson as an Expert;

- Order granting Oral Motion to Withdraw Applicant's Motion in Limine #5: To Preclude Testimony of Dick Mayer and Ian Chan-Hodges as Experts.

DESCRIPTION OF THE PROPERTY

16. The Property encompasses lands owned in fee by Maui Electric Company, Limited, a subsidiary of Hawaiian Electric Company (HECO), which in turn is a wholly owned subsidiary of Hawaiian Electric Industries (HEI), a holding company with publicly traded stock. Maui Electric Company will develop the Property. (OP's Exhibit No. 1, p. 1)

17. The Property is situated in the Wailuku and Makawao Districts, north of Waiko Road at its intersection with Pulehu Road, approximately one quarter mile above the Central Maui Landfill on the Island of Maui. ( Petition p. 2, and TR. 02/26/98, p.89, lns. 16 to 23.)

18. The Property is identified by Tax Map Key Nos. 3-8-03:23 and TMK: 3-8-03:24 consisting of 65.7 acres, inclusive of all existing easements identified as Easements 1 -11 described in Exhibit 2. (Petition p. 2.)

19. The Property encompasses two adjacent parcels totaling approximately 65.7 acres. Parcel 23 is the smaller of the two parcels with a total acreage of 15.127 acres. Parcel 24 encompasses approximately 50.573 acres. (Petition p. 2, Petitioner's Exhibit No. 2, attachments, and Office of Planning, Exhibit No. 1, p.2.)

20. The Property has eleven (11) easements. HC&S holds 4 easements within the Property for the maintenance and use of its irrigation ditch. Exhibits A and B of Petitioner's Exhibit No. 2 identify and describe easements 1- 4 held by HC&S, and easements 5-11, granted to MECO for transmission line use. (Office of Planning, Exhibit No. 1, p.2, and Petitioner's Exhibit No. 2, Exhibit A, and Exhibit B)

21. The Property is currently leased to Hawaiian Commercial & Sugar Company (HC&S) for sugar cane cultivation. (Petitioner's Exhibit No. 2, Exhibit C)

22. According to the letter of agreement, the Petitioner agreed to lease the Property to HC&S on a month-to-month basis at no rent for sugar cane cultivation, until the Property is required for development by MECO for utility purposes, or until December 31, 2004, whichever comes first, or if cultivation of crops on the premises is no longer permissible by law. According to the Petition, HC&S must use the Property solely for crop cultivation. (OP's Exhibit No. 1, p. 2 and Petitioner's Exhibit No. 2-C )

23. Petitioner's Exhibit 2, evidences the Final Order of Condemnation of the Property and easements 5-11 for the construction of a power generation facility. (Petitioner's Exhibit No. 2, pp. 1 and 2.)

24. Lands immediately surrounding the site are owned by Alexander & Baldwin-Hawaii, and are used for sugar cane cultivation. (OP's Exhibit No. 1, p. 4)

25. The Letter Agreement, dated October 31, 1996, expands and clarifies the intentions of A&B-Hawaii, Inc., and the Petitioner, originally stated in Petitioner's Letter Agreement dated January 31, 1996, regarding the relocation and setting aside of Easements 5 through 11 for the engineering, design and construction of the Petitioner's transmission lines for the proposed Central Maui Power Plant project. (Petitioner's Exhibit No. 2, Exhibit D)

26. According to the Letter of Agreement, A&B will be given an opportunity before the design of transmission lines to proposed alternative transmission alignments that would better serve the interests of A&B. The Petitioner shall not be required to pay any additional compensation to A&B for any substitute easements that may be agreed upon. However, if A&B makes a second request to relocate, A&B shall bear the full cost of any such subsequent relocation of the easements. (Petitioner's Exhibit No. 2, Exhibit D)

27. Elevations on the Property range from approximately 335 feet above mean sea level (MSL) on the western side nearer Puunene, to approximately 365 feet above MSL on the eastern side near the intersection of Waiko and Pulehu Roads. The Property has a gently sloping topography, with an average slope from the southeast to northwest across the site of about one degree. (OP's Exhibit No. 1, p. 3)

28. Surface water in the area is comprised of reservoirs, irrigation ditches and intermittent natural streams within Kalialinui Gulch and Pulehu Gulch. Surface water runoff generated from the Property and adjacent areas is generally through a series of gulches extending from the upper slopes of Haleakala towards the central isthmus area. The Property is drained by Kalialinui Gulch, located a quarter mile to the north, and by Pulehu Gulch, located a mile to the

south of the project site. The proposed Waena Generating Station will be located approximately 1,000 feet from Kalialinui Gulch and 5,000 feet from Pulehu Gulch. (OP's Exhibit No. 1, pp. 3-4.)

29. The mountainous topography of both east Maui (Haleakala) and west Maui tend to channel prevailing winds through the central valley area. The sloping terrain from the shoreline to higher elevation at the site will also tend to escalate the wind speeds.(Petitioner's FEIS, p. 4-24)

30. The project site is underlain by a thin cover of topsoil lying on top of andesitic lava flows of the Kula volcanic series, which in turn overlie much older basaltic lava flows of the Honomanu volcanic series. These series erupted from Haleakala Volcano. (OP's Exhibit No. 1, p. 27.)

31. Subsurface conditions along the preferred, and alternative line corridors are anticipated to generally consist of clays and clayey silts underlain by hard andesitic bedrock. The corridor along most of Pulehu Road extends across the youngest lava a'a flows in the study area and hard bedrock is anticipated to be present within about 3 feet below the existing ground surface. The remainder of the corridors cross over soils consisting of alluvium derived from surrounding a'a flows and weathered volcanic ash. Hard bedrock is anticipated to be present at depths greater than 5 to 6 feet below the existing ground surface. (OP's Exhibit No. 1, p. 27.)

32. The Property is located in a dry area, with the median rainfall amounting to only 17 to 20 inches a year. Rainfall in the central Maui isthmus is evenly distributed, averaging approximately 28 inches a year over an area of approximately 200 square miles. The dry and windy conditions allow only a small percentage of rainfall to percolate deep enough below the ground surface to become groundwater recharge. (Petitioner's FEIS, p. 4-25)

33. The U.S. Department of Agriculture, Soil Conservation Service, Soil Survey of Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii, identifies the soils within the Property as belonging to the Waiakoa Series, silty clay loam occurring on 3 to 7 percent slopes.

Waiakoa Series, silty clay loam is composed of generally stony soil, grading to hard bedrock within a depth of approximately 5 feet. Lava flows over the Property are a'a. Due to the undulating nature of the surface a'a flows, the depth of a'a bedrock will vary across the site and can range from 25 to 35 feet thick and consist of clinker zones above and below a massive, highly to moderately fractured a'a core. Runoff potential of this type soil is slow to medium and the erosion hazard is slight to medium. (OP's Exhibit No. 1, p. 3)

34. Surface soils along the preferred and alternate transmission line corridors have been classified as the Molokai Series (M), Paia Series( Pc), Waialoa Series (W), Ewa Series (E), Iao Series (I), Alae Series (A), Pulehu Series (Ps), and Rockland (R). The Molokai and Paia soils evolved from weathered a'a lavas and volcanic ash. At the ground surface, they consist of silty clay loam, grading to saprolite then to soft, highly weathered rock at a depth of approximately six feet. The Ewa, Iao, Alae, and Pulehu Series consist of alluvial soils derived from the weathered a'a flows. The soils reach depths of greater than 5 feet, and range from loams to clays with varying amounts of sands, stones, and cobbles. The Alae soils also contain weathered volcanic ash. (OP's Exhibit No. 1, p. 3)

35. The University of Hawaii Land Study Bureau's Detailed Land Classification rates the productivity rating of soils. Productivity ratings range from "A" lands which are very productive to "E" lands which are considered unproductive for cultivated agriculture. Petitioner's Exhibit 9 indicates that the Land Study Bureau Detailed Land Classification (productivity rating) for the Property is "A". A rating of "A" means that the condition of the soil is very good for agricultural operations. (OP's Exhibit No. 1, p. 3)

36. The Property contains land classified as Prime Agricultural Land according to the Agricultural Lands of Importance to the State of Hawaii (ALISH) map. (OP's Exhibit No. 1, p. 3)

37. According to the Flood Insurance Rate Map, the Property has been classified as Zone C, indicating areas that experience minimal flooding, and not considered to be in a flood plain area. (OP's Exhibit No. 1, p. 3.)

PROPOSAL FOR RECLASSIFICATION

38. The proposed reclassification will allow Petitioner to construct a new power generating facility in Central Maui which will: maintain an adequate system margin-of-reserve generating capacity; increase overall system reliability; replace older generation facilities scheduled for retirement; and provide additional capacity to meet projected demand for electric service. The Petitioner proposes to develop the 232-megawatt (MW) electrical generating station in four 58-MW phases. (TR. 4/23/98, p. 133. ln. 18, and Petitioner's FEIS, p.ES-2)

39. At full buildout, the major components required to operate a 232-megawatt (MW) electrical generating station will include:

- Four diesel oil-fired 58-MW dual-train combined-cycle (DTCC) units, exhausted to four two-flue 150-foot-tall stacks
- Four steam turbines
- Four steam condensers
- Four control houses
- A control room, including control equipment, offices, file room, kitchen, restrooms, showers, lockers, and meeting room.
- Fire protection system
- Supply wells
- Water treatment facility
- Injection wells
- Water and air laboratory
- Maintenance shop
- Warehouse and storage areas
- Relay building
- Switch yard
- Fuel storage tanks
- Fuel storage tank berms
- Fuel unloading area
- Administration building

- Leach field
- Related 69-kV transmission line corridors
- Possible 12-kV distribution line corridors
- Possible gasoline storage area
- Possible transmission and distribution warehouse offices
- Possible transmission and distribution storage and parking area

(Petitioner's FEIS, pp. 3-1 through 3-5.)

40. The Waena Generating Station will be built in four 58-MW phases. In each of the four phases described by the Petitioner, a dual train combined cycle (DTCC) unit would be added to the station. Each DTCC unit would consist of two 20 MW combustion turbine (CT) generators fitted with two heat recovery steam generators (HRSGs) and one 18 MW steam turbine (ST) generator. (Petitioner's FEIS, p.3-1 , TR. 3/26/98, p. 94, lns. 19 25, and p. 95, lns. 1 to 4.)

41. The first of two 20 MW combustion turbine (CT) generators complete with heat recovery steam generators, is planned to be installed at the Waena Generating Station in calendar year 2004. TR. 3/26/98, p. 95, lns. 12 to 14.)

42. The second CT unit with heat recovery steam generators plus an 18 MW steam turbine (ST) generator will be added to the station in calendar year 2006 to complete Phase I installation of the first of three DTCC units. The three remaining DTCC units to be installed, each comprised of similar CT, HRSG, and ST modules, are planned to be added to the station in the calendar years 2010 (Phase II) and 2016 (Phase III), and beyond 2020 (Phase IV). (Petition, p.3 )

43. The existing Maalaea-Kealahou and Kanaha-Pukalani 69-kV transmission lines will be reconfigured through the proposed Waena Switchyard. As demand for more power increases, two new transmission lines from the Property will be constructed to connect with the Puunene and Paia Sugar Mill substations to support any growth in demand for additional electricity. Pending demand requirements, two proposed 12-kV distribution lines from the Property to the Puunene area may also be added to these corridors. (Petitioner's FEIS, pp. 3-6 )

Electric and Magnetic (EMF) Levels

44. The proposed transmission lines will pass through undeveloped land used for sugarcane cultivation. No residential areas or other sensitive receptors are located within 250 feet of any of the proposed transmission lines, and no development exists around the Property proposed for the Waena Generating Station. (OP's Exhibit No. 1, p.55.)

45. Enertech Consultants calculated the Electric and Magnetic (EMF) levels for the proposed generating station and transmission lines in May, 1997. Their computer modeled calculations were based on five power configurations--the two 69-kV existing transmission lines running adjacent to the Property, and three proposed transmission lines. The configurations are listed below:

- Existing Maalaea-Kealahou 69-kV single-circuit transmission line;
- Existing Kanaha-Pukalani 69-kV single-circuit transmission line;
- Proposed Pulehu Road-North Firebreak Road 69-kV single-circuit transmission line with a 12-kV double-circuit distribution line;
- Proposed North Firebreak Road-Paia 69-kV single-circuit ; and the
- Proposed North Firebreak Road-Puunene 69-kV single-circuit transmission line with a 12-kV double-circuit distribution line.
(OP's Exhibit No. 1, p. 55.)

46. The distances modeled to calculate the impacts from EMF levels ranged from -250 feet out to +250 feet from the centerline directly beneath the proposed powerlines. Loading differences on the Kanaha-Pukalani and Maalaea-Kealahou lines entering and leaving the proposed station were also modeled. Table 4-18 in the Petitioner's FEIS shows the modeled magnetic field levels for the five transmission line configurations given in milliGauss (mG). (OP's Exhibit No. 1, p.55.)

47. The results indicated that the generating station equipment, due to its location near the center of the station, and the switchyard equipment, will not contribute significantly to the magnetic field levels at the perimeter of the station. The major source magnetic fields at the proposed station's boundaries and beyond are due primarily to the 69-kV and 12-kV overhead transmission lines which enter and leave the station along Pulehu and Waiko Roads. Although the

proposed generating station will represent an increase in the magnetic field levels found along Pulehu Road and North Firebreak Road, studies to date have been inconclusive as to the health impacts from electric and magnetic fields. (OP's Exhibit No. 1, pp. 55 and 56.)

48. Fuel storage tanks will be placed on impervious surfaces which will be constructed within berms equipped with oil/water separators to remove oil before disposal, and specially designed to contain fuel leakage or spills. These containment areas will have the capacity to contain the entire contents of the storage tank within its area. Each storage tank will be equipped with fuel level alarms to prevent overfills. (Petitioner's FEIS, p.3-6 and TR. 4/8/98, p. 22, lns. 21 to 25.)

49. The combustion turbines will be fueled by No. 2 diesel fuel, which will be transported by tanker trucks from Kahului Harbor. At full buildout, the operation of four DTCC units (eight combustion turbines) will require approximately 44 truckloads of No. 2 diesel fuel daily with deliveries averaging about 9,000 gallons of fuel. At full buildout, the daily supply (44 fuel trips) will be transported from Kahului Harbor in tanker trucks traveling along Hobron Avenue, Hana Highway, and Pulehu Road to the Property. The Petitioner estimates approximately 11 to 12 fuel trips per day to the Property at the completion of Phase I of the proposed Waena Generating Station in 2006. (Petitioner's FEIS, p.3-6 )

50. A 30-day supply of fuel would be kept at the generating station. Each new combustion turbine requires approximately 39,000 gallons of fuel per day. At full buildout, the operation of a 232-MW generating station using four DTCC units, and operating under continuous baseload conditions, will use approximately 312,000 gallons of fuel per day. (Petitioner's FEIS, p.3-8 )

51. The fuel will be stored in nine cylindrical steel tanks. All nine fuel tanks will be approximately 36 feet high. Two of the fuel tanks will be 50 feet in diameter, and will each hold approximately 529,000 gallons of fuel. The remaining tanks will be 80 feet in diameter, and will each hold approximately 1.35 million gallons of fuel. (Petitioner's FEIS, p. 3-6 )

52. According to the information provided in the FEIS, nonpotable water needs for the proposed Waena Generating Station can be met by drilling and developing wells on the property. (OP's Exhibit No. 1, p. 31.)

53. Half of the groundwater withdrawn (0.44 mgd) will be returned to the aquifer by means of injection wells, and according to a letter dated November 3, 1997, from the Petitioner to OP, would represent a net loss of approximately 0.6 mgd from the underlying aquifer. (OP's Exhibit No. 1, p.31.)

Project Cost

54. In the Petitioner's Application and Certificate of Service submitted to the Public Utilities Commission, February 1996, the Petitioner requested approval to commit funds in excess of $500,000 to purchase the Property for the construction of the proposed Waena Generating Station. (OP's Exhibit No. 1, p. 11, and TR. 02/26/98, p.97, lns. 9-15.)

55. In its Decision and Order No. 14674, the PUC supported the Petitioner's conclusion that additional generation on the Island of Maui will be required through 2016. The PUC found the Petitioner's request for funds reasonable and in the public interest. The Petitioner purchased the Property in November 1996. (OP's Exhibit No. 1, pp. 13-14.)

56. The Petitioner purchased the site in November 1996, at a cost of $1,847,648. The estimated cost for construction of the initial Phase I is approximately $105,370,000. Construction cost for the entire Waena Generation Station is estimated at approximately $417,559,668. The Petitioner has estimated that the cost to rate payers will be an additional 1.76 cents per kilowatt-hour in 1997 dollars for the first DTCC unit. (Petitioner's FEIS, pp. 3-14 to 3-15, and TR. 3/26/98, p. 76, lns. 13 to 16.)

57. The following table describes development timetable and costs for the project.

**Project Cost and Schedule**
**56. Dollars)**

| Project Component | Acreage | Cost | Construction Start | Operation Date |
|---|---|---|---|---|
| Land Costs | 65.7 | $1,847,648 | n/a | 1997 |
| DTCC 1/ | | | | |
| Site Development | 65.7 | $105,370,000 | 2002 | 2006 |
| DTCC 2 | 0 | $96,857,000 | 2005 | 2010 |
| Transmission Lines | n/a | $10,419,000 | 2003 | 2004-2020 |
| Transmission & | | | | |
| Distribution Facility | 0 | $5,900,000 | 2014 | 2016 |
| DTCC 3 | 0 | $100,318,000 | 2009 | 2016 |
| DTCC 4 | 0 | $96,848,000 | 2013 | 2020 |
| **Total Project Cost** | | **$417,559,668** | | |

(Petitioner's FEIS, p.3-15)

PETITIONER'S CAPABILITY TO UNDERTAKE THE PROPOSED DEVELOPMENT

58. The Petitioner's net income for the month of August 1997 was $1,525,414, with an accumulated year to date net income of $9, 213, 872. The Petitioner's accumulated net income for the 12 months from August 1996 to August 1997 was $15,016,036. (Petitioner's Exhibit No. 5, p. 2 and OP's Exhibit No. 1, p. 11.))

