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

A97-722 - MAUI ELECTRIC CO., LTD. (Waena)

SEE FOLDER 3 of

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, a Hawai'i corporation	ORDER GRANTING REQUEST TO STRIKE ANY AND ALL REFERENCES TO MR. PAULL AND MR. SCHROEDER'S POSITIONS WITH THE UNIVERSITY OF HAWAI'I CONTAINED IN THE RECORD, INCLUDING MECO'S WITNESS LISTS
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, Hawai'i, TMK 3-8-03: 23 and 24	

This is to certify that this is a true and correct copy of the document on file in the office of the State Land Use Commission, Honolulu, Hawaii.

MAY 0 1 1998 by
Date Executive Officer

ORDER GRANTING REQUEST TO STRIKE ANY AND ALL REFERENCES TO MR. PAULL AND MR. SCHROEDER'S POSITIONS WITH THE UNIVERSITY OF HAWAI'I CONTAINED IN THE RECORD, INCLUDING MECO'S WITNESS LISTS

LAND USE COMMISSION
STATE OF HAWAII
MAY 1 11 04 AM '98

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI'I

In the Matter of the Petition of MAUI ELECTRIC COMPANY, LIMITED, a Hawai'i corporation 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, Hawai'i, TMK 3-8-03: 23 and 24	DOCKET NO. A97-722 ORDER GRANTING REQUEST TO STRIKE ANY AND ALL REFERENCES TO MR. PAULL AND MR. SCHROEDER'S POSITIONS WITH THE UNIVERSITY OF HAWAI'I CONTAINED IN THE RECORD, INCLUDING MECO'S WITNESS LISTS

ORDER GRANTING REQUEST TO STRIKE ANY AND ALL REFERENCES TO MR. PAULL AND MR. SCHROEDER'S POSITIONS WITH THE UNIVERSITY OF HAWAI'I CONTAINED IN THE RECORD, INCLUDING MECO'S WITNESS LISTS

On April 24, 1998, Petitioner Maui Electric Company, Limited, a Hawai'i corporation, requested the Land Use Commission ("Commission") to strike any and all references to Mr. Paull and Mr. Schroeder's positions with the University of Hawai'i contained in the record, including MECO's witness lists.

The Commission, having duly considered Petitioner's request at its meeting on April 24, 1998, at Waikapu, Maui, Hawai'i, and there being no objections from the other parties in this proceeding,

HEREBY ORDERS that Petitioner's request to strike any and all references to Mr. Paull and Mr. Schroeder's positions with the University of Hawai'i contained in the record, including MECO's witness lists, be GRANTED.

Dated: Honolulu, Hawai'i, May 1, 1998.

LAND USE COMMISSION
STATE OF HAWAI'I

By Rupert K. Chun
RUPERT K. CHUN
Chairperson and Commissioner

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI'I

In the Matter of the Petition of MAUI ELECTRIC COMPANY, LIMITED, a Hawai'i corporation 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, Hawai'i, TMK 3-8-03: 23 and 24	)	DOCKET NO. A97-722 CERTIFICATE OF SERVICE

CERTIFICATE OF SERVICE

I hereby certify that a copy of the Order Granting Request to Strike any and all References to Mr. Paull and Mr. Schroeder's Positions with the University of Hawai'i Contained in the Record, Including MECO's Witness Lists was served upon the following by either hand delivery or depositing the same in the U. S. Postal Service by certified mail:

DEL. RICK EGGED, Director
Office of Planning
P. O. Box 2359
Honolulu, Hawaii 96804-2359

CERT. DAVID W. BLANE, Director of Planning
Planning Department, County of Maui
250 South High Street
Wailuku, Hawaii 96793

CERT. JEFFREY SCHMIDT, ESQ.
Corporation Counsel
Office of the Corporation Counsel
County of Maui
200 South High Street
Wailuku, Hawaii 96793

CERT. B. MARTIN LUNA, ESQ., Attorney for Petitioner
Carlsmith Ball Wichman Case & Ichiki
One Main Plaza, Suite 400
2200 Main Street
Wailuku, Hawaii 96793-1086

MARK SHEEHAN, Representing Intervenor
CERT. President, Maui Tomorrow
P. O. Box 429
Makawao, Hawaii 96768

DATED: Honolulu, Hawaii, this 1st day of May 1998.

ESTHER UEDA
Executive Officer

A97-722/Maui Electric Company

SENDER:
- 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:
David W. Blane
Director of Planning
Maui County Planning Dept.
250 South High Street
Wailuku, HI 96793

4a. Article Number
Z 445 897 911

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

7. Date of Delivery
5-4-98

5. Received By: *(Print Name)*

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

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

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

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

Z 445 897 911

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

Sent to: David W. Blane	
Street & Number: 250 South High Street	
Post Office, State, & ZIP Code: Wailuku 96793	
Postage	$ 1.70
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	$ 4.15
Postmark or Date 1998	

HONOLULU DOWNTOWN STA USPS

PS Form **3800**, April 1995

A97-722/Maui Electric Company

Is your RETURN ADDRESS completed on the reverse side?

SENDER: A97-722/Maui Electric Company

- 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.
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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
Z 445 897 912

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

7. Date of Delivery
5-4

5. Received By: *(Print Name)*

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

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

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

Thank you for using Return Receipt Service.

Z 445 897 912

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 96793	
Postage	$ 1.70
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	$ 4.15
Postmark or Date	

HONOLULU STA HI 1990 USPS

PS Form **3800**, April 1995

A97-722/Maui Electric Company

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SENDER: A97-722/Maui Electric Company

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

Consult postmaster for fee.

3. Article Addressed to:

B. Martin Luna, Esq.
Carlsmith Ball Wichman
Case & Ichiki
One Main Plaza, Suite 400
2200 Main Street
Wailuku, HI 96793-1086

4a. Article Number
Z 445 897 913

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

7. Date of Delivery 5/4/98

5. Received By: *(Print Name)*

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

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

Thank you for using Return Receipt Service.

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

Z 445 897 913

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 St., Ste 400	
Post Office, State, & ZIP Code: Wailuku 96793-1086	
Postage	$ 1.70
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	$ 4.15
Postmark or Date	HUNTINGTON STA MAY 1 1998 USPS

PS Form **3800**, April 1995

A97-722/Maui Electric Company

Is your RETURN ADDRESS completed on the reverse side?

SENDER: A97-722/Maui Electric Company

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- 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:

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

CHERYL FERNANDEZ

4a. Article Number

Z 445 897 914

4b. Service Type

☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

MAKAWAO HI MAY 4 1998 US 96768 1998

7. Date of Delivery

5. Received By: *(Print Name)*

Cheryl Fernandez

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.

Z 445 897 914

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to Mark Sheehan	
Street & Number P. O. Box 429	
Post Office, State, & ZIP Code Makawao 96768	
Postage	$ 1.70
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	$ 4.15
Postmark or Date	

HONOLULU RI DOWNTOWN STA MAY 1 1998 USPS

PS Form **3800**, April 1995

A97-722/Maui Electric Company

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI'I

In the Matter of the Petition of MAUI ELECTRIC COMPANY, LIMITED, a Hawai'i corporation 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, Hawai'i, TMK 3-8-03: 23 and 24	DOCKET NO. A97-722 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

This is to certify that this is a true and correct copy of the document on file in the office of the State Land Use Commission, Honolulu, Hawaii.

MAY 01 1998 by
Date Executive Officer

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

LAND USE COMMISSION
STATE OF HAWAII
MAY 1 11 04 AM '98

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI'I

In the Matter of the Petition of MAUI ELECTRIC COMPANY, LIMITED, a Hawai'i corporation 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, Hawai'i, TMK 3-8-03: 23 and 24	DOCKET NO. A97-722 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 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

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 filed by Maui Electric Company, Limited, a Hawai'i corporation ("Petitioner"), came on for hearing before the Land Use Commission ("Commission") on April 23, 1998, in Waikapu, Maui, Hawai'i, with all the parties listed in the minutes of the meeting being present.

The Commission, having duly considered the arguments presented by the parties in this proceeding, and the records and files herein, and good cause existing therefrom,

HEREBY ORDERS that 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 filed by Petitioner be DENIED.

Dated: Honolulu, Hawai'i, May 1, 1998.

LAND USE COMMISSION
STATE OF HAWAI'I

By Rupert K. Chun
RUPERT K. CHUN
Chairperson and Commissioner

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI'I

In the Matter of the Petition of MAUI ELECTRIC COMPANY, LIMITED, a Hawai'i corporation 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, Hawai'i, TMK 3-8-03: 23 and 24	DOCKET NO. A97-722 CERTIFICATE OF SERVICE

CERTIFICATE OF SERVICE

I hereby certify that a copy of the 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 was served upon the following by either hand delivery or depositing the same in the U. S. Postal Service by certified mail:

DEL. RICK EGGED, Director
Office of Planning
P. O. Box 2359
Honolulu, Hawaii 96804-2359

CERT. DAVID W. BLANE, Director of Planning
Planning Department, County of Maui
250 South High Street
Wailuku, Hawaii 96793

CERT. JEFFREY SCHMIDT, ESQ.
Corporation Counsel
Office of the Corporation Counsel
County of Maui
200 South High Street
Wailuku, Hawaii 96793

B. MARTIN LUNA, ESQ., Attorney for Petitioner
CERT. Carlsmith Ball Wichman Case & Ichiki
One Main Plaza, Suite 400
2200 Main Street
Wailuku, Hawaii 96793-1086

MARK SHEEHAN, Representing Intervenor
CERT. President, Maui Tomorrow
P. O. Box 429
Makawao, Hawaii 96768

DATED: Honolulu, Hawaii, this 1st day of May 1998.

ESTHER UEDA
Executive Officer

A97-722/Maui Electric Company

SENDER:

- 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:

David W. Blane
Director of Planning
Maui County Planning Dept.
250 South High Street
Wailuku, HI 96793

4a. Article Number

Z 445 897 911

4b. Service Type

☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery

5-4-98

5. Received By: *(Print Name)*

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

6. Signature: *(Addressee or Agent)*

X Jessie Marrigue

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

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

Z 445 897 911

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

Sent to David W. Blane	
Street & Number 250 South High Street	
Post Office, State, & ZIP Code Wailuku 96793	
Postage	$ 1.70
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	$ 4.15
Postmark or Date	MAY 1 1998

HONOLULU HI DOWNTOWN STA
USPS

PS Form **3800,** April 1995

A97-722/Maui Electric Company

SENDER: A97-722/Maui Electric Company

- Complete items 1 and/or 2 for additional services.
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Jeffrey Schmidt, Esq.
Corporation Counsel
County of Maui
200 South High Street
Wailuku, HI 96793

4a. Article Number
Z 445 897 912

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

7. Date of Delivery
5/4

5. Received By: *(Print Name)*

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

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

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

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

Z 445 897 912

US Postal Service
Receipt for Certified Mail
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Sent to Jeffrey Schmidt, Esq.	
Street & Number 200 South High Street	
Post Office, State, & ZIP Code Wailuku 96793	
Postage	$ 1.70
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	$ 4.15
Postmark or Date	

HONOLULU DOWNTOWN STA MAY 1 1998 USPS

PS Form **3800**, April 1995

A97-722/Maui Electric Company

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B. Martin Luna, Esq.
Carlsmith Ball Wichman
Case & Ichiki
One Main Plaza, Suite 400
2200 Main Street
Wailuku, HI 96793-1086

4a. Article Number
Z 445 897 913

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

7. Date of Delivery 5/4/98

5. Received By: *(Print Name)*

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.

Z 445 897 913

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 St., Ste 400	
Post Office, State, & ZIP Code: Wailuku 96793-1086	
Postage	$ 1.70
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	$ 4.15
Postmark or Date	

HONOLULU PM DOWNTOWN STA MAY 1 1998 USPS

PS Form **3800**, April 1995

A97-722/Maui Electric Company

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2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

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

CHERYL FERNANDEZ

4a. Article Number

Z 445 897 914

4b. Service Type

☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☒ Return Receipt for Merchandise ☐ COD

MAKAWAO HI
MAY 4 1998
USPS 96768 1998

7. Date of Delivery

5. Received By: *(Print Name)*

Cheryl Fernandez

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.

Z 445 897 914

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to Mark Sheehan	
Street & Number P. O. Box 429	
Post Office, State, & ZIP Code Makawao 96768	
Postage	$ 1.70
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	$ 4.15
Postmark or Date	

HONOLULU HI DOWNTOWN STA
MAY 1 1998
USPS

PS Form **3800**, April 1995

A97-722/Maui Electric Company

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI'I

In the Matter of the Petition of MAUI ELECTRIC COMPANY, LIMITED, a Hawai'i corporation 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, Hawai'i, TMK 3-8-03: 23 and 24	DOCKET NO. A97-722 ORDER DENYING APPLICANT'S MOTION IN LIMINE TO PRECLUDE ADMISSION OF MAUI TOMORROW'S EXHIBITS 2, 3 & 12

This is to certify that this is a true and correct copy of the document on file in the office of the State Land Use Commission, Honolulu, Hawaii.

MAY 0 1 1998 by
Date Executive Officer

ORDER DENYING APPLICANT'S MOTION IN LIMINE TO PRECLUDE ADMISSION OF MAUI TOMORROW'S EXHIBITS 2, 3 & 12

LAND USE COMMISSION
STATE OF HAWAII
MAY 1 11 04 AM '98

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI'I

In the Matter of the Petition of MAUI ELECTRIC COMPANY, LIMITED, a Hawai'i corporation 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, Hawai'i, TMK 3-8-03: 23 and 24	DOCKET NO. A97-722 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 TO PRECLUDE ADMISSION OF MAUI TOMORROW'S EXHIBITS 2, 3 & 12

The Applicant's Motion in Limine To Preclude Admission of Maui Tomorrow's Exhibits 2, 3 & 12 filed by Maui Electric Company, Limited, a Hawai'i corporation ("Petitioner"), came on for hearing before the Land Use Commission ("Commission") on April 23, 1998, in Waikapu, Maui, Hawai'i, with all the parties listed in the minutes of the meeting being present.

The Commission, having duly considered the arguments presented by the parties in this proceeding, and the records and files herein, and good cause existing therefrom,

HEREBY ORDERS that the Applicant's Motion in Limine To Preclude Admission of Maui Tomorrow's Exhibits 2, 3 & 12 filed by Petitioner be DENIED.

The Commission shall take quasi-judicial notice of Intervenor Maui Tomorrow's Exhibits 2, 3, and 12.

Dated: Honolulu, Hawai'i, May 1, 1998.

LAND USE COMMISSION
STATE OF HAWAI'I

By Rupert K. Chun
RUPERT K. CHUN
Chairperson and Commissioner

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI'I

In the Matter of the Petition of MAUI ELECTRIC COMPANY, LIMITED, a Hawai'i corporation 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, Hawai'i, TMK 3-8-03: 23 and 24	DOCKET NO. A97-722 CERTIFICATE OF SERVICE

CERTIFICATE OF SERVICE

I hereby certify that a copy of the Order Denying Applicant's Motion in Limine To Preclude Admission of Maui Tomorrow's Exhibits 2, 3 & 12 was served upon the following by either hand delivery or depositing the same in the U. S. Postal Service by certified mail:

DEL. RICK EGGED, Director
Office of Planning
P. O. Box 2359
Honolulu, Hawaii 96804-2359

CERT. DAVID W. BLANE, Director of Planning
Planning Department, County of Maui
250 South High Street
Wailuku, Hawaii 96793

CERT. JEFFREY SCHMIDT, ESQ.
Corporation Counsel
Office of the Corporation Counsel
County of Maui
200 South High Street
Wailuku, Hawaii 96793

CERT. B. MARTIN LUNA, ESQ., Attorney for Petitioner
Carlsmith Ball Wichman Case & Ichiki
One Main Plaza, Suite 400
2200 Main Street
Wailuku, Hawaii 96793-1086

MARK SHEEHAN, Representing Intervenor
CERT. President, Maui Tomorrow
P. O. Box 429
Makawao, Hawaii 96768

DATED: Honolulu, Hawaii, this 1st day of May 1998.

ESTHER UEDA
Executive Officer

A97-722/Maui Electric Company

SENDER:
- 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:
David W. Blane
Director of Planning
Maui County Planning Dept.
250 South High Street
Wailuku, HI 96793

4a. Article Number
Z 445 897 911

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

7. Date of Delivery 5-4-98

5. Received By: *(Print Name)*

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

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

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

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

Z 445 897 911

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

Sent to David W. Blane	
Street & Number 250 South High Street	
Post Office, State, & ZIP Code Wailuku 96793	
Postage	$ 1.70
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	$ 4.15
Postmark or Date 1998	

PS Form **3800**, April 1995

MAUI DOWNTOWN HI 1 MAY 1998 USPS

A97-722/Maui Electric Company

Is your RETURN ADDRESS completed on the reverse side?

SENDER: A97-722/Maui Electric Company

- 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:

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

4a. Article Number
Z 445 897 912

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

7. Date of Delivery
5-4

5. Received By: *(Print Name)*

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

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

Thank you for using Return Receipt Service.

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

---

Z 445 897 912

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 96793	
Postage	$ 1.70
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	$ 4.15
Postmark or Date	

HONOLULU DOWNTOWN STA MAY 1 1998 USPS

PS Form **3800**, April 1995

A97-722/Maui Electric Company

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SENDER: A97-722/Maui Electric Company

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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:

B. Martin Luna, Esq.
Carlsmith Ball Wichman
Case & Ichiki
One Main Plaza, Suite 400
2200 Main Street
Wailuku, HI 96793-1086

4a. Article Number
Z 445 897 913

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

7. Date of Delivery 5/4/98

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.

Z 445 897 913

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 St., Ste 400	
Post Office, State, & ZIP Code Wailuku 96793-1086	
Postage	$ 1.70
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	$ 4.15
Postmark or Date	MAY 1998 HONOLULU DOWNTOWN STA USPS

PS Form **3800**, April 1995

A97-722/Maui Electric Company

Is your RETURN ADDRESS completed on the reverse side?

SENDER: A97-722/Maui Electric Company

- 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:

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

4a. Article Number
Z 445 897 914

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

7. Date of Delivery
MAY 4 1998

CHERYL FERNANDEZ
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.

Z 445 897 914

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

Sent to Mark Sheehan	
Street & Number P. O. Box 429	
Post Office, State, & ZIP Code Makawao 96768	
Postage	$ 1.70
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	$ 4.15
Postmark or Date MAY 1 1998 HAKAWAO HI USPS	

PS Form **3800**, April 1995

A97-722/Maui Electric Company

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI'I

In the Matter of the Petition of MAUI ELECTRIC COMPANY, LIMITED, a Hawai'i corporation 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, Hawai'i, TMK 3-8-03: 23 and 24	DOCKET NO. A97-722 ORDER DENYING APPLICANT'S MOTION IN LIMINE #1: TO PRECLUDE ADMISSION OF MAUI TOMORROW'S EXHIBITS 4 & 5

This is to certify that this is a true and correct copy of the document on file in the office of the State Land Use Commission, Honolulu, Hawaii.

MAY 0 1 1998 by
Date Executive Officer

ORDER DENYING APPLICANT'S MOTION IN LIMINE #1:
TO PRECLUDE ADMISSION OF MAUI TOMORROW'S EXHIBITS 4 & 5

LAND USE COMMISSION
STATE OF HAWAII
MAY 1 11 05 AM '98

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI'I

In the Matter of the Petition of MAUI ELECTRIC COMPANY, LIMITED, a Hawai'i corporation 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, Hawai'i, TMK 3-8-03: 23 and 24	DOCKET NO. A97-722 ORDER DENYING APPLICANT'S MOTION IN LIMINE #1: TO PRECLUDE ADMISSION OF MAUI TOMORROW'S EXHIBITS 4 & 5

ORDER DENYING APPLICANT'S MOTION IN LIMINE #1:
TO PRECLUDE ADMISSION OF MAUI TOMORROW'S EXHIBITS 4 & 5

The Applicant's Motion in Limine #1: To Preclude Admission of Maui Tomorrow's Exhibits 4 & 5 filed by Maui Electric Company, Limited, a Hawai'i corporation ("Petitioner"), came on for hearing before the Land Use Commission ("Commission") on April 23, 1998, in Waikapu, Maui, Hawai'i, with all the parties listed in the minutes of the meeting being present.

The Commission, having duly considered the arguments presented by the parties in this proceeding, and the records and files herein, and good cause existing therefrom,

HEREBY ORDERS that the Applicant's Motion in Limine #1: To Preclude Admission of Maui Tomorrow's Exhibits 4 & 5 filed by Petitioner be DENIED.

The Commission shall take quasi-judicial notice of Intervenor Maui Tomorrow's Exhibits 4 and 5.

Dated: Honolulu, Hawai'i, May 1, 1998.

LAND USE COMMISSION
STATE OF HAWAI'I

By Rupert K. Chun
RUPERT K. CHUN
Chairperson and Commissioner

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI'I

In the Matter of the Petition of MAUI ELECTRIC COMPANY, LIMITED, a Hawai'i corporation 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, Hawai'i, TMK 3-8-03: 23 and 24	DOCKET NO. A97-722 CERTIFICATE OF SERVICE

CERTIFICATE OF SERVICE

I hereby certify that a copy of the Order Denying Applicant's Motion in Limine #1: To Preclude Admission of Maui Tomorrow's Exhibits 4 & 5 was served upon the following by either hand delivery or depositing the same in the U. S. Postal Service by certified mail:

DEL. RICK EGGED, Director
Office of Planning
P. O. Box 2359
Honolulu, Hawaii 96804-2359

CERT. DAVID W. BLANE, Director of Planning
Planning Department, County of Maui
250 South High Street
Wailuku, Hawaii 96793

CERT. JEFFREY SCHMIDT, ESQ.
Corporation Counsel
Office of the Corporation Counsel
County of Maui
200 South High Street
Wailuku, Hawaii 96793

CERT. B. MARTIN LUNA, ESQ., Attorney for Petitioner
Carlsmith Ball Wichman Case & Ichiki
One Main Plaza, Suite 400
2200 Main Street
Wailuku, Hawaii 96793-1086

MARK SHEEHAN, Representing Intervenor
CERT. President, Maui Tomorrow
P. O. Box 429
Makawao, Hawaii 96768

DATED: Honolulu, Hawaii, this 1st day of May 1998.

ESTHER UEDA
Executive Officer

A97-722/Maui Electric Company

SENDER:
- 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.
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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:
David W. Blane
Director of Planning
Maui County Planning Dept.
250 South High Street
Wailuku, HI 96793

4a. Article Number
Z 445 897 911

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

7. Date of Delivery
5-4-98

5. Received By: *(Print Name)*

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

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

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

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

Z 445 897 911

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

Sent to David W. Blane	
Street & Number 250 South High Street	
Post Office, State, & ZIP Code Wailuku 96793	
Postage	$ 1.70
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	$ 4.15
Postmark or Date 1998	

HONOLULU DOWNTOWN HI MAY 1 USPS

PS Form **3800**, April 1995

A97-722/Maui Electric Company

SENDER: A97-722/Maui Electric Company

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2. ☐ Restricted Delivery

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3. Article Addressed to:

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

4a. Article Number
Z 445 897 912

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

7. Date of Delivery
5/4

5. Received By: *(Print Name)*

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

6. Signature: *(Addressee or Agent)*
X [signature]

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

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

Z 445 897 912

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 96793	
Postage	$ 1.70
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	$ 4.15
Postmark or Date	

HONOLULU HI MAY 1 1998 DOWNTOWN STA USPS

PS Form **3800**, April 1995

A97-722/Maui Electric Company

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SENDER: A97-722/Maui Electric Company

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B. Martin Luna, Esq.
Carlsmith Ball Wichman
Case & Ichiki
One Main Plaza, Suite 400
2200 Main Street
Wailuku, HI 96793-1086

4a. Article Number
Z 445 897 913

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

7. Date of Delivery 5/4/98

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.

Z 445 897 913

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 St., Ste 400	
Post Office, State, & ZIP Code Wailuku 96793-1086	
Postage	$ 1.70
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	$ 4.15
Postmark or Date	MAY 1998 HONOLULU DOWNTOWN STA USPS

PS Form 3800, April 1995

A97-722/Maui Electric Company

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SENDER: A97-722/Maui Electric Company

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

4a. Article Number
Z 445 897 914

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

7. Date of Delivery
MAY 1 1998

CHERYL FERNANDEZ

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.

Z 445 897 914

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

Sent to Mark Sheehan	
Street & Number P. O. Box 429	
Post Office, State, & ZIP Code Makawao 96768	
Postage	$ 1.70
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, & Address of Addressee	
TOTAL Postage & Fees	$ 4.15
Postmark or Date	MAY 1 1998 MAKAWAO HI USPS

PS Form **3800**, April 1995

A97-722/Maui Electric Company

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI'I

In the Matter of the Petition of MAUI ELECTRIC COMPANY, LIMITED, a Hawai'i corporation 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, Hawai'i, TMK 3-8-03: 23 and 24	DOCKET NO. A97-722 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 IMPACTS

This is to certify that this is a true and correct copy of the document on file in the office of the State Land Use Commission, Honolulu, Hawaii.

MAY 0 1 1998 by
Date Executive Officer

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 IMPACTS

LAND USE COMMISSION
STATE OF HAWAII
MAY 1 11 05 AM '98

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI'I

In the Matter of the Petition of MAUI ELECTRIC COMPANY, LIMITED, a Hawai'i corporation 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, Hawai'i, TMK 3-8-03: 23 and 24	DOCKET NO. A97-722 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 IMPACTS

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 IMPACTS

On April 24, 1998, Petitioner Maui Electric Company, Limited, a Hawai'i corporation, orally moved to withdraw its Applicant's Motion in Limine #2: To Preclude Testimony of Roy Smith and Erik Frye as Experts in Air Quality and Air Impacts.

The Land Use Commission, having duly considered Petitioner's oral motion at its meeting on April 24, 1998, at Waikapu, Maui, Hawai'i, and there being no objections from the other parties in this proceeding,

HEREBY ORDERS that Petitioner's oral motion to withdraw its Applicant's Motion in Limine #2: To Preclude Testimony of Roy Smith and Erik Frye as Experts in Air Quality and Air Impacts be GRANTED.

Dated: Honolulu, Hawai'i, May 1, 1998.

LAND USE COMMISSION
STATE OF HAWAI'I

By Rupert K. Chun
RUPERT K. CHUN
Chairperson and Commissioner

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI'I

In the Matter of the Petition of MAUI ELECTRIC COMPANY, LIMITED, a Hawai'i corporation 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, Hawai'i, TMK 3-8-03: 23 and 24	DOCKET NO. A97-722 CERTIFICATE OF SERVICE

CERTIFICATE OF SERVICE

I hereby certify that a copy of the 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 Impacts was served upon the following by either hand delivery or depositing the same in the U. S. Postal Service by certified mail:

DEL. RICK EGGED, Director
Office of Planning
P. O. Box 2359
Honolulu, Hawaii 96804-2359

CERT. DAVID W. BLANE, Director of Planning
Planning Department, County of Maui
250 South High Street
Wailuku, Hawaii 96793

CERT. JEFFREY SCHMIDT, ESQ.
Corporation Counsel
Office of the Corporation Counsel
County of Maui
200 South High Street
Wailuku, Hawaii 96793

CERT. B. MARTIN LUNA, ESQ., Attorney for Petitioner
Carlsmith Ball Wichman Case & Ichiki
One Main Plaza, Suite 400
2200 Main Street
Wailuku, Hawaii 96793-1086

MARK SHEEHAN, Representing Intervenor
CERT. President, Maui Tomorrow
P. O. Box 429
Makawao, Hawaii 96768

DATED: Honolulu, Hawaii, this 1st day of May 1998.

ESTHER UEDA
Executive Officer

A97-722/Maui Electric Company

SENDER:
- 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:
David W. Blane
Director of Planning
Maui County Planning Dept.
250 South High Street
Wailuku, HI 96793

4a. Article Number
Z 445 897 911

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

7. Date of Delivery
5-4-98

5. Received By: *(Print Name)*

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

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

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

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

Z 445 897 911

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

Sent to David W. Blane	
Street & Number 250 South High Street	
Post Office, State, & ZIP Code Wailuku 96793	
Postage	$ 1.70
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	4.15
Postmark or Date 1998	

HONOLULU DOWNTOWN HI MAY 1 USPS

PS Form **3800**, April 1995

A97-722/Maui Electric Company

Is your RETURN ADDRESS completed on the reverse side?

SENDER: A97-722/Maui Electric Company

- Complete items 1 and/or 2 for additional services.
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3. Article Addressed to:

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

4a. Article Number
Z 445 897 912

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

7. Date of Delivery
5-4

5. Received By: *(Print Name)*

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

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

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

Thank you for using Return Receipt Service.

Z 445 897 912

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 96793	
Postage	$ 1.70
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	$ 4.15
Postmark or Date	

HONOLULU HI MAY 1998 USPS

PS Form **3800**, April 1995

A97-722/Maui Electric Company

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2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

B. Martin Luna, Esq.
Carlsmith Ball Wichman
Case & Ichiki
One Main Plaza, Suite 400
2200 Main Street
Wailuku, HI 96793-1086

4a. Article Number
Z 445 897 913

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

7. Date of Delivery 5/4/98

5. Received By: *(Print Name)*

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.

Z 445 897 913

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 St., Ste 400	
Post Office, State, & ZIP Code Wailuku 96793-1086	
Postage	$ 1.70
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	$ 4.15
Postmark or Date	HONOLULU HI DOWNTOWN STA MAY 1 1998 USPS

PS Form 3800, April 1995

A97-722/Maui Electric Company

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

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3. Article Addressed to:

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

4a. Article Number
Z 445 897 914

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

7. Date of Delivery
MAY 4 1998

CHERYL FERNANDEZ

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

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US Postal Service
Receipt for Certified Mail
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Sent to Mark Sheehan	
Street & Number P. O. Box 429	
Post Office, State, & ZIP Code Makawao 96768	
Postage	$ 1.70
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Restricted Delivery Fee	
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Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$ 4.15
Postmark or Date	

HAWAII MAY 1 1998 USPS

PS Form **3800**, April 1995

A97-722/Maui Electric Company

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI'I

In the Matter of the Petition of MAUI ELECTRIC COMPANY, LIMITED, a Hawai'i corporation 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, Hawai'i, TMK 3-8-03: 23 and 24	DOCKET NO. A97-722 ORDER GRANTING ORAL MOTION TO WITHDRAW APPLICANT'S MOTION IN LIMINE #3: TO PRECLUDE TESTIMONY OF STEVEN MOSER AS AN EXPERT IN AIR QUALITY AND AIR IMPACTS

This is to certify that this is a true and correct copy of the document on file in the office of the State Land Use Commission, Honolulu, Hawaii.

MAY 0 1 1998 by
Date Executive Officer

ORDER GRANTING APPLICANT'S MOTION IN LIMINE #3: TO PRECLUDE TESTIMONY OF STEVEN MOSER AS AN EXPERT IN AIR QUALITY AND AIR IMPACTS

LAND USE COMMISSION
STATE OF HAWAII
MAY 1 11 05 AM '98

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI'I

In the Matter of the Petition of MAUI ELECTRIC COMPANY, LIMITED, a Hawai'i corporation 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, Hawai'i, TMK 3-8-03: 23 and 24	DOCKET NO. A97-722 ORDER GRANTING ORAL MOTION TO WITHDRAW APPLICANT'S MOTION IN LIMINE #3: TO PRECLUDE TESTIMONY OF STEVEN MOSER AS AN EXPERT IN AIR QUALITY AND AIR IMPACTS

ORDER GRANTING APPLICANT'S MOTION IN LIMINE #3: TO PRECLUDE TESTIMONY OF STEVEN MOSER AS AN EXPERT IN AIR QUALITY AND AIR IMPACTS

The Applicant's Motion in Limine #3: To Preclude Testimony of Steven Moser as an Expert in Air Quality and Air Impacts filed by Maui Electric Company, Limited, a Hawai'i corporation ("Petitioner"), came on for hearing before the Land Use Commission ("Commission") on April 23, 1998, in Waikapu, Maui, Hawai'i, with all the parties listed in the minutes of the meeting being present.

The Commission, having duly considered the arguments presented by the parties in this proceeding, and the records and files herein, and good cause existing therefrom,

HEREBY ORDERS that the Applicant's Motion in Limine #3: To Preclude Testimony of Steven Moser as an Expert in Air Quality and Air Impacts filed by Petitioner be GRANTED.

Dated: Honolulu, Hawai'i, May 1, 1998.

LAND USE COMMISSION
STATE OF HAWAI'I

By Rupert K. Chun
RUPERT K. CHUN
Chairperson and Commissioner

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, a Hawai'i 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, Hawai'i, TMK 3-8-03: 23 and 24	)	

CERTIFICATE OF SERVICE

I hereby certify that a copy of the Order Granting Oral Motion to Withdraw Applicant's Motion in Limine #3: To Preclude Testimony of Steven Moser as an Expert in Air Quality and Air Impacts was served upon the following by either hand delivery or depositing the same in the U. S. Postal Service by certified mail:

DEL. RICK EGGED, Director
Office of Planning
P. O. Box 2359
Honolulu, Hawaii 96804-2359

CERT. DAVID W. BLANE, Director of Planning
Planning Department, County of Maui
250 South High Street
Wailuku, Hawaii 96793

CERT. JEFFREY SCHMIDT, ESQ.
Corporation Counsel
Office of the Corporation Counsel
County of Maui
200 South High Street
Wailuku, Hawaii 96793

CERT. B. MARTIN LUNA, ESQ., Attorney for Petitioner
Carlsmith Ball Wichman Case & Ichiki
One Main Plaza, Suite 400
2200 Main Street
Wailuku, Hawaii 96793-1086

MARK SHEEHAN, Representing Intervenor
CERT. President, Maui Tomorrow
P. O. Box 429
Makawao, Hawaii 96768

DATED: Honolulu, Hawaii, this 1st day of May 1998.

ESTHER UEDA
Executive Officer

A97-722/Maui Electric Company

SENDER:
- 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:
David W. Blane
Director of Planning
Maui County Planning Dept.
250 South High Street
Wailuku, HI 96793

4a. Article Number
Z 445 897 911

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

7. Date of Delivery
5-4-98

5. Received By: *(Print Name)*

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

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

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

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

Z 445 897 911

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

Sent to David W. Blane	
Street & Number 250 South High Street	
Post Office, State, & ZIP Code Wailuku 96793	
Postage	$ 1.70
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	$ 4.15
Postmark or Date 1998	

HONOLULU DOWNTOWN STA MAY 1 1998 USPS

PS Form **3800**, April 1995

A97-722/Maui Electric Company

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Corporation Counsel
County of Maui
200 South High Street
Wailuku, HI 96793

4a. Article Number
Z 445 897 912

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

7. Date of Delivery
54

5. Received By: *(Print Name)*

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

6. Signature: *(Addressee or Agent)*
X [signature]

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

Thank you for using Return Receipt Service.

Z 445 897 912

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 96793	
Postage	$ 1.70
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	$ 4.15
Postmark or Date	

HONOLULU-WILLOWBROOK STA MAY 1 1998 USPS

PS Form **3800**, April 1995

A97-722/Maui Electric Company

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Carlsmith Ball Wichman
Case & Ichiki
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☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery 5/4/98

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.

Z 445 897 913

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 St., Ste 400	
Post Office, State, & ZIP Code Wailuku 96793-1086	
Postage	$ 1.70
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	$ 4.15
Postmark or Date MAY 1 1998 HONOLULU DOWNTOWN STA USPS	

PS Form **3800**, April 1995

A97-722/Maui Electric Company

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

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☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☒ Return Receipt for Merchandise ☐ COD

7. Date of Delivery
MAY 1 1998

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

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

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

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

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Street & Number P. O. Box 429	
Post Office, State, & ZIP Code Makawao 96768	
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Postmark or Date MAY 1 1998	

PS Form **3800**, April 1995

A97-722/Maui Electric Company

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI'I

In the Matter of the Petition of MAUI ELECTRIC COMPANY, LIMITED, a Hawai'i corporation 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, Hawai'i, TMK 3-8-03: 23 and 24	DOCKET NO. A97-722 ORDER GRANTING ORAL MOTION TO WITHDRAW APPLICANT'S MOTION IN LIMINE #4: TO PRECLUDE TESTIMONY OF JAMES WILLIAMSON AS AN EXPERT

This is to certify that this is a true and correct copy of the document on file in the office of the State Land Use Commission, Honolulu, Hawaii.

MAY 01 1998 by
Date Executive Officer

ORDER GRANTING ORAL MOTION TO WITHDRAW APPLICANT'S MOTION IN LIMINE #4: TO PRECLUDE TESTIMONY OF JAMES WILLIAMSON AS AN EXPERT

LAND USE COMMISSION
STATE OF HAWAII
MAY 1 11 05 AM '98

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI'I

In the Matter of the Petition of MAUI ELECTRIC COMPANY, LIMITED, a Hawai'i corporation 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, Hawai'i, TMK 3-8-03: 23 and 24	DOCKET NO. A97-722 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 #4: TO PRECLUDE TESTIMONY OF JAMES WILLIAMSON AS AN EXPERT

On April 24, 1998, Petitioner Maui Electric Company, Limited, a Hawai'i corporation, orally moved to withdraw its Applicant's Motion in Limine #4: To Preclude Testimony of James Williamson as an Expert.

The Land Use Commission, having duly considered Petitioner's oral motion at its meeting on April 24, 1998, at Waikapu, Maui, Hawai'i, and there being no objections from the other parties in this proceeding,

HEREBY ORDERS that Petitioner's oral motion to withdraw its Applicant's Motion in Limine #4: To Preclude Testimony of James Williamson as an Expert be GRANTED.

Dated: Honolulu, Hawai'i, May 1, 1998.

LAND USE COMMISSION
STATE OF HAWAI'I

By Rupert K. Chun
RUPERT K. CHUN
Chairperson and Commissioner

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI'I

In the Matter of the Petition of MAUI ELECTRIC COMPANY, LIMITED, a Hawai'i corporation 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, Hawai'i, TMK 3-8-03: 23 and 24	DOCKET NO. A97-722 CERTIFICATE OF SERVICE

CERTIFICATE OF SERVICE

I hereby certify that a copy of the Order Granting Oral Motion to Withdraw Applicant's Motion in Limine #4: To Preclude Testimony of James Williamson as an Expert was served upon the following by either hand delivery or depositing the same in the U. S. Postal Service by certified mail:

DEL. RICK EGGED, Director
Office of Planning
P. O. Box 2359
Honolulu, Hawaii 96804-2359

CERT. DAVID W. BLANE, Director of Planning
Planning Department, County of Maui
250 South High Street
Wailuku, Hawaii 96793

CERT. JEFFREY SCHMIDT, ESQ.
Corporation Counsel
Office of the Corporation Counsel
County of Maui
200 South High Street
Wailuku, Hawaii 96793

CERT. B. MARTIN LUNA, ESQ., Attorney for Petitioner
Carlsmith Ball Wichman Case & Ichiki
One Main Plaza, Suite 400
2200 Main Street
Wailuku, Hawaii 96793-1086

MARK SHEEHAN, Representing Intervenor
CERT. President, Maui Tomorrow
P. O. Box 429
Makawao, Hawaii 96768

DATED: Honolulu, Hawaii, this 1st day of May 1998.

ESTHER UEDA
Executive Officer

A97-722/Maui Electric Company

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5-4-98

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

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Receipt for Certified Mail
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Do not use for International Mail *(See reverse)*

Sent to: David W. Blane	
Street & Number: 250 South High Street	
Post Office, State, & ZIP Code: Wailuku 96793	
Postage	$ 1.70
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	$ 4.15
Postmark or Date	MAY 1 1998

HONOLULU DOWNTOWN HI USPS

PS Form **3800**, April 1995

A97-722/Maui Electric Company

SENDER: A97-722/Maui Electric Company

- 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
Z 445 897 912

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

7. Date of Delivery
5-4

5. Received By: *(Print Name)*

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

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

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

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

---

Z 445 897 912

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 96793	
Postage	$ 1.70
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	$ 4.15
Postmark or Date	MAY 1 1998 HONOLULU DOWNTOWN STA HI USPS

PS Form **3800**, April 1995

A97-722/Maui Electric Company

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

Consult postmaster for fee.