59. The proposed Waena Generating Station project will be funded through the Petitioner's customer base and will not require expenditures by either the State of Hawaii, or the County of Maui. (OP's Exhibit No. 1, p. 10.)

60. The Petitioner can request the authority from the Public Utilities Commission (PUC) to make expenditures for construction of the proposed generating station and recapture costs through the electricity rate paid by the Petitioner's Customers. (OP's Exhibit No. 1, pp. 10-11.)

61. The Petitioner is a subsidiary of Hawaiian Electric Company, Inc. (HECO), which in turn is a wholly owned subsidiary of Hawaiian Electric Industries (HEI), a holding company with publicly traded stock. OP's Exhibit No. 1, p. 10.)

62. As a publicly traded company, the Petitioner has access to sufficient economic resources required to develop the project. The Petitioner is also able to issue bonds and stock to finance the project. The monthly financial report for August 1997 provides information on the Petitioner's financial capability and shows the Petitioner's net income for the month of August 1997 was $1,525,414, with an accumulated year to date net income of $9,231,872. (OP's Exhibit No. 1, p. 10.)

63. In February 1996, the Petitioner submitted an Application and Certificate of Service to the Public Utilities Commission (PUC) requesting approval to commit funds in excess of $500,000 for the acquisition of the site to support the construction of the proposed Waena Generating Station. The PUC found MECO's request for funds reasonable and in the public interest. (OP's Exhibit No. 1, p. 11.)

STATE AND COUNTY PLANS AND PROGRAMS

64. The proposed reclassification is in general conformance to §15-15-18 of the Land Use Commission rules, standards for determining "U" Urban District boundaries. (OP's Exhibit No. 1, p.22.)

65. The Property is currently designated as "Interim" under Maui County's Zoning Code. Use of the Property for the proposed generating Station project will require a change in the current County zoning classification from "Interim" to "Heavy Industrial." (OP's Exhibit No. 1, p. 25.)

66. The Wailuku-Kahului Community Plan designation for the Property is "Agricultural." The proposal to construct and operate a generating facility will require a change in the existing Community Plan designation to "Heavy Industrial." (OP's Exhibit No. 1, p. 25.)

67. The Maui Planning Department recommends that the Maui Planning Commission recommend to the County Council conditional approval of the Community Plan Amendment from Agriculture to Heavy Industrial Use and a Change in Zoning from Interim District to M-2 Heavy

Industrial District. (County Department of Planning's Recommendation to the Maui Planning Commission March 10, 1998, p. 3.)

68. Although the Maui Planning Department recommended approval of the Community Plan Amendment and Change in Zoning request from the Petitioner, the Planning Commission voted to make no recommendation to the Maui County Council. (TR. 4/23/98, p. 74, ln. 25, and p. 75, lns. 1 to 25.)

69. The County Planning Commission raised the following nine concerns that they wanted the County Council to consider.

- Address greater demand-side management and make efforts to cut demand through conservation.
- Review growth demand estimates and projections.
- Address rate control as an incentive to diversify from dependency on fossil fuels.
- Close the Maalaea and Kahului generating plants.
- Adhere to lighting standards by "night skies."
- Commit to renewable fuel technology or other alternatives by a certain time frame.
- Establish emission control monitoring so public has 24- hour access to inform authorities, especially Department of Health.
- Further investigate Best Management Practices of Ammonia, sludge, and other potentially hazardous materials and wastes.
- Get involved in a county-wide energy symposium in order to get feedback from the public on energy resources.

70. The Petitioner will seek a Community Plan Amendment and Change in Zoning from the County of Maui, and according to the County's Position Statement, appropriate mitigation measures can be imposed by the County of Maui at the time of the request. (OP's Exhibit No. 1, p. 57.)

71. The County of Maui supports MECO's Petition for a land use change. (TR. 4/23/98, p. 69, lns. 12 and 13.)

72. The County of Maui supports the Petition for the following reasons:

• Due to potential impacts on other urban uses, the isolation of the site reduces adverse impacts that may be associated with the use such as noise, traffic, et cetera. Also, the process conducted by MECO selected this site as the best location based on the technical needs of the generating station and its impacts. Further, the development of the site is proposed in four distinct phases over a 20-year time period. The phased development of the site does not preclude MECO from considering alternative energy sources as technology advances and trends change. The generating station is not necessarily limited to the use of fossil fuels.

• The site will provide for future energy needs of the county, It is located near existing service corridors that make connection to the existing electrical grid convenient and efficient. Also, future transmission corridors are available from the project site to other areas to meet future needs as they occur.

• Necessary infrastructure and public services to the site will be provided through either existing systems and services or by alternative measures such as on-site brackish water wells, injection wells, septic systems, et cetera.

• The Petitioner has concurrently applied to the County of Maui for a Community Plan Amendment to amend the land use map of the Wailuku-Kahului Community Plan and a Change in Zoning in order to established a power generating station on the site. The petitioner will not be able to proceed with construction until county approvals of the amendments are granted in addition to the State district boundary amendments.

• The project will not contribute towards scattered spot urban development, necessitating unreasonable investment in public infrastructure or support services. The location of the generating station is based upon technical needs as well as potential impacts associated with the use. (TR. 4/23/98, p. 70, lns. 8 to 25, and p. 71, lns. 1 to 25)

73. The County of Maui owns and maintains Pulehu Road, which runs adjacent to the Property. Across Pulehu Road from the site are the Central Maui Sanitary landfill, owned and operated by the County of Maui, and a quarry operated by Ameron HC&D. The quarry activities are located on lands owned by A & B-Hawaii. Both quarry and landfill operations have proposed

expansions. The proposed expansion of the landfill will encompass approximately 60 acres, while the expansion of the quarry will encompass approximately 41 acres. (OP's Exhibit No. 1, p. 4)

74. Other potential projects within the Central Maui isthmus include: the expansion of Kahului Airport; a development of the Maui Economic Opportunity facility; and the County of Maui bus maintenance facilities near the old Puunene Airport. (OP's Exhibit No. 1, p. 4.)

75. The Maui County Council has been requested to designate approximately 50 acres near the intersection of Waiko Road and Mokulele Highway to light industrial use to recognize existing land uses and allow for expansion of the Mokulele Baseyard. (OP's Exhibit No. 1, p. 4.)

76. The Department of Hawaiian Home Lands has indicated that they are acquiring land near the old Puunene Airport for future use. (OP's Exhibit No. 1, p. 4.)

77. The community of Puunene is the nearest location of residential and commercial uses, approximately 3 miles northwest of the Property. Approximately 4 miles Southwest of the Property, is the community of Pukalani. (OP's Exhibit No. 1, p. 4.)

Proposed Land Use Developments in Central Maui

78. The OEQC commented that the several projects proposed for the Central Maui area, illustrate the pace of development taking place near the Property . It recommended that the LUC review the proposed Waena Generating Station in light of these developments, to carefully measure cumulative impacts and comprehensive long term issues. (OP's Exhibit No. 1, p. 41.)

79. The OEQC provided the following list of documents on projects in the Central Maui area:

- Puunene Water System, FONSI (07/23/84
- Central Maui Sanitary Landfill, FEIS (03/01/86)
- Humane Society Animal Shelter, Pulehunui, FONSI (03/23/87)
- Maui Army National Guard Armory, EISPN (10/08/95
- Central Maui Sanitary Landfill Expansion, FEIS (05/23/96)
- Mokulele Highway Puunene Bypass, FONSI (07/23/97)

- Kuihelani Highway Widening, DEA (10/23/97)
- A.C. Partnership Construction Related Baseyard and Office Project DEA (11/08/97)
- Mokulele Highway Puunene Avenue Widening Project, NEPA (11/08/97)
- Mokulele Baseyard Storage Community Plan Amendment, DEA (11/23/97)

(OP's Exhibit No. 1, p. 41.)

80. According to the FEIS, planned projects near the proposed Waena Generating Station in Central Maui with the potential for development include the expansion of Kahului Airport, development of the Maui Economic Opportunity facility, and the County of Maui bus maintenance facilities located near the old Puunene Airport. The Department of Hawaiian Home Lands has indicated they are acquiring land near the old Puunene Airport for future use. (OP's Exhibit No. 1, pp. 4 and 5.)

81. The four-phased planned construction and operation of the proposed Waena Generating Station will be compatible with existing and planned expansion of existing uses in the area which include the Central Maui Sanitary landfill, and Ameron HC&D quarry operations. (TR. 4/23/98, p. 133, lns. 18 to 24, and OP's Exhibit No. 1, p. 57)

82. The County looked very closely at heavy urban uses for the Central Maui area, one of which would include energy plants. The County felt that it would be an appropriate site given the fact that it is surrounded by agriculture, even though the County would have to change the zoning. (TR. 4/24/98, p. 117, lns. 11 to 17.)

83. Further, Maui County has submitted a request to the Maui County Council to redesignate approximately 50 acres near the intersection of Waiko Road and Mokulele Highway to light industrial use, to be more compatible with existing land uses, and to allow expansion of the Mokulele Baseyard facility. (OP's Exhibit No. 1, p. 5)

NEED FOR THE PROPOSED DEVELOPMENT

84. The proposed Waena Generating Station is required as a facility to: Maintain an adequate system margin-of-reserve generating capacity; provide a system that meets the projected

electrical demand; increase system reliability; replace older generation facilities scheduled for retirement; and provide dependable electrical service to its customers. (Petitioner's FEIS p. 2-5, and TR. 02/26/98, p. 90, lns. 13 to 25, and p. 91 lns. 1 to 5.)

85. The need for additional generating capacity was identified by the Petitioner through the integrated resource planning (IRP) process. (Petitioner's FEIS p. 2-5 )

86. Integrated resource planning is a Public Utilities Commission process, adopted in 1992, that governs all of the energy utilities in the State of Hawaii. IRP is an on going process which results in a 20-year master plan for the near and long-term energy needs of all the utilities on all of the islands. (TR. 02/26/98, p.149, lns. 23 to 25, and p, 150 lns. 1 to 7.)

87. IRP brings together representatives from MECO, government agencies, public groups, and individuals concerned with the environment, culture, businesses, and communities to participate in the energy planning process. (Petitioner's Exhibit C-13, p. 1-1)

88. The Petitioner's goal in the IRP process, is to identify the resources or the mix of resources needed to meet near and long term consumer energy needs in an efficient and reliable manner at the lowest reasonable cost. (Petitioner's Exhibit C-3, p. 1-1)

89. IRP revolves around a three year cycle to allow for resubmissions of the comprehensive plan with annual reviews and updates such as status reviews every year. (TR. 02/26/98, p.150, lns. 8-11.)

90. The PUC found that the Petitioner's IRP was a very comprehensive process. (TR. 02/26/98, p. 150, lns. 18 to 20 )

91. The integrated resource planning(IRP) process evaluated the following issues:

- existing and forecasted demand for energy and capacity;
- existing and forecasted fuel prices;

- impacts of Demand-Side Management (DSM) and conservation and energy efficiency programs on the demand for energy;
- existing firm capacity;
- maintenance and retirement schedules of generating units; and
- existing Purchase Power Agreements (PPAs) from independent power producers (IPPs). (Petitioner's FEIS p. 2-5 )

92. From 1970 to 1980, Maui's population grew by 62.4 percent and increased by 45.4 percent during the period from 1980 to 1990. (Petitioner's FEIS p. 2-5 )

93. Peak power demand by the Petitioner's customers has increased an average of 5 percent per year between 1983 and 1996, from 95.4 MW to 174.8 MW. Peak power demand on the island of Maui is forecasted to increase steadily over the next 20 years, at approximately 2.6 percent per year. The Petitioner has concluded that there will be a shortfall by the year 2004, and that additional generation will be required through the year 2016. (Petitioner's FEIS p. 2-5 to 2-6.)

94. The Petitioner's total firm capacity for the island of Maui, after completion of its second 58-MW expansion at Maalaea in the year 2001 (254 MW from MECO owned plants),will enable the Petitioner to meet demand forcasted through 2003. (OP's Exhibit No. 1, p. 12.)

95. After completion of the additional units at Maalaea, the plant will have expanded to its full land capacity. The Kahului plant is also built to land capacity. (Petitioner's FEIS p. 2-6 )

96. Replacing or repowering existing units at the Kahului and Maalaea Power Plant is not feasible due to the high costs involved. (Petitioner's FEIS p. 2-6, and (TR. 02/26/98, p. 91, lns. 6 to 9.)

97. The Petitioner considers unit retirement dates as the unit approaches the end of a normal life expectancy. For different technologies, there are different retirement life expectancies. For steam turbines, the life expectancy is 50 years; combustion turbines, 35 years; and depending upon the size of the unit and operating speed, the life expectancy for diesel engines is 25 to 30 years. (TR. 04/8/98, p. 19, lns. 7 to 11.)

98. The Petitioner considers three major factors when making unit retirement determinations: Availability of parts for the units, service reliability; and operating and maintenance costs. (TR. 04/8/98, p. 19, lns. 19 to 21.)

99. The Petitioner's resource plan identifies the retirement of 17 older generating units producing a gross 112.64 MW of power, over the next 20 years. (Petitioner's FEIS p. 2-6 to 2-7.)

100. Power produced by IPP is classified as either firm capacity, or as-available capacity. The Petitioner's resource planning can only evaluate producers of firm capacity. (Petitioner's FEIS p. 2-6.)

101. The power provided by HC&S is classified firm capacity. The firm power contract with HC&S expires at the end of 1999 and its renewal is uncertain. Beginning in 2000, the Petitioner has removed the 16 MW provided by HC&S from MECO's resource plan since the Petitioner needs to pursue parallel planning in event the PPA with HC&S is not renewed. (Petitioner's FEIS, p. 2-8)

102. It is not appropriate for the Petitioner to use IPPs as parallel path planning for MECO's units. IPPs do not have a legal obligation to serve the public and could relinquish their commitments. Also, even if the Petitioner continued the PPA with HC&S, the power provided through the agreement would not have been enough to offset the identified need for additional generation on Maui. (Petitioner's FEIS pp. 2-6 and 2-8)

103. The power provided by Pioneer Mill is classified as-available capacity. The Petitioner cannot rely on this source of power since the power is available only when the mill is producing electricity in excess of its own needs. Therefore, as-available capacity power is not included in the Petitioner's resource plan. (Petitioner's FEIS pp. 2-6, and 2-8)

104. The Petitioner concluded that lack of specific commitment, power purchase agreements, or generation facility data do not allow for the inclusion of any IPP resource proposals into the resource plan at this time. Therefore, the Petitioner has determined that IPPs cannot be

looked upon to meet or replace the need for additional power beginning in the year 2004. (Petitioner's FEIS, p. 2-9)

105. MECO is an isolated utility, therefore planning criteria requires higher levels of reliability than would mainland utilities that have interconnected grids and can rely on their neighbors to support those contingencies. (TR. 2/27/98. p. 167, lns. 4 - 7, and p. 211 lns. 16 -21.)

106. The proposed Waena Generating Station is designed to meet the increasing demand for electricity on the Island of Maui and to improve system reliability. Based upon the Petitioner's examination of MECO existing generation resources, resource planning, and planned addition of generation capacity over the next 20-30 years, the Waena Generation Station can accommodate changing public demands and allow for the flexibility of future designs and technologies.

107. Resources Planning has identified the need for additional units to the system beginning in the year 2004. (Petitioner's FEIS p. 3-15.)

108. Development of Demand-Side Management (DSM) energy programs will not offset the need for unit additions beginning in the year 2004. (TR. 2/27/98, p. 183, lns. 15- 19, and Petitioner's FEIS p. 3-15.)

109. Lack of specific commitment, power purchase agreements, or generation facility data do not allow for the inclusion of any IPPs cannot be looked upon to meet or replace the need for additional units beginning in the year 2004. (Petitioner's FEIS p. 3-15.)

110. The scheduled retirement of older generation equipment can be deferred for a short time in order to accommodate permitting delays, however, this action does not ensure continued operating reliability nor offset the identified need for additional units beginning in the year 2004. (Petitioner's FEIS p. 3-15.)

111. The permitting process is very lengthy. For planning purposes, the Petitioner plans for getting a permit within two or three years after the application is submitted. Sometimes it takes longer. (TR. 4/8/98, p. 67, lns. 13 to 17.)

Petitioner's Existing Service Area

112. The Petitioner provides nearly all the electrical service to the residents and businesses of the County of Maui. The islands of Maui, Molokai, and Lanai, each have their own generation and transmission systems. (OP's Exhibit No. 1, p. 5.)

113. On the Island of Maui, the Petitioner serves over 91,000 residents with approximately 43,000 metered accounts. Maui County is the fastest growing County in the State. The Petitioner is responding to this growth by planning for additional generation and transmission capacity. (OP's Exhibit No. 1, p. 5.)

114. The Petitioner determined that even with demand-side-management programs, peak power demand on the Island of Maui would increase, and by 2004 there would be a shortfall in the system's reserve margin. (OP's Exhibit No. 1, p. 5.)

Petitioner's Existing Generating Resources

115. The Petitioner operates and maintains a diverse variety of generating units of various capacities from 2.2 Megawatts to 28 Megawatts on Maui. These include steam turbine generators, diesel engine generators, and combustion turbine generators. (TR. 4/8/98, p. 17, lns. 16 to 20.)

116. The Petitioner presently owns and operates 22 generating units on Maui: 4 at Kahului and 18 at Maalaea. The Petitioner is currently adding two additional units at its Maalaea facility. After retirement of the existing unit and replacement with the completion of its second 58-MW expansion at Maalaea in 2001, the Petitioner's total firm capacity for the island of Maui will be 254 MW from MECO-owned plants. (OP's Exhibit No. 1, p. 5.)

117. The Petitioner has two Purchase Power Agreements (PPAs) with Independent Power Producers (IPPs): the Hawaiian Commercial and Sugar Company (HC&S) and the Pioneer Mill Company. The PPA with HC&S is classified as firm capacity and commits the company to provide 16 Megawatts (MW) of firm capacity power through the end of 1999. The second PPA with Pioneer Mill is classified as-available capacity. Through a Power Exchange and Stand-by Power Agreement with the Petitioner, Pioneer Mill Company will provide 8 MW of power to the Petitioner only when the mill is producing electricity in excess of its own needs. (OP's Exhibit No. 1, pp. 5 and 6.)

118. PPAs cannot always be counted on to meet customer demands, or be included in the Petitioner's firm capacity. The power provided by HC&S is classified as firm capacity and is therefore included in the Petitioner's existing resource plan. However, in the event the PPA with HC&S is not renewed, the Petitioner has removed the 16 MW provided by HC&S from its resource plan beginning in 2000. Faced with a continual drop in bagasse supply, due to reductions in sugar cane production, Pioneer Mill Company has had problems meeting its agreement and cannot be counted on providing firm capacity power to the Petitioner. As a contingency against IPP project delays, the Petitioner pursues parallel planning for the installation of its own capacity. (OP's Exhibit No. 1, p. 6.)

Transmission, and Distribution Resources

119. As power is generated on Maui, transformers boost the voltage to either 23 kilovolts (kV) or 69 kV. The power is then transmitted through the 23-kV and 69-kV transmissions grids. When the power reaches the substations, the voltage is reduced from 69 kV and 23 kV to MECO's 12-kV and 4-kV. The power proceeds from the substations along streets and roads through overhead, or where necessary, underground distribution feeders, to small step-down distribution transformers. These transformers are located on poles or pads near the facilities they serve and are sized for the particular load and voltage required by the customer. The 69-kV

system consists of approximately 96 miles of overhead lines, and the 23-kV system consists of approximately 137 circuit miles of overhead lines. (OP's Exhibit No. 1, p. 6)

Alternative Actions and Energy Resources

120. Under the No Action Alternative, the proposed generating station would not be built and the additional generating needs identified in the Petitioner's Resources Plan would not be met. (OP's Exhibit No. 1, p. 14.)

121. The Petitioner examined and evaluated the feasibility of employing biomass conversion, geothermal, hydroelectric, solar, wind, ocean thermal energy, and coal as alternatives to diesel fuel, and determined that these technologies had not reached a stage in either their development, or commercial availability, to provide cost-efficient firm generating capacity for the Island of Maui. (TR. 4/28/98, p. 133, lns. 24 and 25, p. 134, lns. 1 to 7 and OP's Exhibit No. 1, p. 14.)

122. Biomass Energy Conversion. A National Renewable Energy Laboratory study that included participants from the Pacific International Center for High Technology Research (PICHTR), the Petitioner, County of Maui, and the State of Hawaii, determined that biomass facilities would be too costly to pursue at this time. (OP's Exhibit No. 1, p. 14.)

123. There is no dedicated biomass to electricity generating plant in the United States. (TR. 2/27/98, p214, lns. 10 to 11.)

124. Biomass generation facility of the firm capacity power required to produce 232-MW of electricity, would cost over $870 million and would require over 60,000 acres of crop land for the production of fuel. By comparison, the proposed 232-MW Waena Generating facility will be constructed on 65.7 acres, and is estimated by the Petitioner to cost $400 million. (OP's Exhibit No. 1, p. 14.)

125. Geothermal Energy. Although the State has made progress in alternative energy technologies, only geothermal currently has the potential to provide firm, reliable electricity. (OP's Exhibit No. 1, p. 15.)

126. The Geothermal resource on Maui is unknown. (TR. 2/27/98, p. 214, lns. 1-2.)

127. The southwest rift subzone of Haleakala has been designated as the site for potential geothermal development. (OP's Exhibit No. 1, p. 15.)

128. At this time, geothermal energy is only being produced on the Island of Hawaii. (Petitioner's FEIS, p. 3-22)

129. Maui County has not developed rules and regulations to govern development and commercial use of this resource. (TR. 2/27/98, p. 214, lns. 2-7, TR. 4/23/98, p.7 7, ln. 25, p. 78, lns. 6 to 8, and OP's Exhibit No. 1, p. 15.)

130. The development of the geothermal resource on the Island of Hawaii has raised religious objections and concerns about noise and sulfuric acid emissions, adding to the impracticality and feasibility of considering geothermal energy as an alternative energy resource. (OP's Exhibit No. 1, p. 15.)

131. Hydroelectric Energy. Stream flow in many of Hawaii's streams is variable, therefore any energy produced in this manner would not be considered part of the Petitioner's firm power resources. Proposed development projects have looked at the possibilities for using hydroelectric power. For all the streams examined as potential sites for the development of hydroelectric power, the total power production was estimated at less than 10 MW. Further stream water use would require the construction of diversion dams. (OP's Exhibit No. 1, p. 15.)

132. Solar Energy. There are no large-scale, commercial, solar-powered electric generating facilities in the State of Hawaii. The State of Hawaii conducted an assessment of solar electric generating systems for Hawaii (DBEDT, 1992). The study found that Hawaii's amount of

direct sunlight was lower than expected, and the costs were too high to make the use of solar power cost effective. The cost of a photovoltaic system is estimated at $8 to $10 million per MW of power. Further, the installation of a photovoltaic system would require 1,400 to 1,600 acres of land to produce 232 MW of power, and the high dust and salt content of the air within the Central Maui Region make development of a photovoltaic system impractical. (OP's Exhibit No. 1, p. 15.)

133. Wind Energy. Over 1,600 acres is estimated as required to contain enough wind turbines to produce 232 MW of power. (Petitioner's FEIS, p. 3-24, and TR. 4/24/98, p.141, lns. 9 to 11.)

134. Several utility-connected wind turbine machines have been installed on Maui in the past. In 1984, the Petitioner installed a 340 kW Windane machine at its Maalaea facility. After a series of technical problems, the unit was suspended. (TR. 2/28/98/ p. 208, lns. 16-20, Petitioner's FEIS, p. 3-24, and OP's Exhibit No. 1 , p. 15)

135. The Hawaiian Islands are very well suited to the development of wind energy technologies. Maui is dominated by trade winds. (Petitioner's FEIS, p. 3-24.)

136. The Development of wind energy conversion systems depend on being able to locate them in areas having annual mean wind speeds of 13 to 14 miles per hour. A minimum wind speed of 7 mph is necessary to start the turbines. (Petitioner's FEIS, p. 3-24.)

137. The Petitioner is currently negotiating with another wind developer for a large MW-scale wind farm installation on Maui. (Petitioner's FEIS, p. 3-24)

138. Factors which include high costs, dependence on adequate wind speeds, large land requirements, system limitations, and the impacts from visual intrusions, noise, bird kills, interference to local telephone communications, and television reception, make development of wind energy conversion systems impractical. (OP's Exhibit No. 1, p. 15, and Petitioner's FEIS, p. 3-24.)

139. Ocean Thermal Energy Conversion (OTEC). The Natural Energy Laboratory of Hawaii Authority (NELHA) off Keahole Point on the Island of Hawaii, operates open-cycle and closed-cycle OTEC demonstration projects. The open-cycle plant produces approximately 210 kW of gross power. The closed-cycle plant produces 50 kW, but has had problems with ammonia leakage in the flat-plate aluminum heat exchangers. The capital costs of constructing a 50-MW land based OTEC facility have been estimated at over $300 million. Economic costs and technical constraints on the construction of large scale OTEC facilities, including needed improvements in the design and construction of larger seawater pipes and turbines, do not make OTEC a feasible alternative. (OP's Exhibit No. 1, p. 16, and Petitioner's FEIS, p. 3-22.)

140. Coal. The use of coal-based technologies including pulverized coal, atmospheric fluidized bed combustion, and coal gasification, received extensive evaluation during the Petitioner's preparation and development of its IRP. Pressurized fluid bed combustion and coal gasification were eliminated because these technologies are still being developed and are not available for commercial installation. The operation of a 232-MW pulverized coal powered plant would require a daily delivery of over 2,500 tons of coal and 70 tons of lime. A facility using atmospheric fluidized bed combustion technology would require slightly more coal--approximately 2,700 tons per day. In order to accommodate delivery by barges, the Petitioner would need to create dock-site facilities that would include a truck loadout station, plant site coal handling facilities to include a truck unloading station and storage areas to accommodate a 15-day supply, and an offsite area to store an additional 20-day supply. The cost was estimated at over $950 million. These technologies were not considered economically feasible alternatives to power the generating facility. The Petitioner states that because of the phased installation of the four 58-MW DTCC units and the potential of these units to utilize fuel made from coal gasification, the Petitioner could change to a coal gasification technology should it become more economically and technically feasible. (OP's Exhibit No. 1, p. 16.)

141. Fuel Cells. This technology produces energy by creating a reaction within an electrolyte substance which uses a combination of heat and a chemical agent. Demonstration projects using phosphoric acid as the electrolyte and natural gas as the fuel, are operating in Japan. A phosphoric acid fuel plant constructed to produce 11-MW of power would require approximately one acre of land and have a capital cost of between $28 and $34 million. A 200-kW phosphoric acid fuel cell plant would require approximately 1,200 square feet with a capital cost of approximately $1 million. However, this technology is still in the research stage, and applications within the U.S. are still limited. (OP's Exhibit No. 1, p. 17, and Petitioner's FEIS, p. 3-23.)

Alternative Fuels

142. The combustion turbines will be fueled by No. 2 diesel fuel. The Petitioner, through its IRP process, also examined the feasibility of using alternative fuels other than diesel and coal for use with their conventional generation resources. (OP's Exhibit No. 1, p. 17.)

143. Landfill Gas and Digester Gas. Landfills containing municipal solid waste can be managed to generate landfill gas as the waste decomposes. Landfill gas has been used in small operations on Oahu by Ameron HC&D, Inc., to help power quarry activities at the Kapaa Landfill. Although the Property is close to the Central Maui Landfill, it does not have the potential to be used as a source of landfill or digester gas. This is because Maui's landfills lack sufficient size to produce a reliable source of digester gas for use within the Petitioner's generation system. The tapping and potential use of landfill gas from the Central Maui Landfill is more suited for smaller operations such as the adjacent Ameron HC&D Quarry. (OP's Exhibit No. 1, p. 17, and Petitioner's FEIS, p. 3-27.)

144. Propane. The emissions from burning propane are less than emissions when firing diesel fuel. Propane is produced when crude oil is refined and then must be processed more to remove hydrogen sulfide, methyl and ethyl mercaptans, and elemental sulfur. Propane is also collected in natural gas processing plants. The cost of propane is nearly three times higher than the

cost of conventional fuel, and the high cost does not make it a feasible alternative to diesel fuel. (OP's Exhibit No. 1, pp. 17-18, and Petitioner's FEIS, p. 3-28.)

145. Ethanol. Ethanol, also referred to as ethyl alcohol or grain alcohol, is made from the fermentation of food crops, including sugar cane, beets, corn, wheat, and potatoes. It is generally more expensive than conventional fuels, twice the cost of gasoline, and large quantities are unavailable in Hawaii. For these reasons, the Petitioner did not consider ethanol a feasible alternative fuel for utility power production. (OP's Exhibit No. 1, p. 18, and Petitioner's FEIS, p. 3-28.)

146. Methanol. Methanol, also referred to as methyl alcohol or wood alcohol, is made from a variety of carbon, including coal and biomass. Coal and biomass are elements which could be used to create methanol on Maui. However, because the burn efficiency is only half that of conventional fuels, the Petitioner would require larger amounts of methanol and more storage space. It is also highly corrosive. (OP's Exhibit No. 1, p. 18, and Petitioner's FEIS, p. 3-28.)

147. Orimulsion. Orimulsion is an asphalt emulsion produced by Bituminous Orinco SA of Venezuela. When burned, orimulsion produces excessive amounts of sulfur dioxide and particulate matter emissions due to a high sulfur and ash content. The excess sulfur can be separated out when orimulsion is used as a feedstock for coal gasification, producing better thermal efficiencies and high yields than normal gasification of coal/water slurries. (OP's Exhibit No. 1, p. 18, and Petitioner's FEIS, pp. 3-28 to 3-39.)

148. Coal Slurries. Coal Slurries are produced by mixing ground coal with water or oil and an additive to keep the coal in suspension. This process reduces the costs and enables slurries to be handled as easily as a liquid fuel. However, the use of this fuel type in power plants has been limited because existing plants would have to be modified significantly. Coal slurries are less efficient thermally than conventional fuels and capacity reductions of between 20 to 60 percent result from the conversion of existing units to burn coal slurry. To produce the equivalent amount of power as in conventional fuel fired generators, units and boilers would need to be sized

differently. This offsets the small differential in price between it and conventional fuels. (OP's Exhibit No. 1, p. 18, and Petitioner's FEIS, p. 3-29.)

149. Municipal Solid Waste. Waste-to-energy plants are designed primarily for waste reduction, and typically must compete for materials with other government-sponsored programs such as recycling and composting. A continuous supply at the required levels to meet existing and increased demand would be uncertain. The Petitioner's resource planning can only evaluate producers of firm capacity power, therefore such plants cannot be dispatched to meet load demand. (OP's Exhibit No. 1, p. 19, and Petitioner's FEIS, p. 3-29 to 3-30.)

150. Naphtha. Naphtha is a light fraction fuel produced through the refinement of crude oil. Data from the Department of Business Economic Development and Tourism for the period 1991 to 1995 indicates a total average production of 3,000 to 6,000 barrels per day (bpd) of naphtha. The proposed Waena Generating Station would require 10,800 bpd of naphtha. Current naphtha production in Hawaii is insufficient to power the proposed generating station and additional supplies would have to be shipped from refineries outside of Hawaii. Further, storage requirements for naphtha are greater than those for diesel and existing barges used for the Petitioner's interisland transport are unable to accommodate naphtha. (OP's Exhibit No. 1, p. 19, and Petitioner's FEIS, p. 3-30.)

151. The cost of diesel fuel has remained fairly constant over the past few years at $0.55 per gallon. Because of naphtha's high demand in the chemical industry, the price of naphtha has ranged from a low of $125 per ton to a high of $365 per ton, or $0.34 to $1.00 per gallon. (OP's Exhibit No. 1, p. 19, and Petitioner's FEIS, p. 3-30.)

152. Naphtha has a low capacity to lubricate, which can cause additional wear and tear on the generating equipment. Corrective additives are not an economically viable solution when equipment is operated under continuous baseload conditions. (OP's Exhibit No. 1, p. 19, and Petitioner's FEIS, p. 3-31 .)

153. Naphtha is a low flash point fuel that will vaporize and ignite at low air pressures and has a tendency to be highly volatile. Provisions to prevent the buildup of vapors in valves and fuel nozzles would require additional operational requirements. Because Naphtha is very sensitive to temperature, its use in a generating plant would require additional equipment to ensure that fuel and piping temperatures are maintained at 68°F and 140°F. The fuel may thicken below 68°F and flash above 140°F. (OP's Exhibit No. 1, p. 19, and Petitioner's FEIS, p. 3-31.)

154. The National Fire Protection Agency (NFPA) has given naphtha a more severe hazard classification for health and flammability than diesel fuel. (OP's Exhibit No. 1, p. 19, and Petitioner's FEIS, p. 3-31.)

155. Naphtha vapors are heavier than air and require a special ventilation system to remove them to a safe area for disposal. The system must ensure against leakage from hazardous areas into non-hazardous areas. Some applications may require the use of hydrocarbon detectors in the hazardous and non-hazardous areas and the vent lines. (OP's Exhibit No. 1, p. 19, and Petitioner's FEIS, pp. 3-31 to 3-32.)

156. The Petitioner has concluded that the lack of availability of naphtha to generate 232 MW of power production on Maui over the life of the project, the safety and design concerns, and the lack of existing storage and handling facilities at the harbor to accommodate the fuel do not make it a technically or economically feasible alternative to diesel fuel at this time. (OP's Exhibit No. 1, p. 19, and Petitioner's FEIS, p. 3-33.)

157. A-21. A-21, a fuel made primarily of naphtha and water, has not been demonstrated in a combustion turbine. The same considerations revolving around availability, costs, safety and design, storage and handling, described for naphtha, also apply to A-21, since it is basically watered down naphtha. Also, because it is naphtha in a diluted form, larger quantities would be needed in order to obtain the same heat input to the combustion turbines. (OP's Exhibit No. 1, p. 20, and Petitioner's FEIS, p. 3-33.)

Site Selection

158. To determine the optimal location for the proposed Waena Generating Station, several siting studies and site assessments were conducted between 1989 and 1995. The first island-wide study, Site Selection Study, Maui Electric Company, Ltd.(Stone &, 1989), assessed ten candidate sites and identified three viable sites out of the ten, for future generation expansion. These three were the Kahului Power Plant, Puunene Sugar Mill, and the Maalaea Power Plant. (OP's Exhibit No. 1, p. 20.)

159. The second study, Candidate Sites Report and Preferred Alternative Site/Technology Report (Black & Veatch, 1991), screened the island of Maui for areas suitable for power plant development, and identified the Central Maui isthmus as the most appropriate location for a new, stand-alone electrical generation facility. The assessment was based on compatible land uses, topographic slope, suitable land area, water availability, air shed availability, fuels, logistics, transmission line integration, land permeability, community acceptance, socioeconomic, and archaeology considerations. (OP's Exhibit No. 1, p. 20.)