3. Article Addressed to:

B. Martin Luna, Esq.
Carlsmith Ball Wichman
Case & Ichiki
One Main Plaza, Suite 400
2200 Main Street
Wailuku, HI 96793-1086

4a. Article Number
Z 445 897 913

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

7. Date of Delivery 5/4/98

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

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

Z 445 897 913

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 St., Ste 400	
Post Office, State, & ZIP Code: Wailuku 96793-1086	
Postage	$ 1.70
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	$ 4.15
Postmark or Date	MAY 1998 HONOLULU DOWNTOWN STA USPS

PS Form 3800, April 1995

A97-722/Maui Electric Company

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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:

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

4a. Article Number

Z 445 897 914

4b. Service Type

☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☒ Return Receipt for Merchandise ☐ COD

7. Date of Delivery

MAKAWAO HI MAY 4 1998

CHERYL FERNANDEZ

5. Received By: *(Print Name)*

Cheryl Fernandez

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.

Z 445 897 914

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to Mark Sheehan	
Street & Number P. O. Box 429	
Post Office, State, & ZIP Code Makawao 96768	
Postage	$ 1.70
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	$ 4.15
Postmark or Date	

HONOLULU PO DOWNTOWN STA MAY 1 1998 USPS

PS Form **3800**, April 1995

A97-722/Maui Electric Company

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI'I

In the Matter of the Petition of MAUI ELECTRIC COMPANY, LIMITED, a Hawai'i corporation 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, Hawai'i, TMK 3-8-03: 23 and 24	DOCKET NO. A97-722 ORDER GRANTING ORAL MOTION TO WITHDRAW APPLICANT'S MOTION IN LIMINE #5: TO PRECLUDE TESTIMONY OF DICK MAYER AND IAN CHAN-HODGES AS EXPERTS

This is to certify that this is a true and correct copy of the document on file in the office of the State Land Use Commission, Honolulu, Hawaii.

MAY 0 1 1998 by
Date Executive Officer

ORDER GRANTING ORAL MOTION TO WITHDRAW APPLICANT'S MOTION IN LIMINE #5: TO PRECLUDE TESTIMONY OF DICK MAYER AND IAN CHAN-HODGES AS EXPERTS

LAND USE COMMISSION
STATE OF HAWAII
MAY 1 11 05 AM '98

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI'I

In the Matter of the Petition of MAUI ELECTRIC COMPANY, LIMITED, a Hawai'i corporation 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, Hawai'i, TMK 3-8-03: 23 and 24	DOCKET NO. A97-722 ORDER GRANTING ORAL MOTION TO WITHDRAW APPLICANT'S MOTION IN LIMINE #5: TO PRECLUDE TESTIMONY OF DICK MAYER AND IAN CHAN-HODGES AS EXPERTS

ORDER GRANTING ORAL MOTION TO WITHDRAW APPLICANT'S MOTION IN LIMINE #5: TO PRECLUDE TESTIMONY OF DICK MAYER AND IAN CHAN-HODGES AS EXPERTS

On April 24, 1998, Petitioner Maui Electric Company, Limited, a Hawai'i corporation, orally moved to withdraw its Applicant's Motion in Limine #5: To Preclude Testimony of Dick Mayer and Ian Chan-Hodges as Experts.

The Land Use Commission, having duly considered Petitioner's oral motion at its meeting on April 24, 1998, at Waikapu, Maui, Hawai'i, and there being no objections from the other parties in this proceeding,

HEREBY ORDERS that Petitioner's oral motion to withdraw its Applicant's Motion in Limine #5: To Preclude Testimony of Dick Mayer and Ian Chan-Hodges as Experts be GRANTED.

Dated: Honolulu, Hawai'i, May 1, 1998.

LAND USE COMMISSION
STATE OF HAWAI'I

By Rupert K. Chun
RUPERT K. CHUN
Chairperson and Commissioner

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI'I

In the Matter of the Petition of MAUI ELECTRIC COMPANY, LIMITED, a Hawai'i corporation 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, Hawai'i, TMK 3-8-03: 23 and 24	)	DOCKET NO. A97-722 CERTIFICATE OF SERVICE

CERTIFICATE OF SERVICE

I hereby certify that a copy of the Order Granting Oral Motion to Withdraw Applicant's Motion in Limine #5: To Preclude Testimony of Dick Mayer and Ian Chan-Hodges as Experts was served upon the following by either hand delivery or depositing the same in the U. S. Postal Service by certified mail:

DEL. RICK EGGED, Director
Office of Planning
P. O. Box 2359
Honolulu, Hawaii 96804-2359

CERT. DAVID W. BLANE, Director of Planning
Planning Department, County of Maui
250 South High Street
Wailuku, Hawaii 96793

CERT. JEFFREY SCHMIDT, ESQ.
Corporation Counsel
Office of the Corporation Counsel
County of Maui
200 South High Street
Wailuku, Hawaii 96793

CERT. B. MARTIN LUNA, ESQ., Attorney for Petitioner
Carlsmith Ball Wichman Case & Ichiki
One Main Plaza, Suite 400
2200 Main Street
Wailuku, Hawaii 96793-1086

MARK SHEEHAN, Representing Intervenor
CERT. President, Maui Tomorrow
P. O. Box 429
Makawao, Hawaii 96768

DATED: Honolulu, Hawaii, this 1st day of May 1998.

ESTHER UEDA
Executive Officer

A97-722/Maui Electric Company

SENDER:
- 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.
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- 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:
David W. Blane
Director of Planning
Maui County Planning Dept.
250 South High Street
Wailuku, HI 96793

4a. Article Number
Z 445 897 911

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

7. Date of Delivery
5-4-98

5. Received By: *(Print Name)*

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

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

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

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

Z 445 897 911

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

Sent to David W. Blane	
Street & Number 250 South High Street	
Post Office, State, & ZIP Code Wailuku 96793	
Postage	$ 1.70
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	$ 4.15
Postmark or Date 1998	

PS Form **3800**, April 1995

HONOLULU DOWNTOWN HI MAY 1 1998 USPS

A97-722/Maui Electric Company

Is your RETURN ADDRESS completed on the reverse side?

SENDER: A97-722/Maui Electric Company

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Corporation Counsel
County of Maui
200 South High Street
Wailuku, HI 96793

4a. Article Number
Z 445 897 912

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

7. Date of Delivery
54

5. Received By: *(Print Name)*

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

6. Signature: *(Addressee or Agent)*
X [signature]

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

Thank you for using Return Receipt Service.

Z 445 897 912

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 96793	
Postage	$ 1.70
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	$ 4.15
Postmark or Date	

HONOLULU MIDDLETOWN STA
MAY 1 1998
USPS

PS Form **3800**, April 1995

A97-722/Maui Electric Company

Is your RETURN ADDRESS completed on the reverse side?

SENDER: A97-722/Maui Electric Company

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- Complete items 3, 4a, and 4b.
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Consult postmaster for fee.

3. Article Addressed to:

B. Martin Luna, Esq.
Carlsmith Ball Wichman
Case & Ichiki
One Main Plaza, Suite 400
2200 Main Street
Wailuku, HI 96793-1086

4a. Article Number
Z 445 897 913

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

7. Date of Delivery 5/4/98

5. Received By: *(Print Name)*

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.

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

Sent to B. Martin Luna, Esq.	
Street & Number 2200 Main St., Ste 400	
Post Office, State, & ZIP Code Wailuku 96793-1086	
Postage	$ 1.70
Certified Fee	1.35
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	1.10
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TOTAL Postage & Fees	$ 4.15
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PS Form 3800, April 1995

A97-722/Maui Electric Company

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

4a. Article Number
Z 445 897 914

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

7. Date of Delivery
MAKAWAO HAWAII MAY 1 1998

CHERYL FERNANDEZ

5. Received By: *(Print Name)*

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

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

Thank you for using Return Receipt Service.

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

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Z 445 897 914

US Postal Service
Receipt for Certified Mail
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Sent to: Mark Sheehan	
Street & Number: P. O. Box 429	
Post Office, State, & ZIP Code: Makawao 96768	
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Certified Fee	1.35
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Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$ 4.15
Postmark or Date	MAY 1 1998 MAKAWAO HAWAII USPS

PS Form **3800**, April 1995

A97-722/Maui Electric Company

CARLSMITH BALL WICHMAN CASE & ICHIKI

ATTORNEYS AT LAW

A PARTNERSHIP INCLUDING LAW CORPORATIONS

ONE MAIN PLAZA

SUITE 400, 2200 MAIN STREET

POST OFFICE BOX 1086

WAILUKU, MAUI, HAWAII 96793-1086

TELEPHONE (808) 242-4535

FAX (808) 244-4974

April 24, 1998

RECEIVED

APR 24 1998

State of Hawaii
LAND USE COMMISSION

Ms. Esther Ueda
State Land Use Commission
Department of Business, Economic
Development & Tourism
P. O. Box 2359
Honolulu, Hawaii 96804

Re: LUC Docket No. A97-722/Maui Electric Company, Limited

Dear Ms. Ueda:

On behalf of Maui Electric Company, Ltd. ("MECO"), I am advising the Land Use Commission that witnesses Robert Paull and Tom Schroeder who testified in this matter were doing so in their capacities as private individuals; and not as University of Hawaii professors.

Therefore, MECO requests that the LUC strike any and all references to Mr. Paull and Mr. Schroeder's positions with the University of Hawaii contained in the record, including MECO's witness lists.

Thank you very much for your consideration.

Sincerely,

B. Martin Luna

B. MARTIN LUNA

BML:mmi
5018292.1.015787-5
~~Enclosures~~

CARLSMITH BALL WICHMAN CASE & ICHIKI

ATTORNEYS AT LAW

A PARTNERSHIP INCLUDING LAW CORPORATIONS

ONE MAIN PLAZA

SUITE 400, 2200 MAIN STREET

POST OFFICE BOX 1086

WAILUKU, MAUI, HAWAII 96793-1086

TELEPHONE (808) 242-4535

FAX (808) 244-4974

April 23, 1998

Ms. Esther Ueda
State Land Use Commission
Department of Business, Economic
Development & Tourism
P. O. Box 2359
Honolulu, Hawaii 96804

RECEIVED

APR 24 1998

State of Hawaii
LAND USE COMMISSION

Re: Maui Electric Company, Ltd.

Dear Ms. Ueda:

On behalf of Maui Electric Company, Ltd. ("MECO"), I am providing the Land Use Commission an explanation of how and why Ms. Pat Howard was mentioned in these proceedings on February 26, 1998.

Enclosed herein are pages 167 to 176 of the transcript of the February 27 proceedings. These pages contain the questions by Scott Crawford to Earle Ifuku inquiring about environmental organizations which had been represented in the advisory group for MECO's Integrated Resource Plan ("IRP") in 1993 to 1995.

As indicated in said pages, Mr. Ifuku was asked to name the environmental organization, then the individuals who represented the respective organizations. To name the representatives of the Blue Ocean Preservation Society, Mr. Ifuku referred to a form that was apparently completed and submitted to MECO by said society. On said form, a copy of which is also enclosed herein, Mr. John Worthington names himself and Ms. Howard as representatives of the organization. The transcript does not indicate any further comments made by Mr. Ifuku about Ms. Howard.

Please contact me if further clarification on this matter is required.

Sincerely truly,

B. MARTIN LUNA

BML:mmi
5018254.1.015787-5
Enclosures

Page 167

criteria requires that we have enough capacity available to meet demands with a unit on maintenance and the loss, an unexpected loss of the next largest unit.

Because we are an isolated utility, our 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.

MS. CAIRNS: Thank you, Mr. Ifuku.

CHAIRMAN ING: Thank you. Questions by the state?

MS. OGATA-DEAL: The state has no questions.

CHAIRMAN ING: Thank you. Going on to intervenor.

MR. SHEEHAN: We're going to ask Scott Crawford who is the Executive Director for Maui Tomorrow to interview and cross-examine this witness.

CROSS-EXAMINATION

BY MR. CRAWFORD:

Q. Good morning, Mr. Ifuku.

A. Good morning, Mr. Crawford.

Q. Regarding the IRP process, we'll start with that, you said there were 24 people who participated in that process all together?

A. Twenty-four organizations.

Q. Twenty-four organizations. Were there participants in the IRP process who stopped attending partway through the process?

Page 168

A. I believe that would be a fair characterization. Today we probably have about 15 that are very active. I should also add though that in recognition of the amount of time and effort that it takes to be a volunteer in some of these processes, as valuable as their insights are to us, through various stages of the planning process, we also, if you will, take our show on the road and get general public input before that plan gets submitted to the commission.

Q. Can you explain in more detail what you mean by take your show on the road? How do you get more general public input?

A. We hold public meetings and public hearings -- I shouldn't call it a public hearing -- a public meeting in which we explain different aspects of the development of our plan. As time goes on and we reach milestone stages, we like to make sure we have that public input. In addition to that, I should add, in the first cycle of IRP, all of the Hawaiian Electric Utilities actually conducted surveys, telephone surveys of its customers asking a series of questions about their preferences, if you will, for types of resources, their willingness to pay for different options, et cetera.

Q. What were the results of those surveys?

A. The results of the survey sort of balanced, if you will, between those who had indicated in the survey that they were willing to pay more for cleaner more environmentally

Page 169

benign technologies. Specifically when and depending on which island you were on, geothermal wasn't all that popular with some people.

But there was also clearly an indication from certain customer groups, and particularly on Molokai, where they really felt the need to keep rates down was a very important priority for them.

Q. So you say that 50 percent, approximately 50 percent of Maui's residents would be willing to pay more for their utility costs in order to perhaps avoid building another oil-fired power plant?

A. I can't say that's a particular number offhand.

Q. Okay. But you said it was balanced between about half and half between those who would be willing to pay more?

A. There are those -- I want to say probably, subject to check, closer to about 20, 25 percent of our customers who indicated that they were willing to pay a certain amount more. And part of the line of questioning had to do with how much more are you willing to pay. Because in our evaluation, we know what the comparative costs are for the different kinds of resource strategies. And what we wanted to know was were people really willing to pay, yes, and how much more were they willing to pay to support these other objectives.

Q. Can you characterize what you mean when you use the word balance in representing that there was a balanced number

Page 170

of people who favored that?

A. I suppose balance may not have been an appropriate characterization if we're looking for percentages. All I was trying to communicate was the responsibility of the utilities to listen to what our customers were asking for was accounted for in the process.

We knew that there were issues related to the environment and society in general. That was also very important. And as a result actually of that, we embarked on a study. I had alluded to that as an externality study state-wide involving all the utilities across the State of Hawai'i and all of the groups that were interested. And it was probably a two-year process that thoroughly examined the externalities issue.

Q. What does thoroughly examined mean?

A. Well, I could put it in terms of human resources. About two years' worth of time, there must have been close to 40 participants and numerous meetings and in addition to hiring national experts to come in from various jurisdictions that have developed externalities-type studies to assist us in the process.

Q. Well, can you just explain briefly what are externalities?

A. Very simply, I suppose there are certain costs that we all recognize for the things that we do, the daily things we

Page 171

do that aren't really measured in the price of the product or service that we pay for. And that cost in general is recognized as the cost of society, and that's fundamentally the concept of externalities.

Q. In other municipalities, are you aware of percentages that they attribute to externalities in their cost evaluations and IRP evaluations?

A. No. I should add the externalities process MECO used in the first round of IRP actually did a survey of all of the utilities in the United States to evaluate what they did in terms of identifying that societal cost for the different technologies. And we know specifically that Hawai'i has a very unique environment. We have strong trade winds. We have limited land space, and we have the ocean that surrounds us. And that is very different from when you go to the mainland. What we ended up doing though however just because it was an important issue that needed to be addressed as part of the planning process, we took the highest values, if you will, that any utility across the United States placed on any of the externalities as a result of supply side resources and used those as surrogates, if you will, to what the cost would be for that same technology here on the islands and did an analysis based on the worst case, if you will.

And the findings of that analysis continued to support the integrated resource plan that the commission

Page 172

thoroughly evaluated and approved ultimately.

Q. Okay. I want to go back just a moment to -- you stated that regarding your survey, people would be willing to pay more. You stated it was particularly on the island of Molokai who were resistent to spending more and wanted to keep costs down, is that correct, wanted to keep their utility rates down?

A. Molokai, of all the islands, were the customer base in which they had indicated -- I guess I'm ranking them, if you will, about in order of islands. I think it's fair to say all of the surveys conducted on all of the islands for which we were responsible for providing electric service, all of the customers indicated that rates were very important. It enters into the planning process for us what the utility calls sometimes conflicting objectives. People want the good things, but yet they don't sometimes want to have to pay for what it takes to achieve those good things.

Q. But Molokai was the most resistent of all the islands?

A. I wouldn't say resistent. They were the ones who rated it the highest.

Q. Who were most concerned about keeping rates down?

A. That's correct.

Q. Are the residents of Molokai going to be served by the proposed Waena plan?

Page 173

A. No, they are not. And they will also not be charged for that cost as well.

Q. And they wouldn't be charged for the cost of any alternative that would be put in other than an oil-fire power plant to serve the residents of Maui island?

A. Directly I would have to say no.

Q. Back to the IRP process. You said that there were some citizens who stopped attending or groups who stopped attending because -- there were some who stopped attending?

A. That's correct.

Q. You characterized that some of them, it may be because of the intensive commitment involved in that process. Would you say that there were individuals or organizations who didn't continue their involvement because they got discouraged with Maui Electric Company's unwillingness to consider the alternatives they were suggesting?

A. I would say no.

Q. Are you certain about that? Are you certain that none of those people who stopped participating did so based on being discouraged by your unwillingness to consider their suggestions?

A. Given the process, my understanding of the process for considering everybody's input, I would have a hard time believing that that was the reason for dropping out.

Q. Did you actually ask any of the people who dropped

Page 174

out why?

A. Yes, actually we did.

Q. Did you ask all of them why?

A. We continued to mail them notices for meetings. We asked them in subsequent mailouts whether they were willing to continue to be a member and we followed those mailouts with phone calls, attempts to try to understand what it is and why it was that they were not continuing to actively participate in the process.

Q. And were there any who you weren't able to find out why they continued, why they discontinued their participation?

A. I guess I suppose there may have been.

Q. So it's possible there were people who discontinued their participation for that reason?

A. I think anything is possible, that's correct.

Q. You mentioned that the Sierra Club was represented in the IRP process as an environmental organization; is that correct?

A. That's correct.

Q. What was name of the person who was representing the Sierra Club?

A. I'm sorry, I don't have the list of members with me right now, although I'm sure I could find it among all the books that I brought with me.

Q. Well, while you're looking or someone is looking for

Page 175

that, do you know whether that person was actually representing the organization, or were they merely a member at large?

A. We tried to make it very clear that anyone who was attending and officially speaking on behalf of that organization, we adopted sort of this letterhead rule, if you will, that they put it on the particular organization's official stationery that, in fact, they were representing the organization.

We also recognized from the management of that process that while individuals may have particular official capacity representing that organization, that they also are individuals and allowed them, if you will, to take off their official hat and speak unofficially just as a member and a participant in the process. That's why we adopted that letterhead rule. So they were not bound, if you will, by the needs of the organization per se to speak up.

Q. Well, we would like to reserve the right to return to cross-examination on that issue.

A. We were able to find the information. Thank you. The individual's name was Leslie Skillings, Jr., Sierra Club Maui Group.

Q. Can you also provide the names for the other individuals from the other organizations that you said were representing environmental interests?

A. From the National Resources Defense Council, the

Page 176

individual's name was Clyde Murley. Blue Ocean Preservation Society, two representatives, John Worthington and Pat Howard.