160. The Ameron Quarry, Puunene Airport, and Maalaea sites were identified as feasible locations for a power plant. After evaluating these sites with several technologies (atmospheric fluidized bed combustion (coal), coal gasification, and combined-cycle combustion turbines), and an evaluation of 20 technical and environmental criteria, the report concluded that a combined-cycle combustion turbine arrangement at the quarry site would be most suitable for the future power generation station with the Puunene Airport site as an alternate. (OP's Exhibit No. 1, pp. 20 and 21.)

161. When the Petitioner further evaluated the quarry and Puunene Airport sites, the owner for both sites, Alexander & Baldwin-Hawaii, raised concerns which resulted in the identification of an alternate site approximately two miles southeast of Puunene Airport. This site was previously identified in the Candidate Sites Report and Preferred Alternative Site/Technology

Report, completed in 1991. An Environmental Assessment (Belt Collins, 1992) concluded that the site, identified as site C-3, was a viable candidate for further consideration as a potential site for a Maui baseload generating station. (OP's Exhibit No. 1, p 21.)

162. Further site evaluations found site C-3 to be an acceptable location based on evaluations of several issues including those related to hazardous materials and groundwater issues. An air quality analyses study (Trinity Consultants, 1993) found the Central Maui area an acceptable location for a large baseload generating station. The air quality study also identified areas within the isthmus by the level of difficulty ascertained in obtaining air quality permits. Areas north of the quarry were discovered to have the highest level of difficulty. (OP's Exhibit No. 1, p. 21, and Petitioner's FEIS, p.3-34.)

163. The Central Maui Siting Study (Belt Collins, 1994) identified ten 50-acre candidate sites for evaluation. The identification of these sites was based on non-air quality considerations. (TR. 4/28/98. p. 45, lns. 24 and 25.)

164. The Belt Collins study focused on environmental and technical factors such as air quality impacts, site soils, agricultural potential, visibility, and fuel transportation requirements. Six of the ten sites were selected as "finalist" sites and analyzed further. The remaining four were rejected because they were either inferior, or so similar to one of the six that individual analyses would not have been meaningful. (OP's Exhibit No. 1, p. 21.)

165. Three sites identified on Figure 3-5 in the FEIS as Site A-1, A-2, and D-1, ranked highest among the six "finalist sites and were recommended for further analyses. After further evaluations and discussions with the Department of Health, the Petitioner identified the region surrounding Sites A-1, A-2, and D-1 as primary areas of interest. The Central Maui Siting Study Air Quality Analysis by Trinity Consultants identified Site D-1 as having the best air quality. ((TR. 4/28/98. p. 46, lns. 1 to 4, and Petitioner's FEIS, p.3-36, and OP's Exhibit No. 1, p. 21.)

166. The Central Maui Siting Study (Dames and Moore, 1995) evaluated Sites A-1, A-2, and D-1 against several environmental factors, including: air quality; topography; soils; ground and surface water; aesthetics; noise; traffic; cultural resources; hazardous materials; botany; engineering considerations; and natural hazards. As a result of the analyses, baseline studies conducted on each site, including the air quality screening analysis (Air Quality Screening Analysis for the Central Maui Generation Project) conducted by Jim Clary and Associates, and reports that outlined anticipated impacts of a 232-MW baseload generating station located on each of the three sites, Site A-2 was identified as the most preferred of the three candidate sites. The air quality screening analysis determined site A-2 to be the best site, and the only site that would not require reductions in the existing emission inventory in order to attain compliance with the air quality standards. (OP's Exhibit No. 1, p. 22, and Petitioner's FEIS, p.3-37.)

167. The MECO Generation Study, Central Maui (Stone and Webster, 1995) conducted a final site evaluation of Sites A-1, A-2, and D-1. The evaluation was based upon more technical issues including but not limited to: constructability; modeled impacts to air quality; proximity to wells, need for infrastructure improvements to adjacent roadways; overall project schedule; and costs. Site A-1 was eliminated from further consideration because Sites A-1 and A-2 were in the same air quality area and Site A-2 ranked higher. Site D-1 was retained as a final candidate, because although it was found to be the least environmentally desirable site in the Pulehu area, it had been found to have the best air quality in previous analyses (Trinity Consultants, 1993). Site C-3 was included as one of the final sites since it was not being used for sugar cane, and the owner said it was available. (OP's Exhibit No. 1, p. 22, and Petitioner's FEIS, pp.3-37 and 3-39.)

168. Air quality constituted one of the more important environmental screening factors in the site selection process. Air quality modeling data, predicted air emissions, national ambient air quality standards, and the Federal Prevention of Significant Deterioration (PSD) increment limits, were utilized to screen the candidate sites. (TR. 02/27/98, p.125, lns. 6 to 7.)

169. For air quality and health base standards, the recommendations are based on protecting the most sensitive individuals. The standards are based on protecting people with bronchial asthma. TR. 04/08/98, p. 58, lns. 8 to 12.)

170. The site for the proposed Waena generating station is central for the Petitioner's transmission grid and populated areas. (TR. 04/08/98, p.14, lns. 15, and 16.)

171. As the result of this site analysis, Site A-2 was considered the preferred site for the proposed Waena Generating Station. (TR. 02/27/98, p.126, lns. 24 to 25.)

172. Of the three sites under consideration, Site A-2 had the least impact on: air quality; biological resources; area traffic and transportation; and infrastructure costs. (OP's Exhibit No. 1, p. 22)

173. Other factors were also considered by the Petitioner in the site selection process for the proposed generation facility, including the compatibility of the proposed use of the site with the quarry, landfill, and the surrounding agricultural uses; its distance from more sensitive urban uses; and its centralized location within the Petitioner's existing generation and transmission systems. (TR. 4/8/98, p. 157, lns. 8 to 18, and OP's Exhibit No. 1, p. 22 to 23)

ECONOMIC IMPACTS

174. Upon full buildout of the plant there will be approximately 20 shift personnel. In addition there will be 26 non-operating personnel. (TR. 4/8/98, p. 30, lns. 10 to 12)

175. At full buildout, the operation of four DTCC units (eight combustion turbines) will create approximately 46 new jobs and employ 46 new employees (TR. 4/8/98, p. 30, ln. 13, and OP. Exhibit No. 1, pp. 49 and p. 56)

176. The Petitioner plans to move the transmission and distribution facilities to Waena, which will include approximately 195 employees working on a 7 to 3:30 shift. So the grand total of employees at full build out will be about 241 people. (TR. 4/8/98, p. 30, lns. 14 to 18.)

177. The proposed facility will require between 80 to 100 construction workers during the initial installation. (OP. Exhibit No. 1, p. 56)

178. The electricity provided by the proposed generating facility will support continued economic expansion for the island and provide the necessary energy to support affordable housing programs as they are developed. (OP. Exhibit No. 1, p. 56)

179. Although the proposed Waena Generating Station will remove 65.7 acres of agricultural land from active production, the power generated from this facility will support further expansion and diversification of agricultural activities on Maui. (OP. Exhibit No. 1, p. 56)

180. The proposed Waena Generating Station is designed to meet the increasing demand for electricity on the Island of Maui and to improve system reliability. Due to the incremental nature of its construction, the Waena Generation Station can accommodate changing public demands and allow for the flexibility of future designs and technologies. A 58-MW, dual-train combined-cycle unit is economical in terms of both initial and long-term costs. Sec. 226-14(a) and (b). (OP's Exhibit No. 1, p. 23)

181. Demand-Side Management (DSM) programs, which are a component of the Integrated Resource Plan (IRP), were designed to influence customer consumption of electricity in a manner that will produce changes in the utility's demand. (OP's Exhibit No. 1, p. 24.)

182. Demand-Side management is energy conservation to which the Petitioner gives strong preference to energy conservation as a first resource option to meet energy needs of its customers. (TR. 02/27/98, p. 153, lns. 20-25 and p. 154, lns. 1-3)

183. The Petitioner formed four DSM resource programs based upon the common end-uses and market segments that they address. These programs include the: Commercial and Industrial Energy Efficiency Program; Commercial and Industrial Customized Rebate Program; Commercial and Industrial New Construction Program; Residential Efficient Water Heating

Program. Potential programs include conservation, energy efficiency, load management, and fuel substitution. Sec. 226-18 (c) (6) (OP's Exhibit No. 1, p. 24.)

184. The Petitioner provided a small grant to the University of Hawaii to look into building an integrated photovoltaic system proposed for Ford Island. (TR. 02/27/98, p.205, lns. 5-8)

185. The Petitioner continues its program of installing small photovoltaic systems on public schools through their Sun Power for Schools project. The Petitioner has one system installed at Baldwin High School, and is working with the Department of Education to develop curriculum around the program. Sec. 226-18 (c) (7) (TR. 02/27/98, p.205, lns. 12 to 20.

SOCIAL IMPACTS

186. The proposed Waena Generating Station is planned to provide the necessary energy to meet and allow the expansion energy needs of the Island of Maui's residents and economy. (Petitioner FEIS, p.4-69)

187. The Petitioner provided a small grant to the University of Hawaii to look into building an integrated photovoltaic system at Ford Island. TR. 02/27/98, p.205, lns. 5-8)

188. The Petitioner continues its program of installing small photovoltaic systems on public schools through their Sun Power for Schools project. The Petitioner has one system installed at Baldwin High School, and is working the Department of Education to develop curriculum around the program. Sec. 226-18 (c) (7) TR. 02/27/98, p.205, lns. 12 to 20.

IMPACTS UPON RESOURCES OF THE AREA

Agricultural Resources

189. Maui County has approximately 360,000 acres of land classified as farmland. Of this acreage, approximately 89,000 acres of land are considered cropland, if which 36,500 acres are cultivated by HC&S and 11,000 are cultivated by Maui Land and Pine Co., LTD. (ML&P). The Property represents approximately 0.02 percent of Maui's total farmland, 0.07 percent of

Maui's County's total cropland, and .18 percent of HC&S total acreage. (Petitioner's FEIS, p. 4-68 to 4-69)

191. The proposed reclassification from the Agricultural District to the Urban District will remove approximately 65.7 Acres of Prime Agricultural land from sugar cane cultivation. (Petitioner FEIS, p.4-69 and TR. 4/23/98, p. 133, lns. 12 to 14.)

192. As a result of removing irrigation recharge and additional pumping from the aquifer, the proposed Waena Generation Station project is anticipated to result in an approximately 0.6 mgd net loss to the underlying aquifer. (Petitioner's FEIS, p. 4-31)

193. HC&S is undergoing expansion plans and will offset the loss of 65.7 acres of sugar cane land by expanding their acreage by 280 acres near Kuihelani Highway and adding another 1,100 acres of land formerly cultivated by Wailuku Agribusiness. (Petitioner FEIS, p.4-69)

194. Gasoline, diesel engines and fires are the major urban and rural sources of ethylene. (OP's Exhibit No. 1, p. 45, and Petitioner's Exhibit C-37, p.1)

195. Ethylene is a natural plant growth regulator used in agriculture to induce flowering of pineapple and ripening of bananas. (OP's Exhibit No. 1, p. 46.)

196. High concentrations over extended periods of time can adversely impact plant growth. High concentrations of ethylene can cause general reduction in growth, stimulation of lateral growth, leaf chlorosis and abscission, bud and flower abscission, and fruit chlorosis and ripening. (OP's Exhibit No. 1, p. 46, and Petitioner's Exhibit C-37, p.1)

197. There are no national standards for ethylene. The threshold concentration for plant response to ethylene is continuous exposure to 0.01 microliters per liter (µl/l). (OP's Exhibit No. 1, p. 46.)

198. Little data are available on the combinatory effects of ethylene and other pollutants. (Petitioner's Exhibit C-37, p.1)

199. The Office of Hawaiian Affairs opposes the proposed reclassification and believes the proposed amendment will drastically change the land use pattern in the area and result in the irreversible loss of 67 acres of prime agricultural land. (OP's Exhibit No. 1, p. 33.)

Flora and Fauna

200. A biological survey, prepared by Botanical Consultants, surveyed the Property and the preferred and alternative transmission line corridors. No rare or endangered species, or species listed as candidate for such status, were found either on the Property, or within the preferred or alternative transmission line corridors. (OP's Exhibit No. 1, p. 45.)

201. A study of emissions on the Maui Vortex by Schroeder and Clary Associates, found that a persistent vortex would not result in significant concentrations of $SO_2$, $NSO_2$, $PM_{10}$, sulfuric acid mist ($H_2SO_4$) and ethylene. (OP's Exhibit No. 1, p. 46.)

202. The Paull study used models from the Schroeder and Clary study, and determined that with all four DTCC units operating, it would take 1,363 days of continuous vortex, with no loss of ethylene from the vortex, to reach a plant response threshold concentration of 0.01 µl/l. (OP's Exhibit No. 1, p. 46.)

203. The study concluded that higher concentrations of ethylene will be generated from normal farm operation involving diesel and gas engines. (OP's Exhibit No. 1, p. 46.)

204. Sulfuric acid ($SO_2$) is commonly produced as the result of fossil fuel burning. A major source of $SO_2$ in Hawaii is volcanism. Symptoms of adverse impacts of high concentrations of sulfuric acid on plants includes bleached brownish or yellowish spots or blotches with areas of dead tissue. (OP's Exhibit No. 1, p. 46.)

205. Plant sensitivity to $SO_2$ varies. Some plant species (beans) are very sensitive, while others (celery, corn, potatoes) are very tolerant. (OP's Exhibit No. 1, p. 46)

206. Regarding the effects of sulfur dioxide on plants, the ambient air quality standards are protective of plants and animals. (Petitioner's Exhibit No. c-37 P. 3.)

207. The level anticipated from the proposed generating station is less than the EPA significance level of 5 micrograms per meter cubed ($\mu g/m^3$). (OP's Exhibit No. 1, p. 46.)

208. Haleakala National Park, approximately 12 miles southeast, is the closest area to the proposed Waena Generating Station having a Class I designation. (OP's Exhibit No. 1, p. 39.)

209. At the request of the National Park Service, measurements were calculated for the amount of chemical concentrations which may be deposited on plants and in the soil thereby impacting sensitive plant species. The measurements, or deposition levels for $SO_2$ and Nitric Acid ($HNO_3$), were calculated based on the procedure contained in the Interagency Workgroup on Air Quality Modeling Phase I Report: Interim Recommendation for Modeling Long Range Transport and Impacts on Regional Visibility (EPA, 1993). However, the National Park Service does not have any data on what deposition levels would adversely affect Haleakala National Park. The National Park Service will need to assess the potential impact on plant species by conducting detailed analyses for specific plant species and soil conditions within the park. (OP's Exhibit No. 1, p. 39.)

210. Exposure to sulfuric acid mist ($H_2SO_4$) can cause damage with a threshold for growth reduction being 0.5 parts per million (ppm). Assuming 100% of the sulfur is converted into $H_2SO_4$, the Paull study demonstrated that the time required to reach an $H_2SO_4$ concentration of 0.01 ppm is 274 days, and that such infrequent and very low concentrations would never reach acute plant injury concentrations. Other sources of $H_2SO_4$ which include sea spray, plants, algae, and bacteria, may be expected to have a more significant impact. (OP's Exhibit No. 1, p. 39.)

211. A field survey for fauna was conducted in March 1997. Neither the Hawaiian hoary bat or the Hawaiian owl was observed during the survey. Hawaiian hoary bats are known to roost at higher elevations. Although the Hawaiian hoary bat was not observed during the survey periods, they have been recorded at elevations as low as 400 feet and within gulches, and it is likely that they utilize the air space above the Property. (OP's Exhibit No. 1, pp. 46 - 47.)

212. Three reservoirs in the area (designated by HC&S as 80, 84, and 52), in addition to being integral to sugarcane production also serve as wildlife habitats. Two Hawaiian stilts were observed during a site reconnaissance at reservoir 80 (Caplan, 1995; Ohashi, 1995). (Petitioner's Exhibit 6B, Appendix A, p. 3.)

213. The nearest HC&S reservoir is approximately 2,000 feet from the boundary of the Property. (Petitioner's FEIS, pp. 4-33 to 4-34.)

214. The proposed Waena Generating Plant is not expected to have a significant negative impact on flora or fauna communities because construction and operation of the plant will occur on lands presently under sugar cultivation. Further, according to the FEIS, the Property has almost no value as native bird habitat. None of the species observed on the Property are listed as threatened or endangered, or candidates for the threatened or endangered species list. (OP's Exhibit No. 1, p.47.)

Archaeological Resources

215. According to Petitioner's FEIS, the documentary research provided no evidence of prehistoric sites or utilization of the area. An archaeological inventory survey of the Property and the proposed and alternative transmission line routes was conducted by Scientific Consultant Services on March 13, 1997. No archaeological resources were identified in any of the proposed transmission line corridors or at the Property. (Petitioner's FEIS, p. 4-37, and OP's Exhibit No. 1, p.47.)

216. In a letter dated August 29, 1997, the Department of Land and Natural Resources, provided the following comments: "Aerial photos taken in 1972 show that the entire area for the proposed station was under sugar cane cultivation. Unlikely that significant sites are still present. The proposed project will have "no effect" on significant historic sites. Archaeological inventory will be prepared." (Petitioner's FEIS, p. 4-37 - 4-38, and OP's Exhibit No. 1, p.47.)