Q. And what year were they participating? In terms of Sierra Club, what year did they participate?

A. These go back to the development of IRP one, so it's probably the 1993 through '95 time frame they were members.

Q. Moving on, is it true that participants in the IRP process were told that they could not use the information obtained there to testify against Maui Electric Company?

A. I don't believe so.

Q. You don't believe so?

A. No.

Q. You're not sure?

A. Well, it's -- well, let me put it this way. I'm certain because the advisory process and the utilities management of that advisory process is open and public information. What we had was a rule that said there was not going to be any ex parte communications to the commission while we were in the process of developing a plan. It was a spirited intent of a collaboration, if you will.

Q. So you say there's nobody who didn't participate in the process for that reason?

MR. LUNA: Mr. Chairman, I'm going to object at this point. We've allowed him twice to ask the same question. This is the third time and we're objecting. It's already been asked

Page 177

and answered.

MR. CRAWFORD: This is a different question.

MR. LUNA: It sounds like the same question to me.

CHAIRMAN ING: State your question one last time and that's it.

Q. The first question was did you tell participants this. The second question is are you aware of participants who refused to participate because they were told they couldn't testify against MECO using information gained in this?

A. The answer to both questions is no.

Q. So you would be surprised if somebody stated -- if a witness was able to state they had experienced that?

A. Would I be surprised?

Q. Yeah.

MR. LUNA: I think, Mr. Chairman, we should clarify one point as to what time, if the person had been an actual participant or had been invited. At which point did that person decline or drop out of the program?

CHAIRMAN ING: I think the question also is would he be surprised. He can answer yes or no.

THE WITNESS: For purposes of expediting this line of discussion, the answer is no, I would not be surprised. I'm in customer service. I deal with many different discussions.

Q. So you wouldn't be surprised if there was somebody who had actually had experienced that?

Page 178

A. No, I would not be surprised if someone came to me and said that. That's a possibility is what I'm trying to say.

Q. So it is a possibility?

A. I think the commission recognized it as well as a quote from the framework as we were identified as managing the process very effectively, that not all parties agreed on all the issues and that's okay. That's part of collaborative discussion.

Q. So it's possible there was a party that didn't agree on this particular issue and refused to participate on that basis?

CHAIRMAN ING: I'm going to stop the line of questioning because you're asking him to speculate when you start talking about possibility and how a person may think. He cannot testify what someone else may think.

Q. In your survey by phone, did you at any time -- well, actually let me go back. A different question. Has this specific proposal for the Waena generating station been mentioned to any of your customers in your newsletter that's included in your billing?

A. Specifically if it was in the billing, I'm not aware.

Q. So most of your customers have not been notified that you're planning to build this facility?

A. I think one of the project managers would probably

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MECO IRP ADVISORY GROUP PARTICIPATION INTEREST

1) NAME: JOHN WORTHINGTON / PAT HOWARD
(Please Print)

2) MAILING ADDRESS: P.O. BOX 1128
PAIA, HI. 96779
(Zip Code)

3) TELEPHONE: 575-9762 (Day)
572-3421 (Evening)

4) FAX NO. : c/o Carl Freedman 572-6729

5) I represent the following public or private entity:
BLUE OCEAN PRESERVATION SOCIETY

6) The public or private entity I represent can provide the following significant perspective or useful expertise in the development of the MECO IRP Plan:
access to public input; historical perspective on IRP development and implementation; technical experience with DSM design & evaluation, & computer analysis; alternative energy system design, installation & functionality.

(signature)

Please mail the information to: **MAUI ELECTRIC COMPANY, LIMITED**
P. O. Box 398
Kahului, HI 96732
Attention: Steve Kealoha

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ORIGINAL

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State of Hawaii
LAND USE COMMISSION

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAII

In the Matter of the Petition of 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 Hawaii, Consisting of 65.7 Acres from the Agriculture to the Urban District.	DOCKET NO. A97-722 APPLICANT'S MOTION IN LIMINE TO PRECLUDE ADMISSION OF MAUI TOMORROW'S EXHIBITS 2, 3 & 12; DECLARATION OF RANDALL H. ENDO; EXHIBITS "A", "B" & "C";

APPLICANT'S MOTION IN LIMINE TO PRECLUDE ADMISSION OF MAUI TOMORROW'S EXHIBITS 2, 3 & 12

Applicant MAUI ELECTRIC COMPANY, LIMITED ("MECO"), by and through its counsel, pursuant to the Rules of the Land Use Commission, hereby moves in limine to prohibit Intervenor Maui Tomorrow ("Intervenor") from introducing the following documents into evidence:

1. Intervenor's Exhibit "2", described as "Regional Energy Initiatives-Na Makani Energy Initiative Project Report, Phase 1" (hereinafter referred to as the "Regional Energy Report," a copy of which is attached hereto as Exhibit "A"), and

2. Intervenor's Exhibit "3", described as "Customer-Sited Photovoltaics-Focusing on Markets that Really Shine" (hereinafter referred to as the "Photovoltaics Report," a copy of which is attached hereto as Exhibit "B")

3. Intervenor's Exhibit "12", described as "Effected [sic] Community Members on the Maui Tomorrow Roster" (hereinafter referred to as the "Maui Tomorrow Members List", a copy of which is attached hereto as Exhibit "C")

I. BACKGROUND

Intervenor intends to introduce Intervenor Exhibits "2", "3" and "12" as evidence in this case. None should be admitted. Since Intervenor will not be calling any of the purported authors of these documents as witnesses, none can be authenticated. Moreover said documents are neither reliable nor probative.

All of the documents contain what purports to be expert opinions, but the authors of the documents are not available to be cross-examined. Under the Hawaii Administrative Procedure Act's ("HAPA") requirement of full and true disclosure, the Intervenors must call the authors as witnesses and Applicants must be allowed to

cross-examine them, before the documents can be considered as evidence in this matter.

Intervenors cannot be allowed to sneak in non-qualified expert opinions through the "back door" by proffering these exhibits into evidence.

II. ARGUMENT

A. Admissibility of Documentary Evidence

A document must meet generally applicable standards of relevance to be admissible. In addition, a written report must be shown to be reliable and competent, by being authenticated. Authentication is the process by which the relevancy of a document is established by connecting it with a person, place or thing and the document is shown to be what its proponent claims it to be.

Although a document must be authenticated to be admissible in evidence, its mere authentication does not mean that it is admissible.

A document which is both relevant and sufficiently authenticated may nonetheless be excluded if its probative value is substantially outweighed by the danger of unfair prejudice or confusion, or by considerations of undue delay, waste of time, or needless presentation of cumulative evidence. 29A Am Jur 2d, Evidence §§1032, 1035.

Haw. Rev. Stat. § 91-10(1), governs the admissibility of evidence in contested cases, and provides that only relevant, reliable and probative evidence shall be considered by the LUC:

> Any oral or documentary evidence may be received, but every agency shall as a matter of policy provide for the exclusion of irrelevant, immaterial, or unduly repetitious evidence and no . . . order be issued except upon consideration of the whole record or such portions thereof as may be cited by any party and as supported by and in accordance with the reliable, probative, and substantial evidence.

Id. (Emphasis added).

B. Intervenor Exhibits "2", "3" and "12" Are Inadmissible Because They Cannot Be Authenticated

In the instant case, Intervenor Exhibits "2", "3" and "12" cannot be authenticated. Intervenor cannot provide any foundation proving that these exhibits were actually prepared by someone with a proper background and qualifications. Without such authentication, the document could just as well have been prepared by anyone, with no real basis for the opinions given.

C. Admission of Intervenor Exhibits "2" and "3" Is Prejudicial Because Applicant Will Not Have the Opportunity to Cross-Examine its Authors

The probative value of Intervenor Exhibits "2" and "3" is outweighed by the prejudice to Applicant who will not have the opportunity to examine the authors of the documents as to their qualifications and the basis for the opinions rendered therein. In recognition of the importance of such an examination, Haw. Rev. Stat. §91-10(3) provides:

> Every party shall have the right to conduct such cross-examination as may be required for a full and true disclosure of the facts, and shall have the right to submit rebuttal evidence.

In McCandless v. Water Co., 35 Haw. 314, 320 (1940), the court excluded an exhibit, partially due to the inability of the opposing party to cross-examine, and stated:

> An opportunity for a thorough cross-examination is particularly essential in connection with opinion testimony, especially that coming from experts or alleged experts.

Not allowing the Applicant the opportunity to cross-examine the authors of the Intervenor's exhibits is prejudicial, as Applicant cannot discover all of the bases for the opinions in those documents, and cannot submit responsive rebuttal evidence.

D. The Maui Tomorrow Members List Has No Probative Value

The Maui Tomorrow Members List (Exhibit "12") purports to be a list of Maui Tomorrow's members. However, Article IV of the bylaws of Maui Tomorrow (Intervenor Exhibit "11") states that Maui Tomorrow "shall have no members." By Maui Tomorrow's own admission, there can be no members.

Therefore, a document purporting to list such non-existent members carries no probative value whatsoever.

III. CONCLUSION

Intervenor cannot provide a sufficient foundation for the admission of the Intervenor Exhibits "2", "3" and "12". They fail to meet minimum standards required for the admissibility of documentary evidence and as such should not be admitted as evidence in this matter.

DATED: Wailuku, Maui, Hawaii, 4-22-98.

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

Attorneys for Applicant

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAII

In the Matter of the Petition of 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 Hawaii, Consisting of 65.7 Acres from the Agriculture to the Urban District.	DOCKET NO. A97-722 DECLARATION OF RANDALL H. ENDO

DECLARATION OF RANDALL H. ENDO

RANDALL H. ENDO declares:

1. I am an attorney licensed to practice law in the State of Hawaii, and am associated with the law firm of Carlsmith Ball Wichman Case & Ichiki, attorneys for Applicant MAUI ELECTRIC COMPANY, LIMITED ("Applicant") .

2. Attached hereto as Exhibit "A" is a true and correct copy of Intervenor's Exhibit "2", described as "Regional Energy Initiatives-Na Makani Energy Initiative Project Report, Phase 1" and produced by Intervenor MAUI TOMORROW to the Applicant.

3. Attached hereto as Exhibit "B" is a true and correct copy of Intervenor's Exhibit "3", described as "Customer-Sited Photovoltaics-Focusing on

Markets that Really Shine" and produced by Intervenor MAUI TOMORROW to the Applicant.

4. Attached hereto as Exhibit "C" is a true and correct copy of Intervenor's Exhibit "12", described as "Effected [sic] Community Members on the Maui Tomorrow Roster" and produced by Intervenor MAUI TOMORROW to the Applicant.

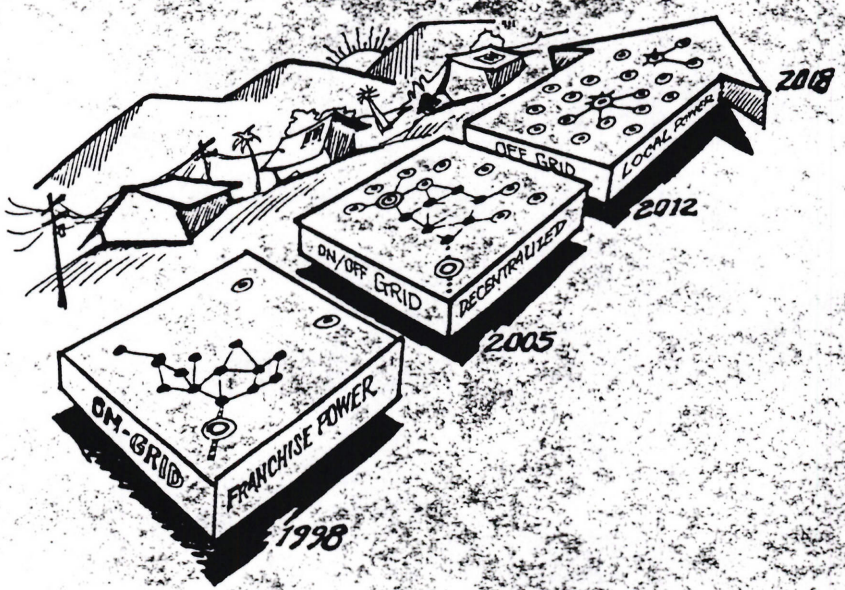
I declare under penalty of law that the above is true and correct.

DATED: Wailuku, Maui, Hawaii, 4-22, 1998.

RANDALL H. ENDO

REGIONAL ENERGY INITIATIVES

THE NA MAKANI ENERGY INITIATIVE PUTS FORTH THE RURAL NEEDS OF HAWAII FOR THE NEXT TWENTY YEARS



THE ATTACHED ENERGY PLANNING DOCUMENT SUMMARIZES THE COMMUNITY-BASED PLANNING INITIATIVES ASSEMBLED BY A TASK FORCE OF ENERGY EXPERTS AND COMMUNITY STAKE HOLDERS IN NORTH KOHALA

PHASE I
NA MAKANI ENERGY INITIATIVE
sponsored by
PLAN TO PROTECT, INC.

TASK FORCE LEADERS
J.T. POWER, M.D.
KENNETH BOCHE
JIM CHANNON

EXHIBIT A

A

PROJECT REPORT

~Na Makani Energy Initiative~

Phase I

[Sponsored by Plan to Protect, Inc.]

Project Coordinators

J.T. Power, M.D.

Kenneth Boche

Jim Channon

PROJECT REPORT
~Na Makani Energy Initiative~
Phase I

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	BACKGROUND	1
III.	FORUM PROCESS	2
IV.	PARTICIPANT SURVEY	2
V.	ACTION PLAN	2
VI.	SUMMARY	6
VII.	ADDENDUM A—FORUM AGENDAS*	
VIII.	ADDENDUM B—PARTICIPANTS*	
IX.	ADDENDUM C—SURVEY RESULTS*	
X.	ADDENDUM D—HANDOUTS & FLYERS*	

*[available upon request]

Na Makani Energy Initiative
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INTRODUCTION

The ***Na Makani Energy Initiative***, a County funded series of community energy planning forums, held three roundtables on July 1, September 16, and November 18, 1997. Each of the forums focused, respectively, on one of three main areas: 1) energy efficiency and conservation; 2) renewable energy strategies; and 3) action planning. A diverse group of energy experts and community advocates convened on those occasions to discuss options for future energy development in North Kohala. This project, sponsored by Plan to Protect, Inc., a non-profit organization for resource sustainability, was intended to introduce and formalize a community based planning process upon which to build consensus and ongoing community participation. The current report is prepared for the Hawaii County Department of Research and Development, which funded the project.

BACKGROUND

As a result of the North Kohala community's clearly expressed preference to avoid polluting technologies of energy production and to pursue long-term, sustainable solutions to its energy needs into the 21st century, an effort was initiated to engage in a true community based energy planning process. Community members had previously demonstrated a keen intention to pursue community self-determination in these matters.

Following on the unanimous passage, on June 19, 1996, of Hawaii County Council Resolution 317-96—the so-called 'North Kohala Power Resolution' (excerpts below), a group of community advocates applied for and received a grant from the Hawaii County Research and Development Department. This small grant provided an essential next step toward implementing the intent of the Resolution by affording the community the opportunity to explore, in the form of an "energy round table", the full range of practical development options.

Excerpts from Hawaii County Council Resolution—317-96:

> **Now, therefore be it resolved by the Council of the County of Hawaii** that it joins with the citizens of North Kohala to formally request the Hawaii State Legislature and the Governor to actively support an immediate full scale energy conservation education effort, followed by the thoughtful development of appropriate renewable, non-polluting and sustainable energy sources, such as solar, wind and other proven, cost-effective alternative energy technologies, as part of a collective, integrated strategy for a "soft energy path" into the 21st century, in a community-based collaboration with governmental agencies, the local utility and independent power producers.
>
> **Be it further resolved** that the Council supports the creation of a forum to address the above mentioned energy issues and that such a round table discussion would be held in North Kohala, although not limited to issues facing the North Kohala community with regards to alternative energy development.

FORUM PROCESS

An operational steering committee composed of community members was responsible for the planning and implementation of the forum series. This steering committee developed a budget, established procedural format and guidelines, selected participants, and set the schedule and agendas for the three forums (see Addendums A and B). The committee was also responsible for community and media notification of upcoming events (see Addendum D), and live (and weekly repeated tape delay) local public access cable television broadcasts of all of the forums.

The selected format for each of the forums was a moderated presentation and discussion process. Opportunity for community input was provided for by the inclusion of a question and answer session, including on site call-in phone access for home viewers. Each of the three forums was two hours in length.

PARTICIPANT SURVEY

During the third forum, which was focused on developing an action plan, the attendees were asked to participate in a survey intended to elucidate trends regarding future energy development in North Kohala. The procedure used was a modified 'delphi technique', which is deemed reliable when the sample is both qualified and broad. The participants met those specifications.

The collective trends were subsequently summarized in a graphic overview to establish general guidelines for the plan under development for North Kohala (see Addendum C). The trends elaborated through this process are projected to be pertinent for all outlying bioregions in the state of Hawaii, with utilization patterns contingent upon resource availability at specific locations.

It is clear that regional power preferences, as determined by this survey, will be moving from completely centralized sources to completely independent sources within the first fifteen years of the next century. The interim phase will manifest customers who are currently "on the grid", but who are progressively adding to their independence with an array of new, locally purchased technology. They are referred to as "on/off grid" customers. Over the long range, "micro technology" is anticipated that will fully establish the independent, "off grid" customer. Ideally, during the interim, independent power producers will initiate a regional interest in solar, wind and hydro power, likely in that order.

In the short range, restrictive legislation and the community's lack of education about alternatives are the two greatest challenges. Local initiatives for education could include solar workshops, free energy audits, a legislative information service, and the introduction of scale model solutions for display at local gathering places.

ACTION PLAN

A review of the transcripts of the three forums, revealed a number of possible actions within specific areas of influence. Each of these actions is seen as a potential component to the masterplan for energy development in North Kohala. As more of these actions are

undertaken, the community will become more energy self-sufficient, with the ultimate goal of realizing energy independence and sustainability.

- **Utility Management Recommendations:**

  - **ACTION**: HELCO has agreed to monitor total electrical demand for North Kohala. This will provide a baseline from which to benchmark future changes in energy demand from the grid.

  - **ACTION**: HELCO has agreed to institute a small trial of "time of use" electrical rates (test program with 50 homes). ***Na Makani*** proposes to evaluate community interest in this idea during Phase II of the project.

- **Legislative Action Recommendations:**

  - **ACTION**: The State legislature should extend the solar and renewable energy income tax credits. This is the single most important action that the legislature can do to support renewable energy development. This action is known to be a net benefit to the State's economy.

  - **ACTION**: The State legislature should pass a true "net metering" bill. This would allow excess electricity generated from renewable sources to be "traded" for electricity generated by utilities at times when renewables are unavailable. This would allow optimum sizing of grid inter-tied renewable sources.

  - **ACTION**: The State legislature should require that the Department of Health's Clean Air Fund be utilized to implement cost-effective energy-efficiency and renewable energy development (such as solar water heaters, energy-efficient lighting in State facilities, etc.) that will defer the need for new fossil fuel generating capacity.

  - **ACTION**: The State legislature should empower the counties to provide property tax-exemptions for renewable energy facilities. Property taxes on the value of renewable energy facilities are an additional cost that renewable energy facilities must bear. (HELCO's fossil fuel fired facilities are tax-exempt.)

  - **ACTION**: Hawaii County Government should enact the Hawaii Residential Model Energy Code.

  - **ACTION**: Hawaii County Government should enact diversion credits that represent the real costs of landfilling green wastes. These diversion credits could be utilized by renewable energy developers to supplement revenues from energy sales. These revenues can substantially improve the economics of renewable energy projects.

- **ACTION**: Build alliances and communicate recommendations regarding this agenda to State and County lawmakers.

✦ **PUC Competition Docket Recommendations:**

- **ACTION**: Allow wholesale and retail wheeling to permit direct service between renewable energy facilities and customers. Provide renewable energy developers with reasonable terms and conditions regarding access, access charges, etc. Independent power producers should be allowed to transmit and distribute renewable energy to consumers who are willing to pay the price.