Groundwater Resources

217. The site for the proposed Waena Generating Station is located in the Paia Aquifer System, one of four aquifer systems within the Central Maui Hydrologic Sector of the Central Maui isthmus. Rainfall in Central Maui averages approximately 28 inches per year, over an area of approximately 200 square miles. Due to dry and windy conditions, only a small percentage of rain infiltrates deep enough to become groundwater recharge. The Property is located in a dry area with the median rainfall amounting to 17 inches a year. (OP's Exhibit No. 1, p.25)

218. Groundwater is very important for generating plants. (TR. 2/27/98, p. 125, lns. 11 and 12.)

219. The lands surrounding the Property are irrigated with surface waters collected from various streams on the windward slopes of East Maui by an elaborate irrigation ditch system operated by HC&S. Water from this system is distributed throughout the Paia Aquifer System by the Haiku, Lowrie, Kauhikoa, and Hamakua Ditches. The system extends 4 miles inland, 1 mile seaward, and more than 2 miles on either side of the project site. (OP's Exhibit No. 1, p.25)

220. The Paia Aquifer System covers an area of 61 square miles and has a sustainable yield of less than 8 million gallons per day (mgd). Significant amounts of water recharge around the Property results from excess sugar cane irrigation in the area. The sustainable yield of 8 mgd represents only natural recharge from rainfall, and does not include the large amounts of artificial recharge resulting from drip irrigation of the surrounding sugar cane fields. (OP's Exhibit No. 1, p.25)

221. Groundwater with chloride levels higher than 250 milligrams per liter (mg/l) is classified as nonpotable. The basal groundwater throughout the central isthmus generally contains chloride levels higher than 250 mg/l and is classified as nonpotable. (OP's Exhibit No. 1, p. 26.)

222. Certain areas, such as near the Property, contain significantly lower chloride levels because the irrigation ditch system contributes to a significant amount of artificial recharge in the area which dilutes the chloride and significantly lowers the chloride content of the groundwater. The ditch system distributes approximately 164 mgd of surface water, and contributes a significant but undetermined amount of fresh irrigation water recharge in the area. resulting in lower chloride levels. (OP's Exhibit No. 1, p. 26.)

223. Artificial recharge from excess irrigation is undependable and subject to contamination. Therefore, the artificially recharged groundwater is still considered non-potable. (OP's Exhibit No. 1, p. 26.)

224. The Department of Land and Natural Resources, Commission on Water Resource Management (CWRM) provided the following comments:

"The CWRM is currently in the process of assessing recharge from irrigation and other sources and assessing the effect on the net sustainable yield. Furthermore, while estimates of drawdown and water quality appear to be reasonable, these issues will be further addressed, and possibly validated via pump tests during the well construction and pump installation permitting phase." The CWRM further commented that a Well Construction Permit and a Pump Installation Permit would be required before ground water is developed as source of supply for the generating station. (OP's Exhibit No. 1, p. 26.)

225. Due to the Property's gently sloping topography, and the varying depths of the bedrock some grading and rock excavation will be necessary. The FEIS cites several methods by which rock excavation can be accomplished. These include using large bulldozers with rippers, hydraulic rock breakers, drilling and blasting. The use of an appropriate method will depend on

factors such as rock hardness, strength, degree of weathering and facturing, and facture orientation and spacing. (OP's Exhibit No. 1, p.27.)

226. Groundwater in the project area is developed from a dozen or more wells and shafts. Most of the water is used for sugar cane irrigation, with small amounts used for landscape irrigation and industrial purposes. (OP's Exhibit No. 1, p.27.)

227. The Property is surrounded by five large capacity wells within a 3-mile radius. These wells produce 80.6 mgd of nonpotable water for irrigation. Other wells within the 3-mile radius include 3 monitor wells in the Central Maui landfill. These wells provided data on groundwater quality expected on the Property (OP's Exhibit No. 1, p.27.)

228. The wells nearest the Property are used for monitoring purposes only and are located a half mile north in the existing Central Maui Landfill. The nearest producing well is HC&S' Puunene Pump 6 located 1.5 miles downslope of the Property and has a chloride content reported a between 335 to 490 mg/l. (OP's Exhibit No. 1, p.27.)

229. There are no existing municipal wells near the property, or elsewhere in the Central Hydrologic Sector. (OP's Exhibit No. 1, p.28.)

Recreational/Scenic/Visual/Cultural Resources

230. The Property is situated within an area of gently sloping terrain which extends to the slopes of Haleakala. There are few significant topographic barriers to limit views. The area surrounding the project site is in active sugar cane production. (OP's Exhibit No. 1, p.47.)

231. The proposed 232-MW Waena Generating Station will constitute a relatively large industrial complex. The structures housing the generating machinery, support equipment, and offices will be between 15 and 70 feet high and will cover approximately 25 acres. The four stacks will be 150 feet high and 24 feet in diameter. (OP's Exhibit No. 1, p.47.)

232. The Petitioner analyzed the visual impacts of the proposed project in terms of distance, screening (vegetation) and backdrop (mountains), and provided computer generated photographic simulations to access the impact of the proposed facility on surrounding scenic features. The Petitioner concluded that the facility would not have an adverse impact upon the area's visual resources because of the proposed facility's large distance from sensitive viewer locations. The generation station and exhaust stacks will represent only a co-dominant feature within the landscape up to 3 miles distance, and only a subordinate feature within the landscape beyond 3 miles. Large distances from viewing locations will make the apparent size of the facility small to the viewer and should not become a focus of attention. (OP's Exhibit No. 1, p.47.)

233. Haleakala National Park is classified as Class I under the Clean Air Act. To determine the impact of emissions from the four 58 MW units in the generating plant on the visibility in Haleakala National Park, the Petitioner used EPA VISCREEN recommended by the U.S. Department of the Interior, National Park Service. The level 1 analysis conducted for the proposed generating station identified potentially significant plume visual impacts. Using this procedure, if significant impacts are determined at level 1, then level 2 analysis is performed using actual meteorological conditions to determine the worst-case conditions possible. According to the visibility study, the VISCREEN model identifies the entire visibility study area as the "Class I area". (OP's Exhibit No. 1, pp. 47 and 48.)

234. The United States Department of the Interior, National Park Service, provided the following comments on potential visible plume impacts inside Haleakala National Park:

> "The Level 2 VISCREEN visibility analysis indicates that the Waena project will not impact the park with a coherent plume." (OP's Exhibit No. 1, p.48.)

235. Lighting used within the plant for nighttime security and operations will be visible to residents located upslope of the project site due to the absence of other urban uses surrounding it and the overall size of the proposed facility. The petitioner indicates that some night glow impacts

will be noticeable to Upcountry residents from reflective lighting and general multiple light sources at the facility. These impacts will lessen with the distance, and will diffuse into the ambient background within the 4 miles to the nearest Upcountry residents. (OP's Exhibit No. 1, p.48.)

236. Impacts from night lighting at the plant will be mitigated by properly shielding all outside lighting to direct light downward and pavement will be made as non-reflective as possible. The Petition will avoid the use of halogen or intense white lights. The project will not have a negative impact on the visual character of its immediate environs, and will not have an adverse impact to scenic views or vistas related to coastal areas within the Central Maui region. (OP's Exhibit No. 1, p. 48.)

237. Visual impacts will be mitigated through landscaping and choices of paint colors appropriate to the area. The color of the facility and its exhaust stacks will be blended with the tones of the background landscape to minimize the visible impact of the facility on the surrounding environs. A landscaping plan is being developed to assist in the overall visual mitigation. Landscaping will be installed during phase I to allow for full maturation of vegetation by the installation of the final phase. (OP's Exhibit No. 1, p.48.)

238. The landscape buffer will be outside of the security fence. The fence is needed for security and the landscaping will screen the industrial feeling the fence might have. (TR. 4/8/98. p.161, lns. 8 to 14.)

239. The Fence will be around 12 feet tall. Many of the trees the Petitioner is proposing for the screening will have a mature height of 40 feet. The mass (of trees) would be between 10 to 20 feet high. (TR. 4/8/98. p.161, lns. 16 to 25.)

240. Any kind of visual impact from the proposed generating plant will be obscured within a year to a year and a half. (TR. 4/8/98. p.162, lns. 8 to 11.)

ENVIRONMENTAL QUALITY

Noise

241. The unit commonly used for describing the magnitude of a sound is the decibel (dB). In order to approximate the response of the ear, a weighting scale is sometimes used because the human ear is less sensitive to sounds in the high and low frequency ranges. This is called A-weighting and is abbreviated as dBA. Whereas sound levels vary with time, several methods are used to quantify sound over a given time. One method uses the equivalent sound level (Leq) and the day-night sound level (Ldn). Leq describes the energy average of the sound pressure level for a stated period of time. Ldn describes a 24 average sound level with an additional 10 dBA added to night time sound levels to account for increased human sensitivity to night time noise. (OP's Exhibit No. 1, pp. 41 and 42.)

242. Two different noise level regulations are available for assessing noise impacts from the proposed Waena Generating Station. These are: DOH noise regulations under Title 11, Chapter 46 Community Noise Control; and those under the U.S. Department of Housing and Urban Development. (OP's Exhibit No. 1, p. 42.)

243. DOH noise regulations under Title 11, Chapter 46 Community Noise Control, indicate that noise limits cannot be exceeded for more than 2 minutes in any 20 minute time period. For properties within the Agricultural District, the noise limits are 70 dBA for both the daytime and nighttime periods. (OP's Exhibit No. 1, p. 42.)

244. HUD noise regulations, indicate that an exterior day-night noise level of 65 Ldn or less is considered normally acceptable for residential housing developments. There are no housing developments located in the vicinity of the Property, therefore the HUD regulations can only be used as a guideline. (OP's Exhibit No. 1, p. 42.)

245. Studies prepared by Dames and Moore, 1995, and Belt Collins, 1992, measured short-term daytime background ambient noise levels in the vicinity of the Property with average

values ranging from 54 to 60 dB, well below the 70 dBA DOH Property line noise limit for agricultural and industrial uses.(OP's Exhibit No. 1, p. 42.)

246. An acoustic study of existing and anticipated noise conditions at and adjacent to the Property was prepared by Y. Ebisu & Associates in May 1997. The hourly average [Leq(h)] and Day/Night sound Level (Ldn) noise descriptors were both used to describe the future noise levels in the environs of the proposed Waena Generating Station. (OP's Exhibit No. 1, p. 42 and 43.)

247. Ebisu & Associates used the hourly average [Leq(h)] and Day-Night Sound Level (Ldn) noise descriptors to describe existing and future noise levels on the Property, and to evaluate the risks of exceeding the 70 dBA DOH noise limit along the Property boundary lines of the proposed generating plant. (OP's Exhibit No. 1, p. 43.)

248. The study selected areas 50 feet from major roadways, areas removed from existing developments, and areas closest and normally downwind of the Property. at several locations to measure varying noise levels. The results showed that for areas 50 feet from a major roadway, average daily traffic noise level was estimated to be 68 Ldn, and considered to be typical for major roadways in the area, such as Hana Highway and Haleakala Highway. The results of traffic noise measurement for areas removed from existing developments and areas closest to the Property (Waiakoa), demonstrated that existing background ambient noise levels in the areas removed from the major roadways are very low, and ranged from 35 to 44 Leq. Existing background noise levels in the communities closest to the Property are believed to be very low and similar to those measured at the other locations, particularly if they are removed from major roadways. (OP's Exhibit No. 1, p. 43)

249. Anticipated future noise emission levels from the proposed Waena Generating Station were evaluated for the four phases of planned station expansion. According to the noise study prepared by Y. Ebisu & Associates, May 1997, the closest noise sensitive properties to the proposed generating station are day-care and social services facilities located in Puunene beyond 2

miles from the Property. Residences in the other closest communities of Kahului, Pukalani, Paia, Spreckelsville, and Waiakoa are located beyond 3 miles from the station. (OP's Exhibit No. 1, p. 43.)

250. Using a Linear-Weighting filter (instead of the A-weighting filter), the predicted noise levels from the proposed generating station at the communities of Puunene, Kahului, Pukalani, Paia, Spreckelsville, and Waiakoa ranged from 19.7 to 36.2 dBL for Phase I; 22.7 to 39.2 dBL for Phase II; 24.5 to 41.0 dBL for Phase III of the development; and 25.7 to 42.2 dBL for Phase IV of the development. Due to the large separation distances between the Property and the nearest communities, the predicted A-weighted Sound Levels (dBA) are approximately 28 dB units less than the dBL values measured in these communities and should not be audible at the levels computed with the Linear-Weighting filter. Even with the added 12 dB of reduced attenuation due to sound ducting (worst case scenario), predicted noise from the proposed generating station should not be audible. (OP's Exhibit No. 1, pp. 43 and 44.)

251. Measured background ambient noise levels at the surrounding communities also indicate that the predicted sound levels from the proposed Waena Generating Station probably will be inaudible during even the night time and early morning hours. (OP's Exhibit No. 1, p. 44.)

252. The noise levels generated by the generating station at full build out would exceed the DOH 45 dBA night time Class A residential and preservation zone noise limits at locations up to 4,600 feet from the station boundaries. Therefore future development of lands for residential/preservation uses within 4,600 feet and for commercial/multi-family uses within 2,500 feet should be discouraged unless it can be demonstrated that local shielding effects from buildings, tanks, etc. on the station site allow for shorter buffer areas. (OP's Exhibit No. 1, p. 44.)

253. No special noise mitigation measures will be required from the Petitioner for the operation of the proposed generating station. (OP's Exhibit No. 1, p. 44.)

Construction Noise

254. When measured 600 feet from the source, noise levels associated with the operation of diesel equipment typically range from about 57 to 67 dBA. Predicted noise levels for the nearest noise sensitive properties (day-care and social services facilities) located in Puunene are not expected to exceed 24 dBA, below the existing ambient noise levels during construction and well drill activities. Also, twenty-four hour well drill operations should be possible without causing adverse noise impacts because of the Property's distance from noise sensitive properties. (OP's Exhibit No. 1, p. 44.)

255. According to the FEIS, no adverse noise impacts to the closest noise sensitive properties at Puunene are expected from construction noise due to the very low noise levels anticipated and due to the temporary nature of the work.

256. The intensity of the louder construction noise sources and the exterior nature of the work, make it impractical to mitigate construction noise along the Property to levels less than 70 dBA. A construction noise variance will be requested from DOH prior to construction and well-drilling activities. (OP's Exhibit No. 1, pp. 44 and 45.)

Air Quality

257. Existing air quality on Maui is heavily influenced by agriculture, the airport, and motor vehicles. Air pollutants include particulate matter, carbon monoxide, and hydrocarbon emissions. (Petitioner's FEIS p. 4-3.)

258. The Petitioner did not do an evaluation of the air pollution that would be caused by the 44 daily trips of 9,000-gallon tankers traveling from the harbor to the proposed generating plant. (TR. 2/27/98, p. 145, lns. 17- 25.)

259. The daily supply of diesel fuel (44 fuel trips) will be transported from Kahului Harbor in tanker trucks traveling along Hobron Avenue, Hana Highway, and Pulehu Road to the Property. (OP Exhibit No. 1. p. 49.)

260. The FEIS cites several significant industrial sources of air emissions located within a few miles of the Property. These include:

- Puunene Sugar Mill, approximately 2.5 miles to the northwest
- Kahului Airport, approximately 3 miles to the north
- Kahului Power Plant, approximately 4 miles to the northwest
- Paia Sugar Mill, approximately 4.5 miles to the northeast
- Maalaea Power Plant, approximately 5 miles to the southwest

Existing Conditions

261. An air quality monitoring station was operated at Maalaea Monitoring Station 235 between August 1993 and July 1994. (Petitioner's FEIS p. 4-3.)

262. Data from Station 235 provided a conservative estimate of the existing air quality at the Property because the station is a post-construction site located close to the Maalaea Power Plant. The concentrations of sulfur dioxide, particulate matter less than 10 microns in diameter, ozone, nitrogen dioxide and carbon monoxide measured at Station 235, and shown in Petitioner's FEIS-Table 4-1, are expected to be found in less concentrations at the Property which is approximately 6 miles upwind from Maalaea. (Petitioner's FEIS p. 4-3.)

Air Quality Control Technologies

263. The Best Available Control Technology (BACT) is defined by the Clean Air Act as "an emissions limitation...based on the maximum degree of reduction for each pollutant...which the review authority, on a case by case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable...through the application of production processes or available methods, systems and techniques...." (OP's Exhibit No. 1, p. 34.)

264. The application of BACT cannot result in the emissions of any pollutant that would exceed the level allowed by an applicable New Source Performance Standard (NSPS) or National Emissions Standard for Hazardous Air Pollutants (NESHAP). (TR., 4/8/98, p. 54, lns. 155 to 19, and OP's Exhibit No. 1, p. 34.)

265. The FEIS summarizes BACT used in other utility projects in Hawaii which may be appropriate for use at the proposed Waena Generating Station to control the following air pollutants:

- Sulfur dioxide ($S0_2$) and sulfuric acid mist ($H_2S0_4$)
- Particulate matter ($PM_{2.5}$ and $PM_{10}$)
- Carbon monoxide (CO)
- Hydrocarbon/volatile organic compounds (VOC)
- Nitrogen oxide ($NO_x$)

(OP's Exhibit No. 1, pp. 34 and 35.)

266. Sulfur dioxide and sulfuric acid mist are the resultant emissions from all combustion sources that fire sulfur-bearing fuels. The use of flue gas desulfurization (FGD) systems and limitation of fuel sulfur content are two options available to control sulfur dioxide and sulfuric acid mist emissions. (OP's Exhibit No. 1, p. 35.)

267. Although flue gas desulfurization (FGD) systems (including sodium scrubbing, dual alkali scrubbing, and dry scrubbing), have proven effective for decreasing sulfur dioxide emissions from the combustion of high-sulfur fuels in broilers, they are not an effective method to use for combustion turbines for two reasons: excess air flow through the turbines lowers the sulfur dioxide content of the flue gas below levels that would make the use of an FGD system efficient; and exhaust temperatures of combustion turbines are generally higher than what the FGD system can tolerate. (OP's Exhibit No. 1, p. 35.)