- **ACTION**: Allow competition for operation and/or ownership of all or parts of the electric grid by community non-profits or for-profit enterprises. Perhaps a resource rich community such as North Kohala could provide power cheaper by a community owned or operated utility grid. If rules permitted, a business plan might show that the whole North Kohala portion of the grid could be operated from energy sources indigenous to the district while providing a wider range of customer choice about sources of power, as well as lower prices. This would also provide a better business climate for emerging companies and technologies.

- **ACTION**: Allow on site electrical generation by underground gas pipelines. Customers could be provided gas by independent power producers through underground gas lines which run fuel cells located on the customer's property. Would this be allowed under present or future rules? The gas could be made from renewable sources, integrating "waste" management into the operation. Thus customers would have a wider variety of choices about, and perhaps lower prices for, their electricity.

- **ACTION**: Allow developers and/or owner power co-ops to provide power to individual residences within new developments. This puts less demand on the grid, whose present owners are planning new oil-fired sources to meet future demands. And it provides niche markets for village scale integrated renewable systems, which may be cost-effective today. Integrating waste-management, agricultural production, and power production within a development as a way to create all power on site and export no wastes is a goal of forward-thinking land developers. Real estate developers can then offer their potential customers greater choice in how their electricity is made as well as in what kinds of building materials and resource-efficient designs are employed in a project. Innovation in development, housing, and energy utilization would emerge.

- **ACTION**: Allow communities to vote to have a choice of power providers based on better service, e.g. underground lines, lower prices, better reliability, renewable energy sources, etc.

- **ACTION**: Build alliances and communicate these recommendations to the PUC and Consumer Advocate.

✦ **Community Outreach:**

- **ACTION**: Put "energy action plan" on-line (www.kohala.org; Maui-Tomorrow; www.kohala.net; ISF website). [No Expense]

- **ACTION**: Write articles about this Action Plan for Ka'u Landing, West Hawaii Today, Kohala Mountain News, and other publications. [No Expense]

- **ACTION**: Evaluate community interest and need for the following action items, probably through the use of a bulk mailing to the entire community, including a residential energy questionnaire for return to ***Na Makani***. [Utilize County Phase II funds to implement this action.]

- **ACTION**: Provide free residential and commercial energy surveys. Kohala Research shows that 42.5% of Kohala residents (1990 census: population = 4,800; 3.2/house = 1,500 households X .425 = 637.5 households) want these surveys. At $25 per survey, this is $15,750. [Fund this action through a grant from CBED or other appropriate funding source.]

- **PROPOSED ACTION**: Make available a residential efficiency package, including water heater jacket; compact fluorescent lamps; high-efficiency showerheads; faucet aerators; hot water pipe insulation; electric water heater timers; on-demand water heaters. [Fund this action by combining HELCO's residential efficiency program with money from users to help pay for components.]

- **PROPOSED ACTION**: Make available a residential solar (solar hot water and photovoltaic) package, including collectors, tanks, and other hardware.

- **ACTION**: Evaluate each component. Where do we obtain items, how much do each of these measures cost, and what are their life-cycle costs or other profitability measures? [Fund evaluation of components with County Phase II funds.]

- **ACTION**: Evaluate most reasonable ideas and hardware. [Fund evaluation of options with County Phase II funds.]
  - Bulk installation of HELCO systems.
  - Bulk buy of only collector and/or tank or pre-heater. (Combine with a workshop or other means to get systems installed.)
  - Bulk buy of Solar Development, Inc.'s low-income solar water heater systems.

- **ACTION**: Evaluate "solar workshop" options for building and/or installing low-cost solar systems. Examples follow. [Fund evaluation of options with County Phase II funds.]

- Crystal City, Texas—$85 collectors.
- North Carolina Alternative Energy Corporation—$60 window box collectors and $300 solar water heaters.
- Colton, California—youth build and install solar equipment. (Kohala Intergenerational Center?)
- DBEDT's "Do It Yourself Water Heater Construction and Installation Program"

✦ **Rebuild America Program:**

➢ **ACTION**: Become a partner in this Department of Energy program (through 'Rebuild Hawaii Island' partnership with Hawaii County and HELCO). The community can access information on energy efficiency and renewable energy products and services, case studies and peer exchange, technical assistance, sustainable development program assistance, and financing options. DOE also provides assistance brokering projects. The community would gain credibility for funding and other purposes. ***Na Makani*** will prepare a separate Action Plan for participation in this program.

✦ **Green Enertopia:**

➢ **ACTION**: Become a partner in this program, whose purpose includes the establishment of national centers for enhancing public education, expanding technology transfer, and developing incentives for clean energy systems. The community would gain both technical assistance and credibility for funding and other purposes.

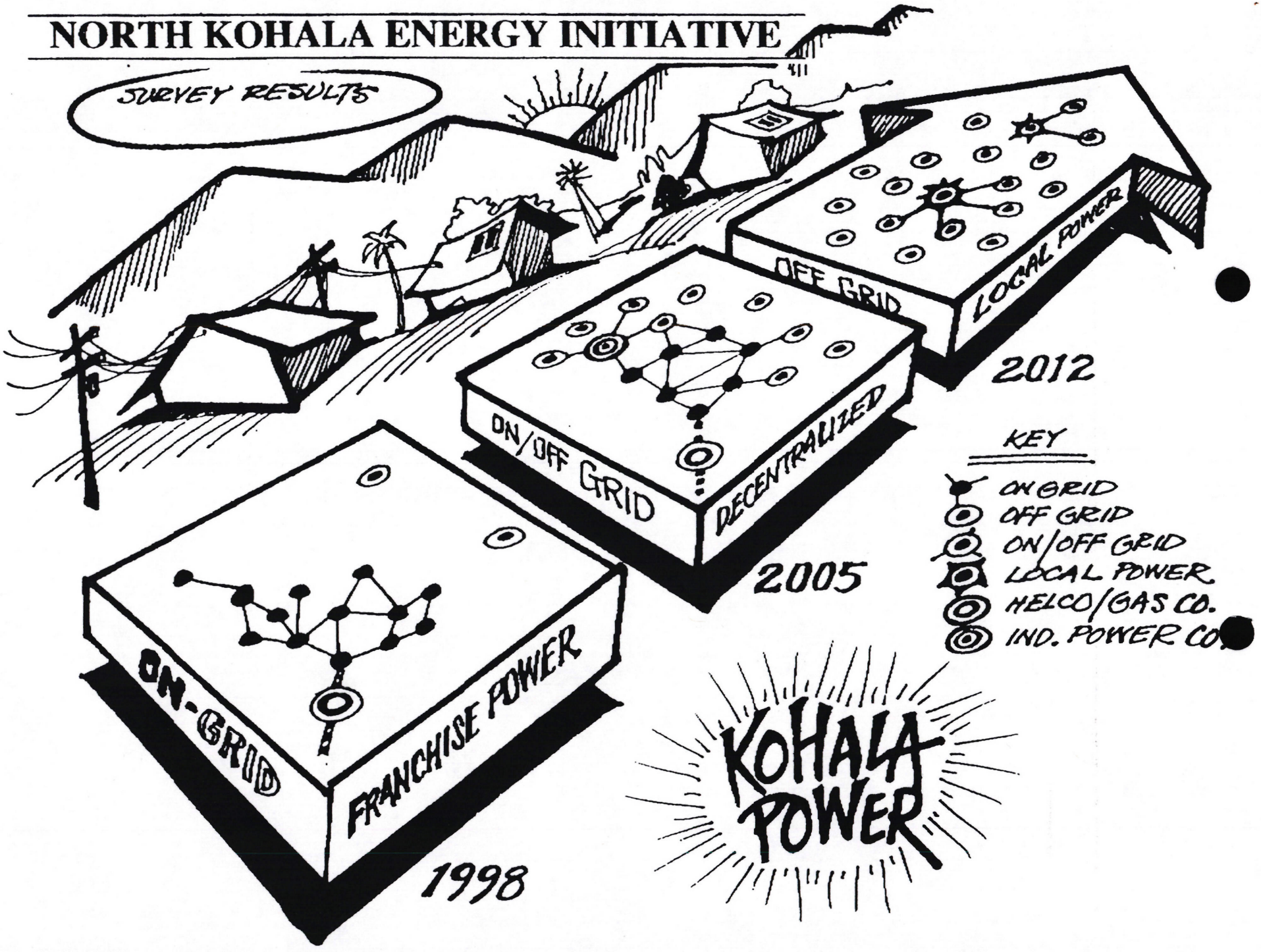
✦ **Entrepreneurial Opportunities:**

➢ **ACTION**: Pursue these as part of the community's broader interests, and funding and technical assistance requests.

SUMMARY

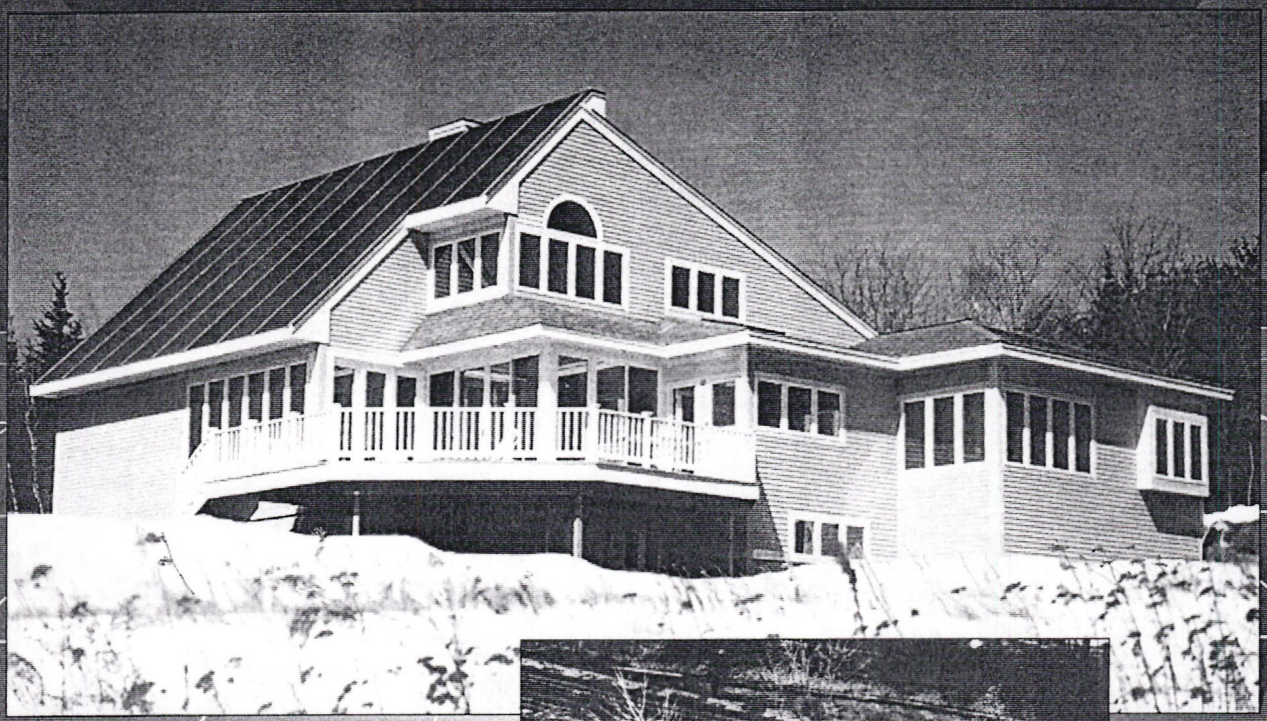
The ***Na Makani Energy Initiative*** project proposed to provide a vehicle for the community to envision and articulate its preferred energy future, and to develop a preliminary action plan as a cornerstone for energy self-sufficiency for the community of North Kohala. The project was timely and important because it provided an impetus for long range sustainable energy planning and development on the Island of Hawaii. Viable planning strategies derived from this project can now be shared with other communities, enabling them to make informed choices suitable for their prevailing conditions and in alignment with their intended purposes. The final true measure of success for this project lies in the degree to which these communities can engage themselves in this process and self-determine their future on the "soft energy path".

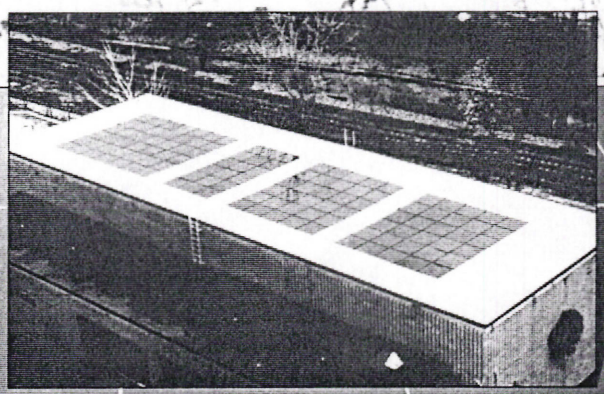
NORTH KOHALA ENERGY INITIATIVE

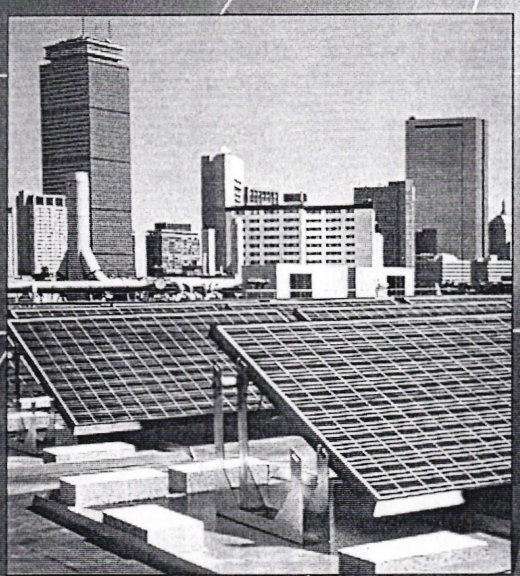


CUSTOMER-SITED PHOTOVOLTAICS:

Focusing on Markets That Really Shine







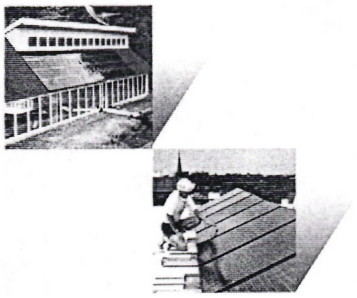


A STUDY HIGHLIGHTING THE BEST MARKETS IN THE UNITED STATES FOR GRID-CONNECTED PHOTOVOLTAIC SYSTEMS

EXHIBIT B

B

PV Now!



Photovoltaics are cost-effective at today's prices of about $6 to $7 per watt.

Today—yes, today—cost-effective markets exist for **customer-sited photovoltaics (CSPV)**—that is, grid-connected PV applications located at residential and commercial customer sites.

You don't need to wait for the future to find markets for customer-sited photovoltaics that are cost effective. Such markets exist now, and we have identified many others that have near-term promise. Exploiting these economic markets will hasten the commercialization of PV power that is connected to the utility grid.

CSPV systems have many unique attributes and offer incentives to utility customers, who are the end users of electricity.

These attributes and incentives include:

- Compensation for power at retail electric rates
- Tax credits
- Financing, leasing, and depreciation options
- Net-metering options and/or rate-based incentives
- Building credits for architectural applications
- Willingness to pay for clean power and innovation
- Quality of solar resource and customer load match
- Progressive state government, regulatory, and utility support.

The best niche markets are the locations that have the best combinations of these attributes and incentives.

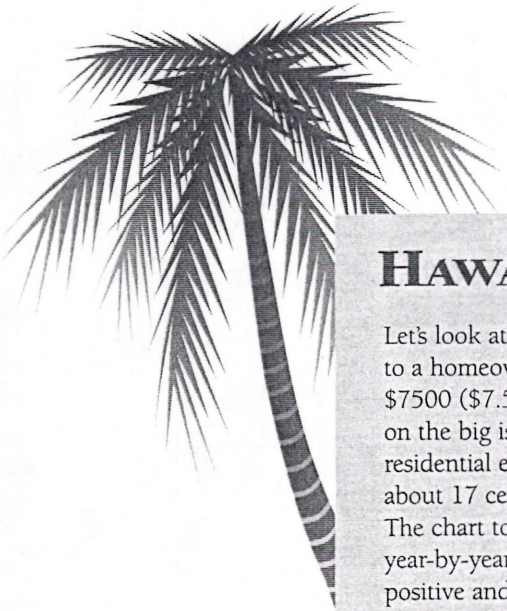
Targeting the Markets

Following a two-step approach, we have identified target CSPV markets in the United States.

Step One: On a state-by-state basis, identify attributes such as PV electricity production, utility electric rates, and solar tax incentives. See the table on the back page for detailed information.

Step Two: On a state-by-state basis, conduct a financial cash-flow analysis based on data from Step One for a base-case CSPV application. This analysis determines the **break-even PV system price**—the price at which the net present value of cash flows goes to zero. The higher this price, the more economic the location is right now.

We defined the base case as a new residential development that incorporates 1-kilowatt rooftop PV systems. Our assumptions are that the PV system is included in the homeowner's mortgage (a 30-year, 90%-debt loan with a fixed interest rate of 8%).



Hawaii—Ready for the PV Marketplace

Let's look at the proposed benefits to a homeowner who finances a $7500 ($7.50 per watt) PV system on the big island of Hawaii. The residential electric rates here are about 17 cents per kilowatt-hour. The chart to the right shows the year-by-year cash flow—both positive and negative—together with the net cumulative cash flow. *The customer has no out-of-pocket costs from the very first year forward*—that is, the net cash flow is immediately positive. This situation is a very compelling case for marketing PV systems in Hawaii.

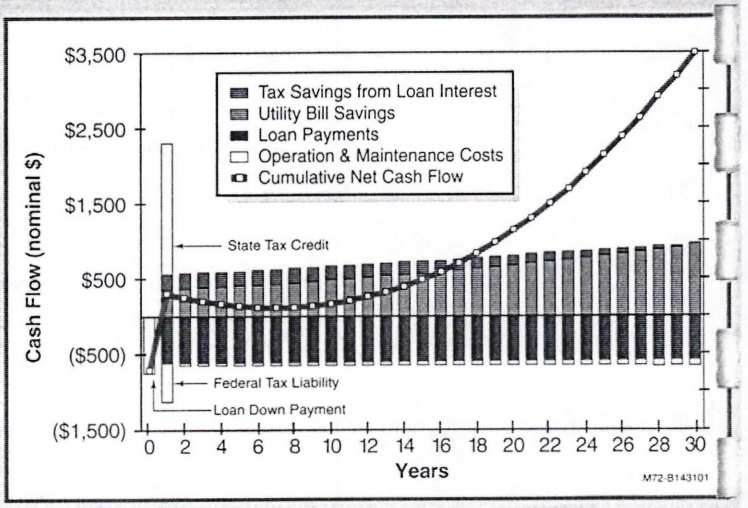


Figure 3. 30-year cash flow for $7500 ($7.50 per watt) residential PV system in Hawaii. The cash flow is always positive after the first year.

And the Winners Are...

We ranked the states by break-even PV system price and identified three market tiers. The best markets are in the southwest and northeast, with the top 5 CSPV niche markets being **Hawaii**, **California**, **Arizona**, **New York**, and **Massachusetts**. Their break-even PV price was between $4.30 per watt and $7.50 per watt.

A 4% low-interest loan would boost this range by 40%—to $6.20/W–$10.30/W. In either case, PV is cost-effective at today's prices of about $6-$7 per watt.

Utility rates and PV capacity factor are a good first-order screen for targeting markets. An added incentive, such as a tax credit, can catapult a market contender. As an example, compare North and South Carolina. Each state has almost identical utility rates and PV capacity factor, but North Carolina's solar tax credit moves its market ranking to 6, while South Carolina ranks 16.