268. The Petitioner has found that limiting the fuel sulfur content by firing 0.05 percent fuel rather than 0.4 percent fuel does not make this technology an attractive option for controlling sulfur dioxide emissions because of the higher incremental costs to achieve reduced air emissions which are considered minimal. (OP's Exhibit No. 1, p. 35.)

269. Particulate matter can be controlled by electrostatic or fabric filters. However, reductions from either of the two filters are considered technically inferior to the use of a properly

designed combustion turbine. The high exhaust rates and low particulate emissions (less than 1 micron in diameter) from properly designed combustion turbines are a better alternative for reducing PM emissions. (OP's Exhibit No. 1, p. 35.)

270. Carbon monoxide can be reduced through a method identified as catalytic oxidation. In this method, carbon monoxide and hydrocarbons are oxidized to carbon dioxide and water vapor as the turbine exhaust gases are passed through a catalyst bed. Sulfur dioxide ($S0_2$) is also oxidized to $S0_3$, producing a visible plume with high levels of $SO_3$ and sulfuric acid ($H_2S0_4$) mist. When compared to other methods, the high cost of employing this technology ($3,500 and $5,000 per ton of CO removed), makes it economically prohibitive.(OP's Exhibit No. 1, pp. 35 and 36.)

271. Volatile Organic Compounds (VOC). There are no known required applications of add-on technologies for VOC control on oil-fired combustion turbines. However, the process of catalytic oxidation described for the reduction of Carbon monoxide can also be used to reduce VOC/hydrocarbon emissions.(OP's Exhibit No. 1, p. 36.)

272. Nitrogen oxide ($NO_X$) emissions from CTs can result in either thermal $NO_X$, or fuel $NO_X$. Thermal $NO_X$ is created by the high temperature reaction of nitrogen and oxygen in the combustion air. Fuel $NO_X$ is created by the gas-phase oxidation of fuel-bound nitrogen and depends on fuel nitrogen content and combustion oxygen levels. The control technologies available to reduce $NO_X$ emissions are wet injection and selective catalytic reduction (SCR). (OP's Exhibit No. 1, p. 36.)

273. In wet injection control, moisture (either demineralized water or steam), injected into the gas turbine combustion chamber, reduces the peak flame temperature, thereby reducing the formation of thermal $NO_X$. (OP's Exhibit No. 1, p. 36.)

274. In selective catalytic reduction (SCR), ammonia is injected into the exhaust gas upstream of a catalyst bed. The ammonia reacts on the catalyst surface with $NO_X$ emissions from

the combustion turbine and forms molecular nitrogen and water vapor. The greatest $NO_x$ reduction occurs at temperatures between 500° F and 700 ° F. Temperatures below 500 ° F, greatly reduce the catalyst activity and allows unreacted ammonia to slip through. Temperatures higher than 850° F cause the ammonia to oxidize and form additional NOx. (OP's Exhibit No. 1, p. 36.)

275. To determine the technical feasibility of using SCR in applications with high temperature sulfur-bearing fuels, and simple cycle and combined cycle operations, the Petitioner conducted a demonstration project. The results of the demonstration project which was conducted in two parts, and lasted nearly 2 years, are being reviewed by the DOH and the EPA. (Petitioner's Exhibit C-55, p. 2-1, and OP's Exhibit 1, p. 36)

276. The first year of the demonstration program consisted of an evaluation of a conventional vanadium-based catalyst which would be installed within a relatively low-temperature region of a combined-cycle turbine heat recovery steam generator (HRSG). The second year of the demonstration program consisted of an evaluation of a high-temperature zeolite catalyst which would be employed on simple-cycle units, or alternatively, on combined-cycle units upstream of the HRSG or in the HRSG bypass. (Petitioner's Exhibit C-55, p.2-15)

277. The low-temperature demonstration program results show that there are technical feasibility issues associated with both the performance of the low-temperature catalyst and the long-term performance and reliability of the HRSG. (Petitioner's Exhibit C-55, p.2-1)

278. The performance of the high-temperature catalysts was significantly below that of the catalyst tested during the low-temperature portion of the demonstration program. (Petitioner's Exhibit C-55, p.2-15)

279. Several issues remain unresolved from the demonstration project. These include:

- the impact of the SCR technology on the heat-recovery steam generator HRSG;

- the process for treating wastewater resulting from the high pressure washing procedure to remove ammonium bisulfate deposits from HRSG;

- the expense of acquiring the ammonia; and potential hazards in transporting, storing, and using ammonia. (Petitioner's Exhibit C-55, p. 2-9 and 2-10, and OP's Exhibit 1, pp. 36 - 37)

280. The Best Available Control Technology (BACT) for the proposed Waena Generating plant has yet to be determined by the Petitioner. The BACT cannot be determined until the DOH and the US Environmental Protection Agency (EPA) review the design-specific elements and modeled air emissions through the air quality permit process. When the appropriate technologies have been determined by the DOH and EPA, the final design for the generating station will reflect the necessary BACT requirements . (OP's Exhibit 1, p. 37)

281. The four combined cycle units for the proposed Waena generating station will be installed over 20 to 30 years. At the time of permitting for each of these units, the Petitioner will have to do a new BACT analysis. (TR. 4/8/98, p. 63, lns. 9 to 23)

282. The EPA guidelines state the background air quality data used in an application has to be basically completed within three years. (TR. 4/8/98, p. 68, lns. 12 to 14.)

283. Emissions of air pollutants are regulated at the Federal level pursuant to the Clean Air Act. Major components of the Clean Air Act Include:

- National Ambient Air Quality Standard (NAAQS)

- New Source Review
  - -Prevention of Significant Deterioration (PSD) Program
  - -Non-attainment Regulations

- New Source Performance Standards (NSPS)

- National Emissions Standards for Hazardous Air Pollutants (NESHAP) (NESHAP regulations do not apply to fossil-fuel fired power plants);

- Good Engineering Practice (GEP) Stack Height Provisions. (OP's Exhibit 1, p. 37)

National Ambient Air Quality Standard (NAAQS)

284. NAAQS represents the maximum pollution levels considered to be acceptable, with an adequate margin of safety, to protect public health and welfare. NAAQS have been established for sulfur dioxide ($SO_2$), carbon monoxide (CO), ozone ($O_3$), particulate matter less than 10 microns in diameter ($PM_{10}$), and lead (Pb). Hawaii's State Ambient Air Quality Standards have stricter standards for CO, $O_3$ and nitrogen dioxide ($NO_2$), and also include a standard for hydrogen sulfide. (OP's Exhibit 1, p. 37)

New Source Review

285. Under the Prevention of Significant Deterioration (PSD) regulations, the proposed Waena Generating Station will be classified as a major stationary source of pollutants. A PSD review is required for all pollutants from a major source showing significant net increases in emissions because of a modification, and for which the project area is in compliance with the applicable National Ambient Air Quality Standards. (OP's Exhibit 1, p. 38)

286. The regulations also require one year of continuous air monitoring if pollutants exceed those levels below which the DOH may exempt a stationary source or modification from the air quality analysis pre-construction monitoring analysis. According to the FEIS, the proposed Waena Generating Station will be subject to the PSD permitting review process for nitrogen oxide ($NO_x$), $SO_2$, CO, $PM/PM_{10}$, sulfuric acid ($H_2SO_4$) mist as follows:

- Application of Best Available Control Technology (BACT);

- Analysis of ambient air quality impacts from the project (Prevention of Significant Deterioration Class II increments for $SO_2$, $PM/PM_{10}$, and $NO_2$; National Ambient Air Quality Standards/Hawaii State Ambient Air Quality Standards for $SO_2$, $NO_2$, $PM/PM_{10}$, and CO);

- Analysis of air quality and or/or visibility impacts on Class 1 areas;

• Analysis of air-quality-related values such as soils, vegetation, and visibility that are affected directly as a result of the project and general commercial, residential and other growth associated with the project. (OP's Exhibit 1, p. 38)

287. PSD regulations provide for the classification of all geographic areas into one of three classes, with Class I designation being the most stringent, where any deterioration in air quality would be significant, and Class III designation the least stringent, allowing the greatest degree of air quality deterioration. The DOH has designated the area around the Property as Class II. Class II designations allow for moderate, well controlled, and sited industrial growth. (OP's Exhibit 1, p. 38)

288. The closest area to the proposed Waena Generating Station having a Class I designation is Haleakala National Park, approximately 12 miles southeast. The National Park Service requested the Petitioner to perform an analysis of sulfur dioxide, particulate matter, and nitrogen dioxide using the EPA Rough Terrain Dispersion Model (RTDM). The RTDM was used to determine the impact of the proposed four 58-MW units. The predicted concentrations of emissions show that with all four units operating, the predicted pollutant emissions would consume less than 27 percent of the protective Class I Increments. Therefore, the Waena Generating Station will not have an adverse impact on Haleakala National Park. (OP Exhibit No. 1, p. 39)

289. Results of the Class II Increment Analysis modeling conducted by the Petitioner to determine the combined impact of the prospoed generating facility, and increment consuming sources, demonstrated that the proposed facility (from one to four units) will be in compliance with Class II increments. (Petitioner's FEIS, p. 4-11.)

290. The National Park Service provided the following comments: "The air quality impact analysis applied the Environmental Protection Agency (EPA) Rough Terrain Dispersion Model (RTDM) to calculate the impact of sulfur dioxide ($SO_2$), nitrogen dioxide ($NO_x$) and

Particulate Matter in the park. The Modeling analysis indicate that the Waena project by itself will not totally consume the Prevention of Significant Deterioration (PSD) Class I increments." (OP Exhibit No. 1, p. 39)

291. The FEIS lists the maximum potential emission increases for a single 58-MW unit based on a worse case operation of 8,760 hours per year in Table 4-4. Under this scenario, the proposed generating station is a significant source of $NO_x$ $SO_2$, CO, $NO_2$, $PM/PM_{10}$, and $H_2SO_4$. The Table shows that the generating station will not be a significant source for beryllium, mercury, lead, or fluoride. It is stated in the FEIS that the project is subject to PSD review only for $NO_x$, $SO_2$, CO, $PM/PM_{10}$ and $H_2SO_4$ mist as follows:

- Application of Best Available Control Technology (BACT)
- Analysis of ambient air quality impacts from the project (PSD Class II increments for $NO_2$, $SO_2$, CO, $PM/PM_{10}$; NAAQS/SAAQS for $NO_2$, $SO_2$, $PM/PM_{10}$, and CO)
- Analysis of air-quality and/or visibility impacts on Class I areas
- Analysis of air-quality related values such as soils, vegetation, and visibility that are affected directly as a result of the project and general commercial, residential, and other growth associated with the project.

(OP's Exhibit No. 1, p. 40, and Petitioner's FEIS.)

Good Engineering Practice (GEP) Stack Height Provisions

292. The four stacks (one for each of the four dual-train combined-cycle units proposed for the generating station) will be 150 feet high and 24 feet in diameter, and arranged with the stacks running perpendicular to the prevailing trade winds. This stack height will allow adequate dispersion, preventing excessive concentrations of air pollutants. The stack heights satisfy all EPA and State requirements. (OP's Exhibit No. 1, p. 40.)

New Source Performance Standards (NSPS)

293. NSPS are national emission standards that apply to new, modified, or reconstructed stationary source categories that include the emission limitations that apply to a new, oil-fired combustion turbine. The standards are as follows:

- Sulfur dioxide-0.015 percent sulfur dioxide in the exhaust gas at 15 percent oxygen, or 0.8 percent sulfur by weight.

- Nitrogen oxide ($NO_x$)-75 parts per million (ppm) in the exhaust gas at 15 percent oxygen.

(OP's Exhibit No. 1, p. 40.)

The Maui Vortex

294. As wind patterns cross the Maui Isthmus, their interactions with Haleakala and West Maui, create a circular wind pattern described as the Maui Vortex. These wind patterns could cause emissions from the proposed generating plant to be drawn into and contained in the vacuum created in the center of the vortex. A July 1997 study prepared by Dr. Thomas A. Schroeder and Jim Clary & Associates, evaluated the potential impact of the Maui Vortex on the emissions from the proposed Waena Generating Station. The objective of the study was to determine whether generating plant emissions would be entrained into, and accumulated within the vacuum the vortex. The study found no significant plume impacts on the vortex and further concluded that even a persistent vortex would not result in a significant concentrations of $SO_2$, $NSO_2$, $PM_{10}$, sulfuric acid mist ($H_2SO_4$) and ethylene. (OP's Exhibit No. 1, pp. 40 and 41.)

295. The Petitioner states that during construction, vehicle and equipment exhaust emissions will be small, localized, and transient. Dust emissions generated during site excavation and equipment movement will be elevated due to large-scale grading. The FEIS stated that "As long as precautions are taken to water the site during dry or windy periods, construction emissions are not expected to be significant." (OP's Exhibit No. 1, p. 41.)

296. Under certain emergency situations, steam from the combined cycle system currently in operation at Maalaea is vented to the atmosphere via pressure relief valves. (TR. 4/8/98, p. 26, lns. 12 to 22.)

297. Since 1993, when the combined cycle system went into operation at Maalaea, steam is vented from the system on the average of once a year. (TR. 4/8/98, p. 26, lns. 23 to 25.)

Water Quality

298. The variation in groundwater quality downgradient of the Property is not precisely known, but groundwater quality generally becomes more brackish in a northwesterly direction toward the coast. (Petitioner's FEIS, p. 4-26.)

299. Based on data from three monitor wells located in the nearby Central Maui Landfill, the basal aquifer underlying the project site has a head of about 4.8 feet and chloride content that is barely potable. However, because the aquifer depends upon artificial recharge from excess irrigation water, the aquifer still is considered nonpotable and is not a potential source of drinking water. (Petitioner's FEIS, p. 4-26.)

Surface Water

300. Surface water in the area is comprised of intermittent natural streams within Kalialinui and Pulehu gulches, reservoirs, and irrigation ditches. The reservoirs and ditches are owned and operated by HC&S only for the impoundment and transport of irrigation water. (Petitioner's Exhibit 6B, Appendix A, p. 3)

301. An irrigation ditch runs through the Property. The Property is approximately 1,000 feet from Kalialinui Gulch and 5,000 feet from Pulehu Gulch. Both gulches are normally dry and flow only during storm runoff conditions, and the streambeds are heavily vegetated. (OP's Exhibit No. 1, p.29.)

302. The development of the proposed Waena Generating Station will remove 65.7 acres from sugar cane cultivation. Fifteen acres will remain in open space reserved for easements and approximately 50 acres will be developed. Stormwater over the developed 50 acres will increase from 34 cfs to 204 cfs. (OP's Exhibit No. 1, p. 29.)

303. Based on the conceptual design for the proposed generating plant, stormwater runoff would increase from approximately 45.5 cubic feet per second (cfs) to approximately 215.4 cfs. (OP's Exhibit No. 1, p. 29.)

304. The Hawaiian Commercial & Sugar Company provided the following comments:

> "In addition to implementation of Best Management Practices (BMPs) to prevent runoff into the ditch, any storm water discharges during construction activities at the site will require coverage under and compliance with the State's General Permit for Discharge of Storm Water Associated with Construction Activity, or an individual discharge permit."
> (OP's Exhibit No. 1, p. 29.)

Water Use for the Project

305. Water quality was a factor in the site selection process. (TR., 2/27/98, p. 127, lns. 1 to 3.)

306. Water is a requirement for generating power Plants. (TR., 2/27/98, p. 127, ln. 8.)

307. In power plant operations, water needs to be demineralized prior to injection into the combustion turbines to control emissions. Demineralized water is also needed for the combined cycle operation for the boiler feed water. A fairly clean water source is needed to produce premium water to be used for these two applications (TR., 2/27/98, p. 127, lns. 9 to 13.)

308. Demineralization prevents maintenance problems such as plating on boiler tubes, rotors and combustion turbines. (TR., 2/27/98, p. 128, lns. 23 to 25, and p. 128, lns. 1 and 2.)

309. Four wells are proposed to provide the nonpotable water needs for the generating plant. One well will be required for each of the four DTCC units planned and consequently their construction will be phased along with the proposed installation of each DTCC unit (2006, 2010, 2014 and 2017 or later). The hydrogeologic survey prepared by Water Resources Associates in May 1997, concluded that the proposed development of 0.88 mgd of nonpotable water required for

the Waena Generating Station at full buildout will not have any adverse impact on the basal groundwater aquifer.(OP's Exhibit No. 1, p. 28)

310. The estimated water use for one DTCC unit is approximately 220,000 gallons per day (gpd). The projected average daily water requirements for the four DTCC units proposed for the Waena Generating Plant would be 880,000 gpd. (OP's Exhibit No. 1, p. 28)

311. The four brackish groundwater supply wells with pump capacities of 225 gpm will be developed on the Property to meet water requirements of 880,000 gpd for the operation of the CTs and related facilities. Well water will be desalinated of treated as required and stored onsite. (OP's Exhibit No. 1, p. 28, Petitioner's FEIS, p. 4-29)

312. Firewater tanks, pumps, piping, and hydrants will be installed to store and disburse water for the sole purpose of fire control. (TR. 4/8/98, p. 23, lns. 3 to 5.)

313. Two separate 240,000-gallon storage tanks will be constructed to meet Maui County Water Systems Standards for a fire flow requirement of 2,000 gallons per minute (gpm) for 2 hours. (OP's Exhibit No. 1, p. 28)

314. Maui County Water Systems Standards for fire flow is 2,000 gallons per minute (gpm) for two hours. (OP's Exhibit No. 1, p. 28)

315. The Department of Land and Natural Resources, Commission on Water Resource Management (CWRM) indicated that a well Construction Permit and a Pump Installation Permit from the CWRM would be required before groundwater is developed as a source of water supply for the project. The Department further recommended coordination with the County to incorporate the project into the County's Water Use and Development Plan. (OP's Exhibit No. 1, p. 28)

Wastewater

316. Development of the 232-MW generating station will generate an average of 440,000 to 480,000 gallons of wastewater per day which will be disposed of by means of injection wells. (Petitioner's FEIS, p. 4-29)

317. The principal source of wastewater will be from a process designed to produce relatively pure water from brackish groundwater. Brackish well water is run through a dual media filter to take out particles not removed by filtration. The water is processed further to clean out more of the constituents. Identified as reverse osmosis, this process will produce a concentrated solution of salts and minerals. (TR. 2/27/98, p. 129, lns. 8 to 14)

318. The treated water will be used for nitrogen oxide control and steam generation. (OP Exh. 1, p. 29)

319. Another source of wastewater will be from the backwashing of cation and anion resin beds used to remove minerals from process water. The wastewater from backwashing will contain minerals removed from the water, acid and caustic solutions used for neutralization, and traces of the resin chemicals. (OP's Exhibit No. 1, p.29, and Petitioner's FEIS, p. 4-29.)

320. The Department of Health has the following comments regarding wastewater.

"A National Pollutant Discharge Elimination System (NPDES) general permit is required for the following discharges to waters of the State:

a. Storm water discharges relating to construction activities, such as clearing, grading, and excavation, for projects equal to or greater than five acres;
b. Storm water discharge from industrial activities;
c. Construction dewatering activities;
d. Noncontact cooling water discharge less than one million gallons per day;
e. treated groundwater from underground storage; and
f. Hydrotesting water." (OP's Exhibit No. 1, pp. 28 and 29)

321. Any person requesting to be covered by an NPDES general permit for any of the above activities should file a Notice of Intent with the Department's Clean Water Branch at least 30 days prior to commencement of any discharge to waters of the State. (OP's Exhibit No. 1, p.30.)

322. After construction of the proposed facility is completed, an NPDES individual permit will be required if the operation of the facility involves any wastewater discharge into State waters." (OP's Exhibit No. 1, p.30.)

323. The Department of Agriculture provided comments supporting the proposed reclassification from Agricultural to Urban, but had the following concerns relating to the potential impacts from surface runoff and wastewater injection on surrounding sugar cane operations:

> "Since groundwater downslope of the generating station is used by HC&S for irrigation and cooling water for their power plant, we believe that the petitioner should take every reasonable effort to monitor and, if necessary mitigate any unanticipated adverse impact to this water source attributable to power plant wastewater injection." (OP's Exhibit No. 1, p. 49.)

324. The Department of Land and Natural Resources, Commission on Water Resource Management (CWRM), provided the following comments:

> "We are concerned about the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality. A Well Construction Permit and a Pump Installation Permit from the CWRM would be required before ground water is developed as a source of supply for the project." (OP's Exhibit No. 1, pp. 30 and 31.)

ADEQUACY OF PUBLIC SERVICES AND FACILITIES

Roadway and Highway Services and Facilities

325. The development of the site for the installation of the first unit of generation by the year 2006 will include full grading of the site, and construction of the main access and fuel delivery access driveways needed to support all four DTCC generating units. Due to the change in topography between the Property and Pulehu Road, site distance analyses will need to be conducted prior to project design to determine the best placement of the access driveways into the Property. The Petitioner will coordinate site access issues along Pulehu Road with the County of Maui. (OP's Exhibit No. 1, p. 49.)

326. At full buildout, the operation of four DTCC units (eight combustion turbines) will require approximately 44 truckloads of No. 2 diesel fuel daily with deliveries averaging about 9,000 gallons of fuel. (TR. 2/27/98, p. 140, lns. 15 to 17.)

327. The daily supply of diesel fuel (44 fuel trips) will be transported from Kahului Harbor in tanker trucks traveling along Hobron Avenue, Hana Highway, and Pulehu Road to the Property. (OP Exhibit No. 1. p. 49.)

328. Future traffic improvements, currently in the environmental processing or design stage, are planned for completion by 1999. These improvements, including the construction of new roadways and traffic signals, will be implemented prior to the operation of the Waena Generating Station. Some of these improvements include DOT's installation of traffic signals at the intersection of Hana Highway, Kamehameha Avenue, and Hobron Avenue. DOT is also proposing modifications to the present road network in the vicinity of the Property including the construction of a new four-lane Airport Master Plan as part of the Kahului Airport Master Plan. These modifications are anticipated to result in the diversion of regional and airport traffic from Dairy Road to the Airport Access Road, leaving Dairy Road to Serve local traffic. (OP Exhibit No. 1. p. 49.)

329. A traffic impact analysis was prepared for the Petitioner in May 1997, by Austin Tsutsumi & Associates, Inc. Trip generation estimates were developed for 2016, following Petitioner's installation of Phase III of the project when the plant is expected to have its full

compliment of employees (46). The estimates included the number of employees per shift, service and delivery trips, and the number of fuel haul trucks to the plant on a daily basis. According to the analysis, the project will generate approximately 210 vehicle trips during the morning peak hour, 145 entering the site, and 65 exiting the site. Approximately 192 vehicle trips were estimated during the afternoon peak hour, 56 entering the site and 136 exiting the site. Using a qualitative measure identified as Level of Service (LOS) to describe the conditions of traffic flow, ranging from LOS A (free flow conditions) to LOS F (congested conditions), analyses were conducted at major intersections near the Property. To these, the Petitioner added plant generated traffic data to estimated future traffic volumes. Although the analysis showed that a small number of individual approaches and turning movements will experience drops in LOS, the analyses further found no significant adverse impacts in the level-of-service for the area roadways. No intersection is expected to experience an approach or turning movement greater than LOS E, and the vehicle to capacity ration for the signalized intersection will not increase by any significant amount. (OP Exhibit No. 1. pp. 49 and 50.)

330. The Petition and the FEIS state that the proposed Waena Generating Plant will not require extension of existing County or State infrastructure to the site, and the project is not expected to have any direct impact that will require the expenditure of public funds for infrastructure. The project will have no significant adverse impact on regional traffic which will require mitigation. (OP Exh. 1, p. 50)

331. The Department of Transportation offered the following comments:

> "Our State transportation facilities can adequately accommodate the subject project. We do not anticipate an adverse impact to our systems." (OP Exhibit No. 1. p. 50.)

Water Service

332. The proposed development of 0.88 mgd of nonpotable water required for the Waena Generating Station at full buildout will not have any adverse impact on the basal

groundwater aquifer. Petitioner's studies have shown that nonpotable water needs can be met by drilling and developing one or more wells on the Property without impacting basal ground water quality. The wells will be constructed in accordance with all applicable regulatory requirements.

333. The Department of Land and Natural Resources, Commission on Water Resource Management (CWRM), provided the following comments: "A well construction Permit and a Pump Installation Permit from the CWRM would be required before ground water is developed as a source of supply for the project." (OP Exhibit No. 1. pp. 49, 50 and 51.)

334. No existing potable water service from the County of Maui exists near the Property. The only existing municipal well source in the Central Maui Sector, is located approximately 4.5 miles northwest of the Property outside of Kahului. Potable bottled water will be delivered by truck to the proposed Waena Generating Station. The Petitioner anticipates no extension of the County water delivery system. (OP Exhibit No. 1, p. 51, and Petitioner's FEIS, p. 4-29.)

Sanitary Wastewater Treatment and Disposal

335. There is no existing domestic sewer service from the County of Maui near the Property. Sanitary wastewater facilities will be constructed on the Property. Information concerning soil and site conditions will be evaluated to determine an appropriate design for the proposed septic system. (OP Exhibit No. 1. p. 51, and Petitioner's FEIS, p. 4-31.)

336. Petitioner will use a septic tank and a leach field to treat effluent from sanitary facilities. Detailed plans for the domestic wastewater treatment system will be submitted to the DOH for Review and approval as part of a treatment work approval application. (TR. 2/27/98, p. 134, lns. 16 to 20, and Petitioner's FEIS, p. 4-30.)

337. The Petitioner does not anticipate extension of the county wastewater system. (OP Exhibit No. 1. p. 51)

338. The Petitioner will submit detailed plans for the domestic wastewater treatment system to DOH for review and approval. The treatment system will conform to applicable

provisions of DOH Administrative Rules Chapter 11-62, including but not limited to Section 11-62-32 (spacing for individual wastewater systems), and Section 11-62-33,1(a) (requirements for septic tanks). The system will also conform to applicable sections of the Ten States Standards, and Chapters 10, 20, 40, and 50 of the DOH Administrative Rules (OP Exhibit No. 1. p. 51, and Petitioner's FEIS, p. 4-31.)

339. According to the information provided in the FEIS, nonpotable water needs for the proposed Waena Generating Station can be met by drilling and developing wells on site without impacting basal ground water quality. A net loss of 0.15 mgd of irrigation recharge to the aquifer would result from the withdrawal of 65.7 acres of land from active sugarcane cultivation. Half of the groundwater withdrawn (0.44 mgd) will be returned to the aquifer by means of injection wells, and according to a letter dated November 3, 1997, from the Petitioner to OP, would represent a net loss of approximately 0.6 mgd from the underlying aquifer. (OP Exhibit No. 1. p.31)

340. The disposal of wastewater from the generating station is not expected to have any hydrololgic impact on existing wells or the basal aquifer because the Property lies makai of the Department of Health's Underground Injection Control (UIC) line. Any potential impact from the use of injection wells will be mitigated by appropriate well design and testing. Further, the injection wells will be constructed and operated in full compliance with DOH UIC regulations. According to the information provided in the Petitioner's Groundwater Resource Assessment, the disposal of 0.44 mgd of wastewater will not negatively impact the aquifer for the following reasons:

- The rate of the wastewater injection is extremely small when compared to the rate of groundwater movement indicated by the large withdrawals of groundwater in the area;

- The quality of the wastewater is estimated to be similar to the existing groundwater quality; and

- The wastewater plume will be diluted by mixing and diffusion and is not expected to be detectable at any existing well or coastal area as the plume becomes dispersed and diluted to ambient groundwater quality. (OP Exhibit No. 1. p. 31)

341. According to the FEIS, the variation in groundwater quality downgrade of the site is not precisely known, but groundwater quality generally becomes more brackish in a northwesterly direction toward the coast. Data obtained from three monitor wells located in the Central Maui Landfill, indicates the basal aquifer underlying the Property is approximately 4.8 feet and has a chloride content of 192 to 216 mg/l. Although the chloride content is lower than the benchmark of 250 mg/l, for potable water, the aquifer is not a potential source of drinking water because it contains recharge from excess irrigation and is subject to contamination. (OP Exhibit No. 1., pp. 31 and 32)

342. HC&S provided the following comments regarding potential impacts of the proposed project on water quality. "Since HC&S has irrigation wells down slope of the power plant., we are concerned about the effect on existing ground water quality due to the wastewater injection wells and concerned about the potential impact the MECO wells could have on the yields on HC&S' existing wells." (OP Exhibit No. 1,. p.32)

343. The Department of Agriculture provided the following comments regarding the impact of the proposed Waena Generating Station on ground water quality: "...we believe that the Petitioner should take every reasonable effort to monitor and, if necessary, mitigate any unanticipated adverse impact to this water source attributable to power plant wastewater injection." (OP Exhibit No. 1. p. 32)

344. The Department of Land and Natural Resources, Commission on Water Resource Management (CWRM), stated the following concerns:

> "We are concerned about the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the

State Department of Health and the developer's acceptance of any resulting requirements related to water quality." (OP Exhibit No. 1,. p. 32)

345. The Petitioner's Groundwater Resource Assessment recommended that an on-site test well should be drilled to provide more detailed information on aquifer parameters and potential impacts. (OP Exhibit No. 1, p. 32)

346. The proposed Waena Generating Station will generate an average of 440,000 to 480,000 gallons of wastewater per day. The wastewater will be collected in wastewater storage tanks and will be at ambient air temperature when it is pumped into the four injection wells designed and constructed for this purpose. The average daily injection rate will be approximately 100 gpm per well. (OP's Exhibit No. 1, p. 53.)

Hazardous Waste and Materials

347. Hazardous materials which will be stored and used on the site will be the No. 2 diesel fuel, caustic soda, sulfuric acid and cleaning solvent. (TR. 4/8/98, p. 20, lns. 2 to 5.)

348. Caustic soda and sulfuric acid will be added to the wastewater to adjust the pH level to within UIC permit limits prior to discharge to the ground via the underground injection wells. (TR. 4/8/98, p. 20, lns. 6 to 16.)

349. Cleaning solvent is used for cleaning parts and equipment during routine maintenance and operations. The solvent is used at portable wash stations and recycled by vendors when it is spent and no longer useful. (TR. 4/8/98, p. 21, lns. 24 to 25, and p. 22, lns. 1 to 3.)

350. If Selective Catalytic Reduction (SCR ) is required as Best Available Control Technology as a condition of the PSD permit, the wastewater will pass through additional steps which will remove excess metals, adjust the pH level of the water, and air strip out the ammonia used in the SCR process. (OP's Exhibit No. 1, p. 53.)

351. Any potential impact from the use of injection wells will be mitigated by appropriate design and testing to determine aquifer characteristics.(OP's Exhibit No. 1, p. 53.)

352. The design, construction and operation of the injection wells will be in compliance with DOH Underground Injection Control (UIC) regulations. (OP's Exhibit No. 1, p. 53.)

Drainage and Flooding

353. According to the FEIS, drainage in the area is generally through a series of gulches extending radially from the upper slopes of Haleakala towards the central isthmus area. Slopes on the Property are minimal at approximately one degree. The Property is drained by Kalialinui Gulch, approximately 1,000 feet or a quarter mile to the north, and by Pulehu Gulch, located approximately 5,000 feet or a mile to the south of the Property. The flow from the Property is directed to the northwest, away from both gulches. (OP's Exhibit No. 1, p. 51.)

354. The development of the site for the installation of the first unit of generation by the year 2006, will include full grading of the site, and the installation of necessary infrastructure to include drainage improvements supply and injection wells, domestic wastewater systems, and roads to support all four DTCC generating units. At full buildout ,approximately 50 acres will consist of both impervious, asphalt areas and more pervious, gravel-covered areas. (OP's Exhibit No. 1, pp. 51 and 52.)

355. The proposed project is anticipated to increase stormwater runoff from approximately 45.5 cubic feet per second(cfs) to approximately 215.4 cfs. Stormwater over the developed 50 acres is anticipated to increase from approximately 34 cfs to 204 cfs. (OP's Exhibit No. 1, p. 52.)

356. According to the Petition, drainage containment will be designed in accordance with applicable County of Maui Standards and approved by the County of Maui Department of Public Works. To protect adjacent sugar cane fields from project specific runoff, the proposed project will include stormwater runoff and infiltration ponds to collect and contain storm water on site.

The ponds will have special sumps with oil/water separators to remove any oil before disposal of the storm runoff into an infiltration pond. A fifteen-foot landscape buffer around the facility will also aid in stormwater percolation. (OP Exh. No. 1, p. 52)

357. The HC&S provided the following comments regarding drainage. "In addition to implementation of BMPs to prevent runoff into the ditch, any storm water discharges during construction activities at the site will require coverage under and compliance with the State's General Permit for Discharge of Storm water Associated with Construction Activity, or an individual discharge permit." (OP's Exhibit No. 1, p. 52.)

Solid Waste Disposal

358. Solid waste disposal systems on Maui consist of the Central Maui Landfill, and the Hana Landfill. The Central Maui Landfill accepts commercial, industrial, and residential waste. (OP's Exhibit No. 1, p. 52.)

359. The Central Maui Landfill does not accept hazardous materials or construction materials. Construction materials and waste from the project will be disposed of by the construction contractor into the Maui Demolition and Construction Landfill. The Waena Generating Station will salvage or recycle parts, materials, and equipment to the fullest extent possible in order to reduce the anticipated minimal amount of solid waste which will be generated during operation of the plant. The remaining waste will be disposed of at the Central Maui Landfill. Solids from the sanitary septic system will be disposed of periodically at a County wastewater treatment facility. (OP's Exhibit No. 1, pp. 52 and 53.)

360. According to the FEIS, solid waste generated by the proposed Waena Generating Station will consist of the following:

- Construction waste;
- Materials associated with plant operation, administration, housekeeping, and maintenance operations
- Parts, material, and equipment replaced during maintenance.

(OP's Exhibit No. 1, p. 52.)

Police Protection

361. The Maui County Police Department provides police protection for the Wailuku-Kahului, Kihei, and Upcountry areas. Development of the Property is expected to have minimal impact on any requirement for police and fire protection. (TR. 4/8/98, p. 23, lns. 8 to 11.)

362. The Petitioner will develop on site security procedures. The Petitioner will also construct a fence around the Property, with full time security manning, and install checkpoints at the access driveways. (OP's Exhibit No. 1, pp. 53 and 54, and (TR. 4/8/98, p. 23, lns. 8 to 11.)

363. The Petitioner will install video monitoring and a remote control main gate. (TR. 4/8/98, p. 23, lns. 10 to 11.)

Civil Defense

364. There is no siren coverage in the area. The State Department of Civil Defense recommends that a siren simulator be purchased and installed inside the facility. (OP's Exhibit No. 1, p. 53, and TR. 4/8/98, p. 31, lns. 7-10.)