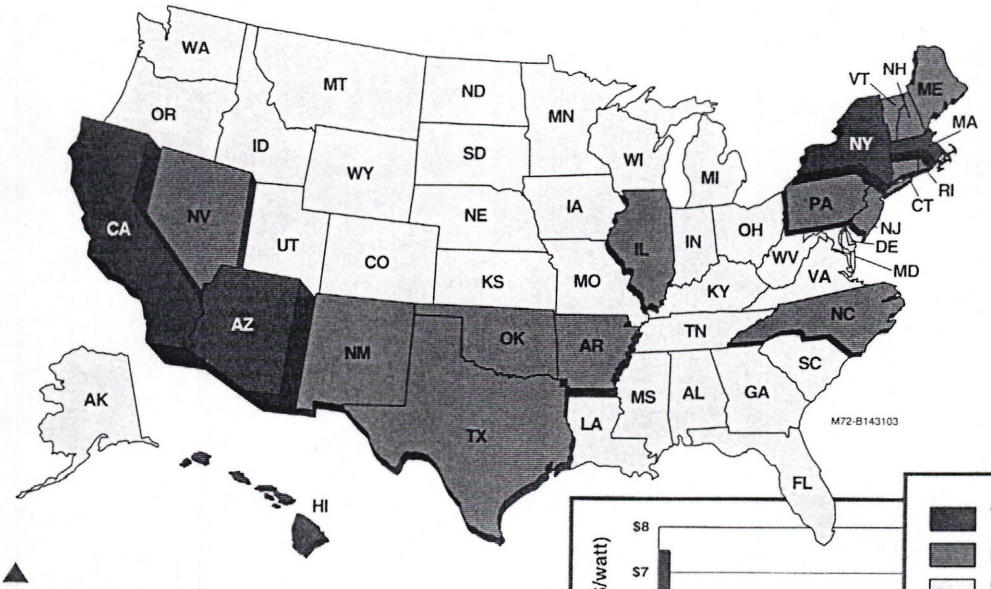


Figure 1. Three market tiers are identified. The best markets are in the southwest and northeast.

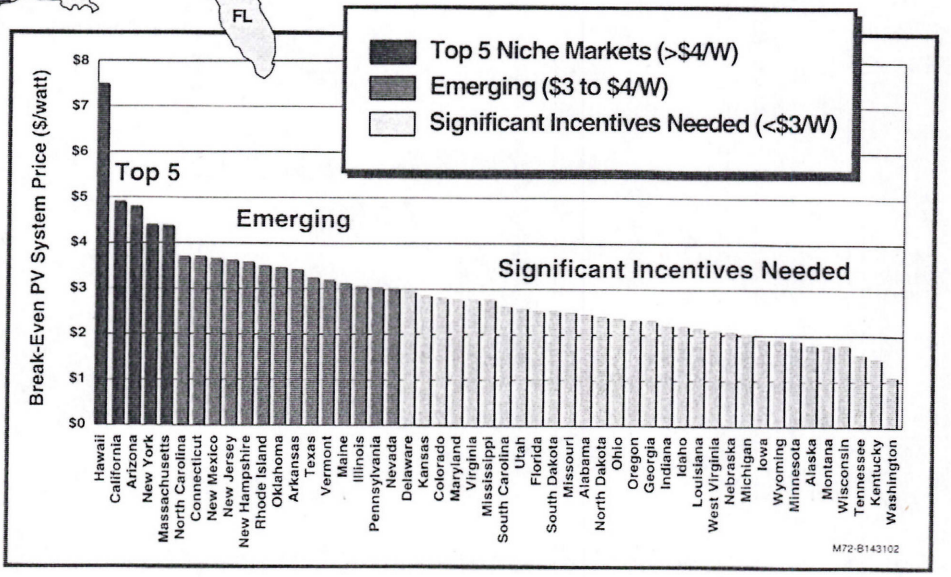


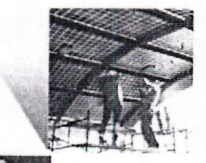
Figure 2. States ranked by break-even PV system price.

And as the table below shows, the Big Island is not the only place where PV systems make sense. The listed electricity rates and break-even PV prices especially highlight Kauai as a prime candidate for marketing PV systems.

Island	Electricity Rate (¢/kWh)	Break-Even PV Price ($/W)
Kauai	20.0	$9.70
Hawaii-Big Island	17.0	$8.40
Maui	13.8	$7.00
Oahu	12.3	$6.40

PV economics for residents in Hawaii.







GUIDING U.S. COMMERCIALIZATION

Grid-connected PV applications are *cost-effective today,* especially in Hawaii. And our analytic approach has highlighted the best markets for grid-connected PV systems across the United States.

	Market Ranking	Res. Rate (H/M/L)	Capacity Factor (H/M/L)	Res. Tax Incentive	Com. Tax Incentive	Net Metering	Res. Rate (¢/kWh)	Com. Rate (¢/kWh)	Capacity Factor (%)	Com. ELCC (%)
Alabama	31	M	M				8.2	6.9	18.1	61
Alaska	45	H	L				10.1	8.5	11.4	N/A
Arizona	3	M	H	1		Yes	9.6	8.6	22.8	65
Arkansas	13	H	M				11.0	7.1	18.1	76
California	2	H	H			Yes	13.1	10.3	20.9	64
Colorado	22	L	H				7.6	5.8	21.9	51
Connecticut	7	H	M			Yes	12.5	9.9	17.1	46
Delaware	20	H	M				10.1	7.0	17.1	57
Florida	28	M	M				8.5	6.6	18.1	48
Georgia	35	L	M				7.9	7.5	17.8	68
Hawaii	1	H	H	2a	2b	Pending	15.2	12.0	22.5	50
Idaho	37	L	H	3		Yes	5.3	4.3	20.0	32
Illinois	17	H	M				10.3	8.1	17.5	68
Indiana	36	M	L				8.5	6.0	16.2	57
Iowa	42	L	M			Yes	6.9	6.4	17.5	69
Kansas	21	M	H				8.5	6.7	20.0	78
Kentucky	49	L	L				6.1	5.3	16.2	41
Louisiana	38	L	M				7.2	7.2	18.5	71
Maine	16	H	L			Yes	12.2	9.3	15.2	24
Maryland	23	M	M				9.6	7.1	17.1	54
Massachusetts	5	H	M	4a	4b	Yes	12.6	9.3	17.3	49
Michigan	41	M	L				8.5	8.3	14.7	67
Minnesota	44	L	L			Yes	7.4	6.1	16.2	56
Mississippi	25	M	M				9.0	7.3	18.2	50
Missouri	30	M	M				8.4	6.4	18.1	71
Montana	46	L	M				6.3	5.2	18.1	54
Nebraska	40	L	M				6.8	5.6	19.0	77
Nevada	19	M	H				8.0	6.3	22.3	71
New Hampshire	10	H	L			Yes	13.6	10.4	15.2	30
New Jersey	9	H	M				12.2	9.3	17.1	75
New Mexico	8	M	H				9.2	8.3	23.0	45
New York	4	H	M			Pending	14.5	11.2	17.1	60
N. Carolina	6	M	M	5a	5b		8.6	6.6	17.6	52
N. Dakota	32	L	M	6a	6b	Yes	7.5	6.5	17.6	49
Ohio	33	M	L				9.8	7.6	14.7	53
Oklahoma	12	L	H	7a	7b	Yes	7.8	6.1	20.0	74
Oregon	34	L	M	8a	8b		5.5	4.9	17.1	16
Pennsylvania	18	H	L			Yes	12.0	8.5	15.0	44
Rhode Island	11	H	M			Yes	12.1	10.1	17.1	59
S. Carolina	26	M	M				8.8	6.2	17.8	43
S. Dakota	29	M	M				8.5	6.8	18.1	43
Tennessee	48	L	M				6.1	6.5	17.1	30
Texas	14	M	H		9	Yes	9.1	6.7	20.9	68
Utah	27	L	H				7.0	6.0	22.3	27
Vermont	15	H	L			Yes	12.5	9.2	15.0	32
Virginia	24	M	M				9.6	6.2	17.1	47
Washington	50	L	L				5.5	4.3	14.3	8
W.Virginia	39	M	L				8.1	5.6	16.2	45
Wisconsin	47	L	L			Yes	7.5	5.9	15.2	59
Wyoming	43	L	H				6.0	5.2	20.0	22

Furthermore, policy instruments—such as buy-downs of loan interest and capital cost—are effective mechanisms for reaching cost-effectiveness in the top U.S. markets. An example is the TEAM-UP (Technology Experience to Accelerate Markets in Utility Photovoltaics) project, funded in part by the U.S. Department of Energy.

The results shown in this brochure are good approximations for commercial customers. The added commercial benefits of a 10% federal tax credit and depreciation are somewhat offset by typically shorter loan terms that are less leveraged by debt and by more stringent rate-of-return and payback requirements.

The bottom line is that this analysis of the best niche markets for grid-connected PV systems should help guide commercialization efforts. ■

◀ State-by-state attributes and incentives for grid-connected PV.

Table Notes: Market Ranking by break-even PV price; Res. Rate: High (>10¢/kWh), Medium (8–10¢/kWh), or Low (<8¢/kWh). Capacity Factor: High (>20%), Medium (17%-20%), or Low (<17%). State Tax Incentives as follows: (1) 25% TC, $1,000 Max (2a) 35% TC, $1,750 Max (2b) 35% TC, no Max (3) 100% TD over 4 yrs, $5,000/yr Max (40% yr 1, 20% yrs 2, 3, & 4) (4a) 15% TC, $1,000 Max (4b) 100% TD, no Max (5a) 40% TC, $1,500 Max, can carry over 5 yrs, (5b) 35% TC, $25,000 Max, can carry over 5 yrs, (6a & b) 5% TC per yr for 3 yrs, (7a) 30% TC, $25,000 Max, can carry over 5 yrs, expired '95 - extension pending for 7a&b (7b) 20% TC, $150,000 Max, can carry over 5 yrs (8a) 1996 and 1997; 48¢/kWh TC, $1,200 Max; 1998-2001; 40¢/kWh, $1,000 Max (8b) 35% TC over 5 yrs (10% yrs 1 & 2, 5% yrs 3, 4, & 5) (9) 100% TD on "taxable capital" or 10% TD from "taxable earned surplus." TC = Tax Credit; TD = Tax Deduction; Max = Maximum tax incentive allowed; ELCC = Effective load-carrying capacity.

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Source: Howard Wenger (Pacific Energy Group); Christy Herig, Roger Taylor, Patrina Eiffert-Taylor (NREL); and Richard Perez (SUNY) "Niche Markets for Grid-Connected Photovoltaics," May 1996.





Produced for the U.S. Department of Energy
1000 Independence Ave., S.W.
Washington, D.C. 20585
by the National Renewable Energy Laboratory, a DOE national laboratory.

DOE/GO-10097-371
DE97000220
March 1997

Special thanks to James Rannels, DOE's Office of PV and Wind Technologies, for supporting this work.

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EXHIBIT C

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Lorrie & Brian Miller, Rainbow Jo's, 3423 Anuwanu Pl.

Rick Perrie, 81-25 Makawao Ave

Fernando Ribao Jr., 26 Alohi Pl.

Anna Mae Shishido, Maui Group - Sierra Club, 55 Haaheo Place

David & Rose Yanagihara, Courage & Love Rehab. Svcs., 398 Ali'iolani St.

MAUI TOMORROW CONTRIBUTORS - KULA - page 1

Haleakala Waldorf School, R.R. 2, Box 790

Andrew Annenberg, Annenberg Masterworks, PO Box 778

Bren & Fred Bailey, Makani Ltd., RR2 Box 126

Lenore Bearman, 214A Holomakani Dr

Mitch & Joan Berman, SR 50

Richard Betz, PO Box 1203

John Blair, RR 1, Box 479B

Phillip & Tanesha Bonde, 157 Holopuni Rd.

Don & Judy Brown, RR 2, Box 116

Alana Lynn Bryan, PO Box 632

Cynthia Burke, Courtyard Deli, RR 1 Box 485

Carol Childerhouse & Dudley Smith, RR 2 Box 256

John Cho, P O Box 301

Greg & JoAnn Chou, 209 Kawchi Place

Azby Chouteau & Kari McCarthy, RR1, Box 464

Diane Clarke & Heinz Rominger, Cybernauts, 108 Kulalani Dr.

David & Kathy Coakley & Sons, RR1, Box 297C

Robert Coffey, PO Box 391

Bob Colopy, PO Box 586

Hunton & Radha Conrad, PO Box 653

Curtis Wilson Cost, PO Box 90

Mr. & Mrs. R. Dougal Crowe, RR 2, Box 96-A

John & Mary Cusack, 689C Omaopio Rd.

Martin & Denise Diamond, Island Essence, SR Box 101

Richard Duffy & Ruth Ballinger, 113 Hapapa Rd.

Pat Elf, Winner's Circle Unlimited, RR2, Box 93B

MAUI TOMORROW CONTRIBUTORS - KULA - page 2

Robert & Toni Fahnestock, PO Box 458

Mark Ferguson & Jan Hasse, PO Box 321

Joanne Fitch-Darling, RR2, Box 780

Jamie Fonseca, Chelsea Rose, PO Box 276

Rory Frampton, 253 Holomakani Place

Joel Friedman, M.D., PO Box 606

Virginia Gardner, 234A Holomakani Pl.

Mike Gerry, Silver Cloud Ranch, RR2 Box 201

Kit Gillette, 619 Omaopio Rd

Gayle Gordon, PO Box 234

Pam Gould, Yards & Gardens, RR3 — 115 Kula Hwy.

John & Susan Guard

Paul Guard, PO Box 158

Naomi & Walter Hillinger, SR 100

John & Marilyn Hirashima, Sunrise Protea Farm, 1119 Manu St.

Scott & Dr. Julie Claire Holmes, 651 Omaopio

E.B. Holroyde, 382 Hapapa Road

Deborah Hoopingarner-Diehl, 109 Lopaka Pl.

Harlan Hughes & Judy Anderson, RR1 Box 538

Brian Jenkins, Brumbaugh & Jenkins, 221 Ululani Rd.

Karen & Jim Jones, 523-C Kimo Dr.

Buzzy Kaufman & Gayle Gordon, Focus on Fitness, PO Box 234

Charles & Lenore Knobel, 109-D Kolahala Dr.

Mike Krueger, 1110 AinaKula

Larry & Lori Land, Paradise Pharmacy - Pukalani, RR 2, Box 230

MAUI TOMORROW CONTRIBUTORS - KULA - page 3

Tom , Ann, & Stephanie Leutenecker,

Winifred Marsh, 493 Upper Kimo Dr.

Nick Matichyn, Maui Coffee Roasters, 79 Polipoli Rd.

Dick & Rosily Mayer, RR 1 Box 518

Alyssa Miller, Pacific Environmental Research, RR 1 Box 513

Nina Miro-Quesada, Valley Original, RR4 Box 49

Don Moore, Kula True Value Hardware, PO Box 539

David Morihara, RR2 Box 18

Rev. Heather Mueller-Fitch, St. John's Episcopal Church, RR 2, Box 212

Jim & Laurie Murray Jr. , RR 1, Box 449A

Patty Nakao, RR1 Box 458

Bonnie Newman, 116 Pea Pl.

Jeanette Ostrander, 233 Naalae Rd., #A

Jore Park & Wylee Fables, SeaSeer, PO Box 1213

Bob & Hana Peck, RR4 Box 36

Oliver Perz, Laf Young & Assoc., 106 Holopuni Rd.

Pamela Polland, Off the Leash, 110 Kulalani Dr.

Kevin Puliatch, PO Box 355

Carolyn & Robert Richardson, 106 Poohina Rd

Patricia Rife, PO Box 808

Fred & Patty Rohlfing, RR1 Box 398

Fred Romanchek, Kula Lodge & Restaurant, RR1 Box 475

David Rose, Income Builders International, SR 50

Mark Rudd, PO Box 388

Bob Schmidt, PO Box 1072

Carol Sherrill, RR2 Box 106

MAUI TOMORROW CONTRIBUTORS - KULA - page 4

Mike Singlehurst, PO Box 396

Robert Smith, Hawaiian Outdoor Adventures, 102 16 Kaui Pl.

Allan Sparks, RR 1 Box 522A

Lisa Starr, Ukulele Clothing Co., P O Box 720

Gayle Stevens, 231 Ululani Rd.

Candle Summers, Candlelights Studios, RR2 Box 16, Lwr. Kula Rd.

Roger & River Sussman, PO Box 1255

Steve & Maggie Sutrov, 124 Ainakula Rd

Yuri Imanishi & Brian Swift, PO Box 331

Greg Tiedeman, PO Box 1098

Barry Trofka, Santa Claus, RR2 Box 2588

Barbara Waterhouse, 1112 Mano Dr.

Dr. Gary & Bernadette Wilkins, 210 Puakea Pl.

Joy & Darrell Williams, 433 Crater Rd.

Matthew Winters, RR1 Box 482-A

Emi & David Young, RR 2 Box 262A

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April 20, 1998

Ms. Esther Ueda
Executive Officer
State Land Use Commission
Department of Business, Economic
Development & Tourism
P. O. Box 2359
Honolulu, Hawaii 96804

APR 20 2 00 PM '98
LAND USE COMMISSION
STATE OF HAWAII

Re: LUC Docket No. A97-722/Maui Electric Company, Limited

Dear Ms. Ueda:

Please find enclosed five motions in limine (original and 15 copies) to preclude Intervenor Maui Tomorrow from introducing certain documents into evidence and to disqualify certain Maui Tomorrow witnesses as experts.

We request that the Land Use Commission ("LUC") hear and rule on these motions on Thursday morning, April 23, 1998.

Please note that Maui Electric Company ("MECO") makes these five motions in an effort to expedite the hearings. Certainly, MECO could have made these motions orally during the presentation of Maui Tomorrow's case. However, by presenting its arguments prior to the hearing, the LUC will be able to consider these issues in advance and rule on them without expending a great deal of time during the hearings on Thursday and Friday.

MECO makes these motions because of the serious flaws in Maui Tomorrow's presentation of its case. While the LUC is not bound to follow all of the formal rules of evidence contained in the Hawaii Revised Statutes, it is required to exclude irrelevant, immaterial and repetitious evidence. Hawaii Administrative Rule § 15-15-63(b).

MECO believes that under well established rules of evidence, certain documents

which Maui Tomorrow wishes to introduce are lacking in foundation and authentication such that they should be excluded as irrelevant and immaterial. As you probably recall, the Land Use Commission admitted the exhibits of Maui Tomorrow, but with the condition that MECO be allowed to object to the admission of certain documents at a later time.

Moreover, certain witnesses listed as experts by Maui Tomorrow clearly lack the background to be deemed expert witnesses. Their testimony must thus be precluded or restricted accordingly.

Thank you for your consideration.

Sincerely yours,

Dean Nakae

for B. Martin Luna
Randall H. Endo

BML:mea
5018120.1.015787-5
Enclosures

CARLSMITH BALL WICHMAN
CASE & ICHIKI

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ALLEN R. WOLFF 5876
RANDALL H. ENDO 6567
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2200 Main Street
Wailuku, Maui, Hawaii 96793-1086
Tel. No. (808) 242-4535

Attorneys for Applicant
MAUI ELECTRIC COMPANY,
LIMITED

ORIGINAL

LAND USE COMMISSION
STATE OF HAWAII
APR 20 2 12 PM '98

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAII

In the Matter of the Petition of 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 Hawaii, Consisting of 65.7 Acres from the Agriculture to the Urban District.	DOCKET NO. A97-722 APPLICANT'S MOTION IN LIMINE #5: TO PRECLUDE TESTIMONY OF DICK MAYER AND IAN CHAN-HODGES AS EXPERTS; DECLARATION OF RANDALL H. ENDO; EXHIBITS "A" & "B"; CERTIFICATE OF SERVICE Hearing Date: _____ Place: _____ Time: _____

APPLICANT'S MOTION IN LIMINE #5: TO PRECLUDE TESTIMONY OF
DICK MAYER AND IAN CHAN-HODGES AS EXPERTS

Applicant MAUI ELECTRIC COMPANY, LIMITED ("Applicant" or "MECO"), by and through its counsel, hereby moves in limine pursuant to the Rules of the Land Use Commission to preclude Dick Mayer and Ian Chan-Hodges, witnesses on

behalf of Intervenor Maui Tomorrow (the "Intervenor"), from testifying as experts in this proceeding.

I. BACKGROUND

The Intervenor identified Dick Mayer ("Mayer") Ian Chan-Hodges ("Hodges") as its witnesses who will testify in this contested case hearing as experts in the field of economic impacts, water, land use and energy planning. However, neither Mayer nor Hodges is qualified as an expert in these areas, and both should be prohibited from testifying as experts.

Haw. Rev. Stat. ("HRS") § 91-10(1), governs the admissibility of evidence in contested cases, and provides, in pertinent part, that:

> Any oral or documentary evidence may be received, but every agency shall as a matter of policy provide for the exclusion of irrelevant, immaterial, or unduly repetitious evidence and no . . . order be issued except upon consideration of the whole record or such portions thereof as may be cited by any party and as supported by and in accordance with the reliable, probative, and substantial evidence.

HRS § 91-10(1) (Emphasis added); Haw. Admin. Rule § 15-15-63.

The testimony of Mayer and Hodges as Intervenor's experts will be neither reliable nor probative, as they are not qualified experts.

Mayer is listed as an expert in "economics of energy planning & air pollution" who will testify as to "community economic impacts, relation of various plans for water and land use." See Intervenors' Witness List. Hodges is listed as an

expert in "Community Economics & Planning" who will testify as to "impacts on community economics & resources" and "energy planning." Id.

II. ARGUMENT

A. General Principles Pertaining to Testimony of Expert Witnesses

A longstanding general rule of evidence confines the testimony of witnesses to statements of concrete facts within their own observation, knowledge and recollection--that is, facts perceived by the use of their own senses--as distinguished from their opinions and conclusions drawn from those facts. Generally, a non-expert witness may not testify as to opinions or conclusions, but must confine all testimony to a report of facts.

Expert testimony is used on issues which require scientific or specialized knowledge or experience in order to be properly understood and which are not subject to an intelligent determination simply on the basis of deductions made and inferences drawn from ordinary knowledge, common sense and practical experience gained in the ordinary affairs of life. On such issues, the testimony of a witness with special knowledge and skill is required in order to arrive at an intelligent conclusion.

Thus, a person qualified by professional, scientific or technical training, or by practical experience, in regard to a particular subject or field of endeavor, which gives him special knowledge not shared by the general public, may testify as an expert on questions pertaining to that field of training and experience. 31A Am. Jur. 2d, Expert and Opinion Evidence.

> Expert testimony is admissible only when the witness is in fact an expert. . . . the expert witness must have such skill, knowledge, or experience in the field in question as to make it appear that his opinion or inference-drawing would probably aid the trier of fact in arriving at the truth.

Larsen v. State Savings & Loan Ass'n., 64 Haw.302, 304 (1982) (citations omitted; emphasis added).

A. Mayer Is Not an Expert in Community Planning

Intervenors indicate that Mayer will testify as to the "relation between various plans for water and land use." However, even a cursory review of Mayer's resume (attached as Exhibit "A") indicates that his education, experience and training is limited to economics. At Maui Community College, Mayer teaches "Principles of Economics", "Personal Economics", "Personal Money Management" and "World Regional Geography."

Mayer has no education, training or experience in community planning, and thus cannot be qualified as an expert in this area.

While Mayer's resume reflects that he has participated in community planning by being a member of various committees and organizations, such experience does not rise to the level of an expert. The Land Use Commissioners have no need for lay testimony of that nature.

Moreover, it appears that Mayer has not conducted any study or prepared any report on this topic. Thus, he cannot be qualified as an expert in this field.

B. Mayer Is Not an Expert in Community Economics Impacts

Mayer is also listed as Intervenors' experts who will testify as to community economic impacts.

While Mayer's resume reflects education in economics generally, it shows no experience, education or training specifically on the impact of a power plant upon the community's economy. Indeed, the resume is devoid of any indication that he ever wrote any articles, prepared any reports, conducted any studies, or focused any research efforts upon the topic of community economic impacts.

Moreover, it appears that Mayer has not conducted any study or prepared any report on this topic.

Based upon the above undisputed facts, Mayer cannot be qualified as an expert to testify as to community economic impacts.

C. Hodges Is Not an Expert in Economic Impacts Nor Energy Planning

Intervenors indicate that Hodges will testify as to the "impacts on community economics & resources. Energy Planning."

However, even a cursory review of Hodge's resume (attached as Exhibit "B") indicates that his education, experience and training do not even begin to qualify him as an expert in any of those areas.

Hodges has no education, training or experience in community economic impacts nor energy planning, and thus cannot be qualified as an expert in those areas.

Moreover, it appears that he has not conducted any study or prepared any report on this topic.

Based upon the above undisputed facts, Hodges cannot be qualified as an expert to testify as to economic impacts or energy planning.

III. CONCLUSION

Neither Mayer nor Hodges is qualified to testify as a expert in the fields of community planning, community economic impacts and energy planning. Therefore, such testimony should be precluded.

DATED: Wailuku, Maui, Hawaii, 4-17-98.

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

Attorneys for Applicant

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAII

In the Matter of the Petition of 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 Hawaii, Consisting of 65.7 Acres from the Agriculture to the Urban District.	DOCKET NO. A97-722 DECLARATION OF RANDALL H. ENDO

DECLARATION OF RANDALL H. ENDO

RANDALL H. ENDO declares:

1. I am an attorney licensed to practice law in the State of Hawaii, and am associated with the law firm of Carlsmith Ball Wichman Case & Ichiki, attorneys for Applicant MAUI ELECTRIC COMPANY, LIMITED.

2. Attached hereto as Exhibit "A" is a true and correct copy of the resume of Dick Mayer, produced by Intervenor MAUI TOMORROW to the Applicant.

3. Attached hereto as Exhibit "B" is a true and correct copy of the resume of Ian Chan-Hodges, produced by Intervenor MAUI TOMORROW to the Applicant.

I declare under penalty of law that the above is true and correct.

DATED: Wailuku, Hawaii, 4-17-98, 1998.

RANDALL H. ENDO

RICHARD D. MAYER
RR1 Box 518
Kula, Maui, Hawaii 96790
Business phone:(808) 244-9181
Home Telephone:(808) 878-1874

PRESENT OCCUPATION: Economics/Geography Professor
University of Hawaii: Maui Community College
AGE: 55 (February 12, 1942)
MARITAL STATUS: Married
WIFE: Supervisor: Utilization Review, Maui Memorial Hospital
SOCIAL SECURITY: 015-32-2109

EDUCATION

. B.A. (Economics): Brandeis University, (Waltham, Mass.), 1963
M.A. (International Business/Economic Geography): U. of Washington, 1967
Advanced Work: University of California (Berkeley); University of Hawaii; Bowling Green University

WORK EXPERIENCE (SELECTED)

1963-1965	Peace Corps/Nepal: Community Development
1967 - Present	**Maui Community College, Kahului, Maui, Hawaii, 96732**
(31 Years)	**Title: Professor**
	(Tenured since 1971)
Teaching Areas:	**Principles of Economics, Personal Economics,**
	Personal Money Management, World Regional Geography
1968-1969	Division Chairperson, Liberal Arts Division
1975-1977	Division Chairperson, Social Science/Humanities Division
1970	U. S. Federal Census: Crew Leader
1981	Consultant to VITA: Technical assistance to 3rd world peoples
1984-1985	Consultant: Financial Planning, State Retirement System
1984-1987	Seminar Leader: Personal Money Management; State Retirement System: US Census Data; 1986 Tax Reform Act
1985-PRESENT	Legal: Expert Witness in Economics

COMMITTEE WORK (Within University of Hawaii system)

UNIVERSITY OF HAWAII SYSTEM LEVEL - COMMITTEE WORK

.Hawaii State Open University
.University of Hawaii General Education Core Requirements
UH Environmental Center: Environmental Impact Statement Review
University of Hawaii Academic Affairs Committee
University of Hawaii Strategic Plan Committee

COMMUNITY COLLEGE SYSTEM LEVEL - COMMITTEE WORK

(APPOINTED BY COMMUNITY COLLEGE CHANCELLOR)

Community College Master Plan
"Directions for the 80's" Committee
University Reorganization Committee

MAUI COMMUNITY COLLEGE - COMMITTEE WORK

Curriculum Committee
Budget Committee: Chairperson for 16 years
Maui County Educational Needs Assessment Survey
Faculty Senate Executive Committee: Vice-Chairperson
Faculty Senate Charter Review Committee: Chairperson

EXHIBIT A

OTHER ACTIVITIES (Selected former and present activities)

State of Hawaii: Air Pollution Control Committee, Maui County, Chairperson
Maui County: Planning Commission Member
Maui County: Board of Adjustments and Appeals Member
Maui Chamber of Commerce: Economic Development Committee
Maui County: Advisory Committee to Mayor on Energy Policy, Chairperson
Hawaii State Statistical Data Center (Agency of DPED), Maui County Representitive
UHPA Faculty Union: Community College Rep on Salary Adjustment Committee
Maui Economic Development Board: Statistics Committee
Instructor, Cable Television Course on Macroeconomics
Kula Community Association, Board of Directors
Kula Elementary School PTA, Vice-President, President
Maui County Upcountry General Plan, Citizen's Advisory Committee, Vice-Chairman

PUBLIC SPEECHES (Selected)

Numerous organizations have called upon me to address them. In each case I have taken these requests most seriously by preparing a well-documented speech. A partial list of my public speeches follows:

Maui Press Association, "Evaluation of the Maui Media"
Planners, Architects, and Landscape Architects(several times)
American Association of University Women (State Convention)
Hawaii State Association of Credit Unions (State Convention)
Humanities Foundation Community groups
Hiroshima Day Commemoration, Iao Congregational Church
St. Joseph's Church, Makawao, "Peace and Social Justice"
Maui County Women's Conference, "Comparable Worth"

Moderator for several community forums: air pollution; geothermal power; Maui's airport needs;
Moderator for candidates forums: Mayor and Maui County Council

AWARDS

1975	American Lung Association	Blue Sky Award for Efforts in Clearing Up Air Pollution
1976	Chamber of Commerce	Outstanding Young American Award
1981	Maui Community College	Merit Award
1987	University of Hawaii Board of Regents	Excellence in Teaching Award
1989	Maui Community College	Merit Award
1991	Maui Peace Network	Ho'omalu Award
1996	University of Hawaii System	Faculty Service to the Community Award
1997	Maui County Council	County Council Resolution — For service to the Maui community

Ian Chan Hodges

P.O. Box 1211
Makawao, HI 96768
(808) 572-8348

EXPERIENCE

Pacific Knowledge, Makawao, HI
Principal: 1993 — present

Since its formation in August of 1993, Pacific Knowledge has been involved in seven primary projects:
1) Organizing the Hawaii Fair Lending Coalition to analyze the geographic mortgage lending data of Hawaii's financial institutions and to carry out necessary community reinvestment challenges. The first CRA challenge resulted in a federally mandated commitment of $150 million in loans for Hawaiian Homelands. Renegotiated and strengthened this commitment during the Summer and Fall of 1997;
2) Designing, promoting and obtaining funding for Maui Microenterprise, a loan fund for small businesses operated by MEO.
3) Creating the *Pacific Monitor* – a publication focusing on economic diversification, technology and Asia-Pacific news. The *Pacific Monitor* was sent out three times a week to nearly 1,000 Maui businesses.
4) Working on developing models of community development finance on Hawaiian Homelands through the Hawaiian Homes Loan Project;
5) Initiating negotiations between a small local bank and social investors about possible acquisition and conversion to a CDFI;
6) Collaborating with community organizations in developing a successful proposal for a State of Hawaii sponsored microloan fund feasibility study, and;
7) Providing research services in socially responsible investing, consumer protection laws and ownership of local investment huis.

Center for Responsible Capital Investment, Radnor, PA
Founder & Project Director: 1992 — 1993

Formed the Center for Responsible Capital Investment to provide a forum through which to respond to the issues of community development finance brought to the nation's attention by the campaign of Bill Clinton. After Clinton's inauguration, managed the Center's work which focused on the President's initiatives involving Community Development Financial Institutions (CDFIs) and the Community Reinvestment Act (CRA). Activities at the Center included:
1) Organizing a local CDFI forum made up of six area banks, the Philadelphia Fed, the Private Industry Council, Philadelphia Development Partnership, Black Clergy, Inc. and community groups;
2) Working with individuals and institutions in Philadelphia, Baltimore and D.C. to develop a curriculum designed to train bankers in community issues and community leaders in banking; and,
3) Assisting Congressional staff in drafting a proposed educational/TA component for the Clinton Administration's CDFI legislation.

TONY! Ergonomic KeySystems, Palo Alto, CA
Consultant: 1990 — 1992

Consulted in various aspects of preparing the TONY! keyboard for market. Work involved product benefits analysis, reviewing product designs, exploring manufacturing options, performing background searches, devising marketing strategies, doing legal research, locating potential investors, creating investment instruments and developing organizational strategies. The TONY! received coverage in more than

EXHIBIT B

50 publications and has also been featured on ABC, CBS, CNN, NBC and PBS. Thirty members of the Fortune 500 and hundreds of others (including four Federal agencies) submitted preproduction purchase orders for the TONY!.

The Whole Works, Main Line, PA
Partner: 1990 — 1991

Co-founded and helped manage a resource center for nonprofits located in the Philadelphia area. The Whole Works provided discounted books, fund raising assistance and computer support to the staff and clients of nonprofit institutions. Created a hybrid partnership/ proprietorship structure for this venture — allowing for both organizational flexibility and real ownership for those involved.

General Community Development Work, USA
Field Worker: 1986 — 1993

Involved in various community development activities in Philadelphia, Camden, Los Angeles and Washington, D.C.

Community Medical Clinic, Haiti
Organizer: 1987

Co-organized a relief/construction trip to Haiti for the purpose of building a community-based medical clinic. Involved in fund raising, logistics, volunteer recruitment and management.

Patsy Mink for Governor, Honolulu, HI
Assistant to the Campaign Manager: 1986

Helped coordinate Patsy Mink's gubernatorial race. Managed volunteers in mailing and phone call efforts.

Representative David Hagino, Honolulu, HI
Legislative Aide: 1985

Served as an aide to Representative Hagino with work focused within the education committees.

Abel-Benke, Honolulu, HI
Student Intern: 1982

Interned at Abel-Benke, a Hawaii-based securities firm. First encounter with a corporate takeover.

General Investment World
Student Practitioner: 1980 — Present

Developed an interest in investments at the age of 13. Went on to acquire a working knowledge of stocks, futures, options and debt instruments. Learned from most mistakes made during adolescence.

EDUCATION

First National CDFI Institute, Durham, NC
Received community development finance training in February 1994.

Eastern College, St Davids, PA
BA in Sociology with a concentration in alternative economy (1990). Additional graduate-level course work in Economic Development.

Kalani High School, Honolulu, HI
Graduated in June of 1984.

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing document was duly served upon the following parties by U.S. Certified Mail, postage prepaid, on the date stated below:

RICHARD EGGED, JR., Director
ABE MITSUDA, Administrator
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State of Hawaii
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Honolulu, HI 96804-2359

ANN OGATA-DEAL, Esq.
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County of Maui
250 South High Street
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PLANNING COMMISSION
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200 South High Street
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G. STEPHAN HOLADAY
Hawaiian Commercial & Sugar Company
P. O. Box 266
Puunene, Hawaii 96784

MARK SHEEHAN
MAUI TOMORROW
P.O. Box 429
Makawao, HI 96768

DATED: Wailuku, Hawaii, 4-20-98, 1998.

B. MARTIN LUNA
ALLEN R. WOLFF
RANDALL H. ENDO
Attorneys for Applicant

CARLSMITH BALL WICHMAN
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Attorneys for Applicant
MAUI ELECTRIC COMPANY,
LIMITED

ORIGINAL

LAND USE COMMISSION
STATE OF HAWAII
APR 20 2 11 PM '98

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAII

In the Matter of the Petition of 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 Hawaii, Consisting of 65.7 Acres from the Agriculture to the Urban District.	DOCKET NO. A97-722 APPLICANT'S MOTION IN LIMINE #4: TO PRECLUDE TESTIMONY OF JAMES WILLIAMSON AS AN EXPERT; DECLARATION OF RANDALL H. ENDO; EXHIBIT "A"; CERTIFICATE OF SERVICE Hearing Date: _____ Place: _____ Time: _____

APPLICANT'S MOTION IN LIMINE #4: TO PRECLUDE TESTIMONY OF
JAMES WILLIAMSON AS AN EXPERT

Applicant MAUI ELECTRIC COMPANY, LIMITED ("Applicant" or "MECO"), by and through its counsel, hereby moves in limine pursuant to the Rules of the Land Use Commission to Preclude James Williamson, a witness on behalf of

Intervenor Maui Tomorrow (the "Intervenor"), from testifying as an expert in air quality, water, fuel and fuel alternatives.

I. BACKGROUND

The Intervenor identified James Williamson ("Williamson") as its witness who will testify in this contested case hearing as an expert in the field of air quality, water, fuel and fuel alternatives. However, Williamson is not qualified as an expert in those areas, and he should be prohibited from testifying as such.

Haw. Rev. Stat. ("HRS") § 91-10(1), governs the admissibility of evidence in contested cases, and provides, in pertinent part, that:

> Any oral or documentary evidence may be received, but every agency shall as a matter of policy provide for the exclusion of irrelevant, immaterial, or unduly repetitious evidence and no . . . order be issued except upon consideration of the whole record or such portions thereof as may be cited by any party and as supported by and in accordance with the reliable, probative, and substantial evidence.

HRS § 91-10(1) (Emphasis added); Haw. Admin. Rule § 15-15-63.

Williamson is listed as an expert in "electric power and water resources" who will testify as to "fuel & alternatives, air quality & water" See Intervenors' Witness List. (Note that Intervenor does not even attempt to qualify Williamson as an expert in air quality; and thus tacitly admits that he is not a qualified expert in that area.)

It will be shown that testimony of Williamson will be neither reliable nor probative, as he is not qualified in any of the specified fields.

II. ARGUMENT

While Williamson is an engineer, he has no expertise in the fields of air quality, water, fuel and fuel alternatives

Certainly, Williamson could be qualified to provide expert testimony in his fields of expertise: hydroelectric power. But expertise in that area does not qualify him to provide expert opinions as to air quality, water and alternative fuels.

Moreover, it appears that he has not conducted any study or prepared any report for this proceeding on any of the specified topics.

A. General Principles Pertaining to Testimony of Expert Witnesses

A longstanding general rule of evidence confines the testimony of witnesses to statements of concrete facts within their own observation, knowledge and recollection--that is, facts perceived by the use of their own senses--as distinguished from their opinions and conclusions drawn from those facts. Generally, a non-expert witness may not testify as to opinions or conclusions, but must confine all testimony to a report of facts.

Expert testimony is used on issues which require scientific or specialized knowledge or experience in order to be properly understood and which are not subject to an intelligent determination simply on the basis of deductions made and inferences drawn from ordinary knowledge, common sense and practical experience gained in the

ordinary affairs of life. On such issues, the testimony of a witness with special knowledge and skill is required in order to arrive at an intelligent conclusion.

Thus, a person qualified by professional, scientific or technical training, or by practical experience, in regard to a particular subject or field of endeavor, which gives him special knowledge not shared by the general public, may testify as an expert on questions pertaining to that field of training and experience. 31A Am. Jur. 2d, Expert and Opinion Evidence.

> Expert testimony is admissible only when the witness is in fact an expert. . . . the expert witness must have such skill, knowledge, or experience in the field in question as to make it appear that his opinion or inference-drawing would probably aid the trier of fact in arriving at the truth.

Larsen v. State Savings & Loan Ass'n., 64 Haw.302, 304 (1982) (citations omitted; emphasis added).

B. Williamson Is Not an Expert in the Field of Air Quality

By omitting air quality as a specialty area for Williamson, Intervenor admits that Williamson is not an expert in air quality. It cannot be denied that he has no education, training or experience in that field. Thus he cannot be qualified in this field.