Fire Protection

365. Fire prevention, suppression, and protection services for the Wailuku-Kahului region are provided by the County Department of Fire Control. The nearest fire station to the project site is the Kahului Station, approximately 4 miles away. Other fire protection facilities in the Central Maui area include a fire station in Paia and another in Wailuku. (OP's Exhibit No. 1, p. 54)

366. The Petitioner currently has fire control plans for its existing generation facilities. A fire control plan will be designed specifically for the proposed Waena Generating Station. Emergency plans detailing the procedures to be followed when there is a fire or fuel spill will be coordinated with the district fire department and health care facilities. All Federal and State regulations regarding the operation of a generating station and worker safety will be followed. (OP's Exhibit No. 1, p. 54)

Fuel Spills

367. Delivery of fuel, acids, and caustic materials used in production operations will be conducted through an independent contractor, who is responsible for all handling from the tanker into the bulk storage areas at the project site. (Petitioner's FEIS, p. 4-79)

368. All transport contractors are required to file spill prevention and control and containment plans with the State which outline procedures to be carried out in the event of a spill incident. (TR. 4/8/98, p. 23, lns. 21 to 24.)

369. The Petitioner has a fuel oil pipeline operating manual that addresses fuel spills at the Kahului harbor. The plan is required by the U.S. Coast Guard under Title 33 of the Code of Federal Register. (TR. 4/8/98, p. 24, lns. 21 to 25.)

370. In the event of a spill, the first responders will be the transport contractor, county fire department, and MECO safety personnel. Immediate priorities will include isolating the area for public safety and securing and containing the source of the spill. Qualified hazardous material clean-up organizations will immediately be contacted to restore the affected area to its previous condition. (TR. 4/8/98, p. 23, ln. 25, and p. 24, lns. 1 to 6.)

Power and Communications Electrical and Telephone Service

371. The Property is undeveloped and has no telephone or communication service. (OP's Exhibit No. 1, p. 54)

372. The Petitioner has two 69-kV transmission lines running adjacent to the Property. The first transmission line (Maalaea-Kealahou 69-kV) runs along Waiko Road to the intersection of Pulehu Road, then turns south and extends along Pulehu Road towards Kealahou. The second transmission line (Kanaha-Pukalani) runs from Kanaha Substation along Pulehu Road past the project site to the intersection of Waiko Road, crosses Pulehu Road diagonally and continues across cane lands towards Pukalani. In addition to the Petitioner's transmission system, HC&S

has some smaller distribution lines which run through cane land to service irrigation and water pumps. (OP's Exhibit No. 1, p. 54)

Recreation Facilities and Public Access

373. Recreational and ocean related facilities occur along the coastline from Kahului Harbor to Spreckelsville Beach. Existing facilities include Kahului Harbor Park and Kahului Beach, Kanaha Beach Park, and Spreckelsville Beach. (OP's Exhibit No. 1, p. 56)

The proposed generating plant will not have an adverse impact on the public's access and use of the shoreline area, and there will be no adverse impact to nearshore waters from point an non-point sources of pollution. (OP's Exhibit No. 1, p. 56)

374. The electricity generated by the proposed Waena Generating Station will provide the energy required for existing and planned recreational facilities throughout the entire Island of Maui. (OP's Exhibit No. 1, p. 56)

COMMITMENT OF STATE FUNDS AND RESOURCES

375. The proposed Waena Generating Station project will be funded through the Petitioner's customer base and will not require expenditures by either the State of Hawaii, or the County of Maui. (OP's Exhibit No. 1, p. 10.)

CONFORMANCE TO APPLICABLE DISTRICT STANDARDS

376. The proposed reclassification is in general conformance to §15-15-18 of the Land Use Commission rules, standards for determining "U" Urban District boundaries. The Property will be zoned and developed for heavy industrial use, and is located close to other industrial uses. . The four-phased planned construction and operation of the proposed Waena Generating Station will be compatible with existing and planned expansion of existing heavy industrial uses in the area. (OP's Exhibit No. 1, p. 57.)

CONFORMANCE WITH THE GOALS, OBJECTIVE AND POLICIES OF THE HAWAII STATE PLAN; RELATIONSHIP WITH APPLICABLE PRIORITY GUIDELINES AND FUNCTIONAL PLANS

State Plan Objectives and Policies for Facility Systems

Energy/Telecommunications:

377. The proposed Waena Generating Station will provide a system that meets the projected electrical demand, increases system reliability, and provides dependable electrical service to its customers. Planning for the State's facility systems with regard to energy shall be directed towards the achievement of "Dependable, efficient, and economical statewide energy systems capable of supporting the needs of the people." Sec. 226-18 (a) (1) and (b) (OP's Exhibit No. 1, p. 23)

378. After examining the alternatives (including coal, non-firm renewable energy sources such as wind or hydropower, increased emphasis on DSM programs, and IPP proposals), the Petitioner has determined that the proposed Waena Generating Station is the only reasonable way to meet its PUC obligations of providing high-quality, reliable service at the least cost to the customer within the necessary time frame. Sec. 226-18 (c) (1) (2) (OP's Exhibit No. 1, p. 23)

379. Resource limitations and environmental, public health, and safety concerns were considered in selecting the site and appropriate technology for the generating facility. A comparison of costs and benefits for both alternative fuels and alternative technologies was performed. Currently, alternative fuels and technologies do not represent the least-cost energy supply option or the maximum efficient technology. Sec. 226-18 (c) (3) (OP's Exhibit No. 1, p. 23)

380. Through the Integrated Resource Plan (IRP) process, the Petitioner has developed a long- range energy plan for the Island of Maui by considering not only the traditional supply-side resources but also the customer (demand-side) resources that are available. Sec. 226-18 (c) (4) A. (OP's Exh. No. 1, p. 24)

381. The Petitioner is cooperating with the Pacific International Center for High Technology Research, the County of Maui, and the State of Hawaii, in examining biomass to electricity applications for Hawaii. Sec. 226-18 (c) (4) B (OP's Exhibit No. 1, p. 23)

382. The Petitioner has contributed to and constructed facilities for alternative and renewable energy resources, such as wind and hydroelectric power. The Petitioner also has power purchase contracts with independent power producers. These power purchase contracts are based on alternative and renewable technologies and include sugar cane bagasse and biomass-fueled steam turbine generators. Sec. 226-18 (c) (4) C (OP's Exhibit No. 1, p. 24)

383. A comparison of costs and benefits for both alternative fuels and alternative technologies was performed during the development of the Petitioner's Integrated Resource Plan. Alternative fuels and technologies do not represent the least cost energy supply option or the maximum efficient technology. The use of diesel-fueled dual-train combined-cycle units currently are justified over alternative fuels and technologies, while other renewable energy projects are being developed. Sec. 226-18 (c) (5) (OP's Exhibit No. 1, p. 24)

384. Through the Integrated Resource Plan (IRP) process, the Petitioner has developed a long- range energy plan for the Island of Maui by considering not only the traditional supply-side resources but also the customer (demand-side) resources that are available. Sec. 226-18 (c) (4) A (OP's Exhibit No. 1, p. 24)

385. Demand-Side Management (DSM) programs, which are a component of the Integrated Resource Plan (IRP), were designed to influence customer consumption of electricity in a manner that will produce changes in the utility's demand. The Petitioner formed four DSM resource programs based upon the common end-uses and market segments that they address. These programs include the: Commercial and Industrial Energy Efficiency Program; Commercial and Industrial Customized Rebate Program; Commercial and Industrial New Construction Program; Residential Efficient Water Heating Program. Potential programs include conservation, energy efficiency, load management, and fuel substitution. Sec. 226-18 (c) (6) (OP's Exhibit No. 1, p. 24)

386. The Petitioner continues its program of installing small photovoltaic systems on public schools through their Sun Power for Schools project. Sec. 226-18 (c) (7) (OP's Exhibit No. 1, p. 24)

387. During the resource planning process, the Petitioner evaluated the following issues: existing and forecasted demand for energy and capacity; existing and forecasted fuel prices; impacts of Demand-Side Management (DSM) and conservation and energy efficiency programs on the demand for energy; existing firm capacity; maintenance and retirement schedules of generating units; existing Purchase Power Agreements (PPAs) from the independent power producers (IPPs); and proposal for future PPAs from IPPs. (OP's Exhibit No. 1, p. 57)

388. The Petitioner found the following DSM resources programs to be cost-effective in the integration analysis:

- Commercial ventilators and air conditioners
- Commercial lighting program
- Commercial refrigerator program
- Commercial water heating program
- Industrial motors program
- Custom Rebate Program
- Residential Water Healing Program

(Petitioner's Exhibit C-13, p. 10-2)

CONFORMANCE WITH COASTAL ZONE OBJECTIVES AND POLICIES

*§205A-2, (b) (4), Coastal Ecosystems: Protect valuable ecosystems, including reefs from disruption and minimize adverse impacts on all coastal ecosystems.*
*Policies:*

*a. Improve the technical basis for natural resources management.*
*b. Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance.*
*c. Minimize disruption and degradation of coastal water ecosystems by effective regulation of stream diversions, channelization and similar land and water uses, recognizing competing water needs; and*
*d. Promote water quantity and quality planning and management practices which reflect the tolerance of fresh water and marine ecosystems and prohibit land and water uses which violate state water quality standards.*

392. The property is located approximately 4 miles inland. The proposed project will have no impact on the public's access and the use of the shoreline area and there will be no adverse impact to

nearshore waters from point and non-point sources of pollution. Because of its location and lack of coastal impacts, the project will conform with the objective related to recreational resources, coastal ecosystems, beach protection, and marine resources . (Petitioner's FEIS, pp. 5-10 to 5-11)

CONCLUSIONS OF LAW

Upon consideration of section 205-17, HRS and pursuant to chapter 205 HRS, chapter 15-15, HAR, the Commission finds upon a preponderance of evidence that the reclassification of the Property, consisting of approximately 65.7 acres, situated in the Wailuku and Makawao Districts, Island of Maui, and identified by Tax Map Key Numbers 3-8-03: 23 and 24, from the Agricultural District to the Urban District for the construction of the Waena Generating Plant is reasonable, nonviolative of section 205-2, HRS, and is consistent with the Hawaii State Plan as set forth in chapter 226, HRS the Coastal Zone Management Program as set forth in Chapter 205, HRS, and conforms to Chapter 15-15, HAR.

ORDER

IT IS HEREBY ORDERED that the property, which is the subject of this Docket No. A97-722 filed by the Petitioner, consisting of approximately 65.7 acres, situated in the Wailuku and Makawao Districts, Island of Maui, and identified by Tax Map Key Numbers 3-8-03: 23 and 24, shall be and is hereby reclassified from the State Land Use Agricultural District to the State Land Use Urban District, and Boundaries are hereby amended accordingly subject to the following Conditions:

1. Petitioner shall participate in an air quality monitoring program, coordinated with and approved by the State Department of Health (DOH) to monitor air quality impacts attributable to the operations of the Waena Generating Station. Mitigation measures for air quality impacts attributable to the operations of the Waena Generating Station shall be implemented by Petitioner if, based on applicable State and Federal air quality standards, the results of the monitoring program warrant them. Mitigation measures shall be developed in coordination with the DOH and implemented by Petitioner.

2. Petitioner shall consult with the State Department of Health (DOH) and if necessary, Petitioner shall participate in a groundwater quality monitoring program in

consultation with the County Department of Water and approved by DOH to monitor groundwater quality impacts directly attributable to the operations of the Waena Generating Station. The Petitioner shall implement mitigation measures should the results of the monitoring program warrant them based on applicable State and Federal water quality standards. Mitigation measures shall be developed in coordination with the DOH and implemented by Petitioner.

3. Petitioner shall provide at its own expense, adequate non-potable water source, storage, and transmission facilities and improvements to accommodate the proposed project. The non-potable water improvements shall meet all applicable County, State, and Federal standards and shall be consistent with the County of Maui adopted water use and development plan.

4. Petitioner shall consult with the State Department of Health (DOH) and, if necessary, prepare a wastewater disposal plan subject to review and approval by the DOH. Petitioner shall provide at its own expense adequate wastewater treatment, transmission and disposal facilities for wastewater directly attributable to the operations of the Waena Generating Station.

5. Petitioner shall establish appropriate systems to contain spills and prevent materials associated with heavy industrial uses attributable to the operations of the Waena Generating Station, such as petroleum products, chemicals or other pollutants, from leaching or draining into above ground or subsurface storm drainage collection areas. Based on applicable State and Federal standards, Petitioner shall use best management practices to minimize non-point source pollution into irrigation ditches. Petitioner shall consult with the State Department of Health and County Department of Public Works and Waste Management and obtain any permits required or construct improvements required for storm water discharge on the Property.

6. Petitioner shall consult with the State Department of Health (DOH) regarding hazardous waste storage and if necessary, prepare a hazardous waste storage plan.

7. Petitioner shall participate in the funding and construction of local and regional transportation improvements and programs attributable to the operations of the Waena Generating Station as determined by the State Department of Transportation (DOT) and the County of Maui.

8. Petitioner shall coordinate with the surrounding property owner to ensure that the proposed project will not adversely impact the use of cane haul roads and irrigation

ditches or adversely impact the continued agricultural operation of adjoining sugar cane cultivation areas.

9. Petitioner shall participate in the pro rata funding and construction of adequate civil defense measures as determined by the State of Hawaii and County of Maui civil defense agencies.

10. Petitioner shall implement effective soil erosion and dust control measures during and after construction in compliance with the applicable rules and regulations of the State Department of Health and the County of Maui.

11. Should any human burials or any historic artifacts, such as charcoal deposits, stone platforms, pavings or walls be found, Petitioner shall stop work in the immediate vicinity and contact the State Historic Preservation Division (SHPD). The significance of these finds shall then be determined and approved by the SHPD and, if applicable, an acceptable mitigation plan shall be approved by the SHPD. The SHPD must verify that the fieldwork portion of the mitigation plan has been successfully executed prior to work proceeding in the immediate vicinity of the find. Burials must be treated under specific provisions of Chapter 6E, HRS.

Docket No. A97-722 - Maui Electric Company, Ltd.

Done at Honolulu, Hawaii, this _____ day of _____ 19 ____ per motion on _____ 19 ____.

LAND USE COMMISSION
STATE OF HAWAII

By _____

Chairperson and Commissioner

By _____

Vice Chairperson and Commissioner

By _____

Vice Chairperson and Commissioner

By _____

Commissioner

By _____

Commissioner

By _____

Commissioner

Filed and effective on

_____, 19___

Certified by:

_____

Executive Officer

By _____

Commissioner

By _____

Commissioner

By _____

Commissioner

DOCKET NO. A97-722
CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing was served upon the following by either hand delivery or depositing the same in the U.S. Postal Service:

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Makawao, Hawaii 96768

DATED: Honolulu, Hawaii, this 14th day of May 1998.

OFFICE OF PLANNING
STATE OF HAWAII

RICHARD H. EGGED, JR.
Director of Planning

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ORIGINAL

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAII

| | |
|---|---|
| In the Matter of the Petition of<br><br>MAUI ELECTRIC COMPANY, LTD.<br><br>To Amend the Land Use District Boundary From the State Agricultural District to the Urban District for Approximately 65.7 acres of Lands Situated at Tax Map Key: 3-8-003:23 and 24, Pulehu, Island of Maui, Hawaii | Docket No. A97-722<br>Maui Electric Company, Ltd. |

LAND USE COMMISSION
STATE OF HAWAII
MAY 11 9 57 AM '98

STATEMENT IN SUPPORT OF THE PETITION AND
RECOMMENDED CONDITIONS OF THE STATE OF HAWAII,
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT
AND TOURISM, OFFICE OF PLANNING

Of Counsel:
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Attorneys for :
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County of Maui
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Telephone: 243-7735

## STATEMENT IN SUPPORT OF THE PETITION AND RECOMMENDED CONDITIONS OF THE STATE OF HAWAII, DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT AND TOURISM, OFFICE OF PLANNING

The County of Maui Planning Department (Department) is in support of the Petition for State Land Use District Boundary Amendment from the State Agricultural District to the State Urban District for 65.7 acres identified as Maui Tax Map Key 3-8-003: 23 and 24. The Department also supports the recommended eleven conditions of the State of Hawaii, Department of Business, Economic Development and Tourism, Office of Planning presented in their Testimony to the State Land Use Commission.

The Office of Planning is filing proposed Findings of Fact, Conclusions of Law, Decision and Order in support of the Petition. Since the State of Hawaii's position is similar to the Department's, we will not be filing separate proposed Findings of Fact, Conclusions of Law, Decision and Order for the petition.

Dated this 7th day of May, 1998 at Wailuku, Maui, Hawaii.

DAVID W. BLANE
Director of Planning
County of Maui

Of Counsel:
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BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAII

| | |
|---|---|
| In the Matter of the Petition of ) | Docket No. A97-722 |
| ) | Maui Electric Company, Ltd. |
| MAUI ELECTRIC COMPANY, LTD. ) | |
| ) | |
| To Amend the Land Use District ) | |
| Boundary From the State Agricultural ) | |
| District to the Urban District for ) | |
| Approximately 65.7 acres of Lands ) | |
| Situated at Tax Map Key: 3-8-003:23 ) | |
| and 24, Pulehu, Island of Maui, ) | |
| Hawaii ) | |

**CERTIFICATE OF SERVICE**

I HEREBY CERTIFY that a copy of the Statement in Support of the Petition and Conditions of the State of Hawaii, Department of Business, Economic Development and Tourism, Office of Planning has been served on the parties by depositing the same in the United States Postal Service by certified mail:

ESTHER UEDA, Executive Director
Land Use Commission
P.O. Box 2359
Honolulu, Hawaii 96804-2359 (Original and 15 copies)

Certified Mail # Z 225 255 709
Return Receipt Requested

RICHARD EGGED, JR., Director
Office of Planning
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ABE MITSUDA, Administrator
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Certified Mail # Z 225 255 715
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Dated: this 7th day of May, 1998, Wailuku, Maui, Hawaii.

DAVID W. BLANE
Director of Planning
Maui Planning Department