C. Williamson Is Not an Expert in the Field of "Water"

Intervenors indicate that Williamson will testify as to "water." This generic reference is so vague as to prejudice the Applicant's ability to prepare its

rebuttal. On this basis alone, Williamson should be precluded from testifying as to "water" in whatever sense the Intervenor intended it to take.

In any case, to the extent the Intervenor intended to have Williamson testify as to the impact of the project upon water resources, Williamson is not qualified to testify on that subject.

Williamson's resume (a copy of which is attached hereto as Exhibit "A") clearly indicates that he cannot be qualified as an expert in water resources and impacts thereon. His resume reflects that he has no education, experience or training related to water resources or the impact of a power plant upon water resources.

While his resume reflects training and experience in hydroelectric power generation, it shows no experience or background in analyzing water resources in the context of this present proceeding. Indeed, his work experience appears highly specialized and limited to dams and hydropower.

Based upon the above undisputed facts, Williamson cannot testify as an expert as to water and water resources.

D. Williamson Is Not an Expert in the Field of "Fuel & Alternatives"

Intervenors indicate that Williamson will testify as to "fuel and alternatives." This generic reference is so vague as to prejudice the Applicant's ability to prepare its rebuttal. On this basis alone, Williamson should be precluded from testifying as to "fuel and alternatives" in whatever sense the Intervenor intended it to take.

In any case, for the same reasons discussed above, Williamson is not an expert in fuels and fuel alternatives. Indeed, he has been retired since 1987, and since then has only provided consulting services related to dams and hydropower.

III. CONCLUSION

Williamson is not qualified to testify as a expert in the fields of air quality, water, fuel and fuel alternatives. Therefore, such testimony should be precluded.

DATED: Wailuku, Maui, Hawaii, 4-7-98.

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

Attorneys for Applicant

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAII

In the Matter of the Petition of 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 Hawaii, Consisting of 65.7 Acres from the Agriculture to the Urban District.	DOCKET NO. A97-722 DECLARATION OF RANDALL H. ENDO

DECLARATION OF RANDALL H. ENDO

RANDALL H. ENDO declares:

1. I am an attorney licensed to practice law in the State of Hawaii, and am associated with the law firm of Carlsmith Ball Wichman Case & Ichiki, attorneys for Applicant MAUI ELECTRIC COMPANY, LIMITED.

2. Attached hereto as Exhibit "A" is a true and correct copy of the resume of James Williamson, produced by Intervenor MAUI TOMORROW to the Applicant.

I declare under penalty of law that the above is true and correct.

DATED: Wailuku, Hawaii, 4-17-98, 1998.

RANDALL H. ENDO

JAMES V. WILLIAMSON
CONSULTING ENGINEER
672 KUMULANI DRIVE, KIHEI, HAWAII 96753
TELEPHONE (808) 874-6151 • FAX (808) 874-5305

EDUCATION: Civil Engineering Diploma
Melbourne Technical College, Australia, 1944

Bachelor Civil Engineering
Melbourne University, Australia, 1948

REGISTRATIONS: Licensed Professional Engineer: CA, HI and WA
(Previously licensed in 24 states

LANGUAGE: English
Spanish (Second)

PROFESSIONAL SOCIETIES: Member - United States Committee on Large Dams:

Fellow - American Society of Civil Engineers

MILITARY SERVICE: Australian Army, Sapper (Engineering Corps), 1945

SPECIAL QUALIFICATIONS:

Mr. Williamson has been in professional practice since 1948. In his many years of experience in the United States and abroad, he has specialized in design and construction of heavy civil engineering structures, principally large hydroelectric and multipurpose projects. He has been engaged in investigation and design of about 130 miles of tunnels, 70 powerhouses including 10 underground installations, and 50 dams ranging up to 770 ft high. He has authored or co-authored over 20 technical publications including a number of papers relating to seismic design of dams, and rock mechanics investigations and tests for large underground openings, in addition to several on hydraulics of power conduits and the impact of hydraulic transients.

Prior to his retirement in April 1987 as a Partner of R. W. Beck and Associates, Mr. Williamson was responsible for all of the hydroelectric and other water resources projects undertaken by Beck over the last 18 years both domestically and overseas. His last assignment was Manager of Beck's Western Region and concurrently Director of International Development. In his role as Regional Manager he was also responsible for electrical control systems, transmission and substations, municipal services including roads and streets, solid waste, water and wastewater systems, and construction management.

Since April 1987 Mr. Williamson has provided independent consultant services on water resources projects involving dams, and conventional and pumped storage hydropower. He served on a review panel for several dams, and was special consultant on the rehabilitation of Big Bear Lake dam, all in southern California. He was on the consulting board for the last FERC inspection of State of California's Oroville Project. He is currently on the review panel for the 200 foot high Los Vaqueros water supply dam in the San Francisco bay area. He is chairman of the consulting board for the investigations and design of the 800 MW Parsa pumped storage project at the Dead Sea in Israel. Mr Williamson is also on the consulting board for the State of California's 1995 safety inspection of two groups of dams: Pyramid and Castaic; and Del Valle, Patterson, Clifton Court and Bethany dams.

EXHIBIT 4

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing document was duly served upon the following parties by U.S. Certified Mail, postage prepaid, on the date stated below:

RICHARD EGGED, JR., Director
ABE MITSUDA, Administrator
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Honolulu, HI 96804-2359

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G. STEPHAN HOLADAY
Hawaiian Commercial & Sugar Company
P. O. Box 266
Puunene, Hawaii 96784

MARK SHEEHAN
MAUI TOMORROW
P.O. Box 429
Makawao, HI 96768

DATED: Wailuku, Hawaii, 4-20-98, 1998.

B. MARTIN LUNA
ALLEN R. WOLFF
RANDALL H. ENDO
Attorneys for Applicant

CARLSMITH BALL WICHMAN
CASE & ICHIKI

B. MARTIN LUNA 865
ALLEN R. WOLFF 5876
RANDALL H. ENDO 6567
One Main Plaza, Suite 400
2200 Main Street
Wailuku, Maui, Hawaii 96793-1086
Tel. No. (808) 242-4535

Attorneys for Applicant
MAUI ELECTRIC COMPANY,
LIMITED

ORIGINAL

LAND USE COMMISSION
STATE OF HAWAII
APR 20 2 10 PM '98

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAII

In the Matter of the Petition of 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 Hawaii, Consisting of 65.7 Acres from the Agriculture to the Urban District.	DOCKET NO. A97-722 APPLICANT'S MOTION IN LIMINE #3: TO PRECLUDE TESTIMONY OF STEVEN MOSER AS AN EXPERT IN AIR QUALITY AND AIR IMPACTS; DECLARATION OF RANDALL H. ENDO; EXHIBIT "A"; CERTIFICATE OF SERVICE Hearing Date: _____ Place: _____ Time: _____

APPLICANT'S MOTION IN LIMINE #3: TO PRECLUDE TESTIMONY OF STEVEN MOSER AS AN EXPERT IN AIR QUALITY AND AIR IMPACTS

Applicant MAUI ELECTRIC COMPANY, LIMITED ("Applicant" or "MECO"), by and through its counsel, hereby moves in limine pursuant to the Rules of the Land Use Commission to preclude Steven Moser, a witness on behalf of Intervenor

Maui Tomorrow (the "Intervenor"), from testifying as an expert in air quality and air impacts.

I. BACKGROUND

The Intervenor identified Steven Moser ("Moser") as its witness who will testify in this contested case hearing as an expert in the field of air impacts on health. However, Moser is not qualified as an expert in this area, and he should be prohibited from testifying as such.

Haw. Rev. Stat. ("HRS") § 91-10(1), governs the admissibility of evidence in contested cases, and provides, in pertinent part, that:

> Any oral or documentary evidence may be received, but every agency shall as a matter of policy provide for the exclusion of irrelevant, immaterial, or unduly repetitious evidence and no . . . order be issued except upon consideration of the whole record or such portions thereof as may be cited by any party and as supported by and in accordance with the reliable, probative, and substantial evidence.

HRS § 91-10(1) (Emphasis added); Haw. Admin. Rule § 15-15-63.

Moser is listed as an expert in "air quality & health" who will testify as to "air quality health impacts & related issues" See Intervenors' Witness List.

The testimony of Moser as Intervenor's expert in the field of air quality and air impacts will be neither reliable nor probative, as he is not qualified in this area.

II. ARGUMENT

While Moser is a physician, he has no expertise in the field of air quality and air impacts. Just because someone has some background in medicine does not qualify them to provide expert opinions as to the potential effect of power plant emissions upon people's health. Such testimony would be speculative and not helpful to the trier of fact. The potential effect of emissions upon air quality and the potential impact upon humans is a highly technical science which requires much more than a medical degree.

Certainly, Dr. Moser may be qualified to provide expert testimony in his fields of expertise: internal medicine and nephrology (kidney ailments), but expertise in those areas does not qualify him to speak as to air quality and impacts.

A. General Principles Pertaining to Testimony of Expert Witnesses

A longstanding general rule of evidence confines the testimony of witnesses to statements of concrete facts within their own observation, knowledge and recollection--that is, facts perceived by the use of their own senses--as distinguished from their opinions and conclusions drawn from those facts. Generally, a non-expert witness may not testify as to opinions or conclusions, but must confine all testimony to a report of facts.

Expert testimony is used on issues which require scientific or specialized knowledge or experience in order to be properly understood and which are not subject to an intelligent determination simply on the basis of deductions made and inferences drawn from ordinary knowledge, common sense and practical experience gained in the

ordinary affairs of life. On such issues, the testimony of a witness with special knowledge and skill is required in order to arrive at an intelligent conclusion.

Thus, a person qualified by professional, scientific or technical training, or by practical experience, in regard to a particular subject or field of endeavor, which gives him special knowledge not shared by the general public, may testify as an expert on questions pertaining to that field of training and experience. 31A Am. Jur. 2d, Expert and Opinion Evidence.

> Expert testimony is admissible only when the witness is in fact an expert. . . . the expert witness must have such skill, knowledge, or experience in the field in question as to make it appear that his opinion or inference-drawing would probably aid the trier of fact in arriving at the truth.

Larsen v. State Savings & Loan Ass'n., 64 Haw.302, 304 (1982) (citations omitted; emphasis added).

B. Moser Is Not Qualified to Testify as an Expert in the Field of Air Quality and Impacts

Moser is listed as the Intervenor's expert in the field of air quality and air impacts. However, he has no education, training or experience in that field.

Moser's curriculum vitae (a copy of which is attached hereto as Exhibit "A") clearly indicates that he cannot be qualified as an expert in air quality or air impacts:

a. His curriculum vitae reflects that he has no education, experience or training even remotely related to air quality or the impact of power plant emissions upon air quality and crops.

b. While his curriculum vitae reflects training and experience in internal medicine and nephrology, it shows no experience in conducting air testing, studies, or anything even remotely related to a scientific background in analyzing air quality and air impacts.

c. His curriculum vitae does not indicate that he has ever conducted an air quality analysis of any kind.

d. It appears that he has not conducted any study or prepared any report for this proceeding on any this topic.

Based upon the above undisputed facts, Moser cannot be qualified as an expert to testify as to air quality or air impacts.

III. CONCLUSION

Moser is not qualified to testify as a expert in the field of air quality, impacts of emissions upon air quality and its effects upon humans. Therefore, such testimony should be precluded.

DATED: Wailuku, Maui, Hawaii, 4-17-98.

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

Attorneys for Applicant

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAII

In the Matter of the Petition of 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 Hawaii, Consisting of 65.7 Acres from the Agriculture to the Urban District.	DOCKET NO. A97-722 DECLARATION OF RANDALL H. ENDO

DECLARATION OF RANDALL H. ENDO

RANDALL H. ENDO declares:

1. I am an attorney licensed to practice law in the State of Hawaii, and am associated with the law firm of Carlsmith Ball Wichman Case & Ichiki, attorneys for Applicant MAUI ELECTRIC COMPANY, LIMITED.

2. Attached hereto as Exhibit "A" is a true and correct copy of the curriculum vitae of Steven Moser, produced by Intervenor MAUI TOMORROW to the Applicant.

I declare under penalty of law that the above is true and correct.

DATED: Wailuku, Hawaii, 4-17-98, 1998.

RANDALL H. ENDO

CURRICULUM VITAE
December 1996

NAME: Steven Michael Moser

DATE OF BIRTH: July 28, 1949

PLACE OF BIRTH: Washington, D.C.

ADDRESS:

Home: 1095 Pookela Road
Makawao, Hawaii 96768

Work: 1883 Mill Street
Wailuku, Hawaii 96793

PHONE:

Home: (808) 572-8223

Work: (808) 244-3788

EDUCATION:

College:

St. Johns College
Camino Del Monte Sol
Sante Fe, New Mexico
September 1967 - May 1971
Bachelor of Arts

Stanford University
Stanford, California
July - August 1970 (summer session)
Organic Chemistry Course

Medical School:

University of Texas Southwestern Medical School
at Dallas
Harry Hines Blvd.
Dallas, Texas
September 1971 - May 1975

Internship:

University of Illinois Hospital
Department of Medicine
840 South Wood Street
Chicago, Illinois
June 1975 - June 1976

EXHIBIT A

Internship in Internal Medicine

Residency:

University of Illinois Hospital
Department of Medicine
840 South Wood Street
Chicago, Illinois
July 1976 - June 1978 (1st and 2nd year residency in Internal Medicine)

Fellowship:

University of Southern California--
Los Angeles County Hospital
Department of Nephrology
Los Angeles, California
July 1978 - June 1980
(clinical and research fellowship in nephrology with teaching responsibilities)

Masters of Public Health:

University of Hawaii (HITS)
School of Public Health
Honolulu, Hawaii
September 1993 - present
(in process of obtaining Masters in Epidemiology on Maui using HITS)

WORK:

1980-1981	Internist and Nephrologist at Kaiser Wailuku Clinic
1980 - Present	Internist and Nephrologist in private practice
1991 - Present	Assistant Director -- St. Francis Maui Dialysis Satellite Unit

PROFESSIONAL SERVICES:

1980 - 1983	Continuing Medical Education Committee Maui Memorial Hospital (Chairman -- 1981 - 1983)
1982 - 1989	ICU-CCU Committee at Maui Memorial

Hospital (Chairman -- 1985 - 1989)

1983 - present — Chairman, Nutrition Committee, Maui Memorial Hospital

1988 (two weeks) — Guest lecturer and consultant, Manolo Morales and and Carlos Fonseca Hospitals, Managua

1990 - 1991 — Chairman, Maui Memorial Hospital Autonomy Committee (drafted legislation for self-governance at MMH)

1991 - present — Maui County Management Advisory Committee at Maui Memorial Hospital (Vice Chairman 1994)

1991 — Lecturer on pesticide-induced illness at Hawaii Pesticide Conference sponsored by the State Department of Health

1992 — Lecturer on health and environmental effects of geothermal energy production at annual session of Hawaii chapter of American College of Physicians

1992 - present — Chairman, Maui Memorial Hospital Hospital Operations Committee (evaluation and problem-solving in inter-departmental matters of the hospital)

1993 - present — Organizer and Chairman, Visions 2000 Committee (community needs assessment and strategic planning for Maui Memorial Hospital; series of community conferences)

1993 - present — Member, Tower Committee, Maui Memorial Hospital

1993-1994 — Organizer and participant of Hawaiian Diet Program at Maui Memorial Hospital (17 hospital staff participants placed on traditional Hawaiian foods for three weeks under auspices of Hui No Ke Ola Pono clinical protocol)

HONORS AND AWARDS:

1971 — Thomas J. Watson Foundation Fellowship of Independent Study

1985	Maui County Humanitarian Award
1985	Hawaii Medical Association "Physician of the Year"

CERTIFICATION:

1973, 1975, 1976	National Board of Medical Examiners -- Part I, Part II, Part III
1978	American Board of Internal Medicine
1980	Board Certified in Nephrology

PROFESSIONAL SOCIETIES:

1973	Student American Medical Association (Delegate, National Convention)
1971-1973	Phi Delta Epsilon Professional Society
1976	Associate of the American College of Physicians
1980-1983	Member of the American College of Physicians
1983 - present	Fellow of the American College of Physicians
1983-1984	Maui County Medical Society -- Secretary
1984-1985	Maui County Medical Society -- President
1985	Maui County Medical Society -- Chairman, Public Health Committee
1980 - present	Hawaii Medical Association
1982-1983	Hawaii Medical Association Councillor for Maui
1986-1993	Environmental Health Committee of the Hawaii Medical Association (physicians' committee for environmental concerns such as pesticide contamination of water, air pollution, lead poisoning, medical waste disposal, sewage problems; liaison with Hawaii

Department of Health; lobbying and testimony before the State Legisature; physician education)

1989 - present — Organ Donor Society of Hawaii (Board Member 1994)

1994 — Maui County Medical Society Delegate to Hawaii Medical Association Annual Session House of Delegates

COMMUNITY SERVICE:

1981-1984 — American Cancer Society (President, (1982-1983)

1982-1989 — Mayor's Advisory Committee on the Handicapped

1982-1989 — Physicians for Social Responsibility (physicians anti-nuclear movement, supporting arms control and decreased military spending)

1983-1986 — Peacemoves (anti-nuclear activist and educational group; established nuclear free zone for Maui County)

1984-1987 — Maui Rotary Club Member

1984-1986 — Board of Advisors, State Park at Makena (citizen action group for the public preservation of Big Beach at Makena)

1984-1986 — Safe Solutions (environmental group organizing public testimony in the EIS process opposing Mediterranean fruit fly eradication plan of spraying pesticides, and federal marijuana eradication plan of spraying of herbicides

1988 — Co-plaintiff in state court seeking injunction against Strategic Defense Initiative Relay Mirror Experiment on Haleakala and Kihei

1990 — Co-plaintiff in state court in suit against Puna Geothermal Venture and State of Hawaii Department of Health

(expert witness)

PUBLICATIONS

1. Housestaff and Indigent Black Patients, Forum on Medicine; Vol. 1, July, 1978.

2. Five scientific articles published in the nephrology literature on phosphate metabolism and hormonal changes in acute renal failure (bibliography available upon request).

3. Tamoxifen: A caveat on the con side of the debate, Hawaii Medical Journal, Vol. 52:4, pp. 87-102. April, 1992

4. The Hawaiian Diet at Maui Memorial Hospital, Hawaii Medical Journal, Vol. 53:12, pp. 354-359. December, 1994.

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing document was duly served upon the following parties by U.S. Certified Mail, postage prepaid, on the date stated below:

RICHARD EGGED, JR., Director
ABE MITSUDA, Administrator
Office of Planning
State of Hawaii
P. O. Box 2359
Honolulu, HI 96804-2359

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Deputy Attorney General
Hale Auhau, Third Floor
425 Queen Street
Honolulu, HI 96813

DAVID W. BLANE, Planning Director
Planning Department
County of Maui
250 South High Street
Wailuku, HI 96793

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County of Maui
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JEFFREY SCHMIDT, Esq.
GARY W. ZAKIAN, Esq.
County of Maui
200 South High Street
Wailuku, HI 96793

G. STEPHAN HOLADAY
Hawaiian Commercial & Sugar Company
P. O. Box 266
Puunene, Hawaii 96784

MARK SHEEHAN
MAUI TOMORROW
P.O. Box 429
Makawao, HI 96768

DATED: Wailuku, Hawaii, 4-20-98, 1998.

B. MARTIN LUNA
ALLEN R. WOLFF
RANDALL H. ENDO
Attorneys for Applicant

CARLSMITH BALL WICHMAN
CASE & ICHIKI

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ALLEN R. WOLFF 5876
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One Main Plaza, Suite 400
2200 Main Street
Wailuku, Maui, Hawaii 96793-1086
Tel. No. (808) 242-4535

Attorneys for Applicant
MAUI ELECTRIC COMPANY,
LIMITED

ORIGINAL

LAND USE COMMISSION
STATE OF HAWAII
APR 20 2 09 PM '98

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAII

In the Matter of the Petition of 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 Hawaii, Consisting of 65.7 Acres from the Agriculture to the Urban District.	DOCKET NO. A97-722 APPLICANT'S MOTION IN LIMINE #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"; CERTIFICATE OF SERVICE Hearing Date: _____ Place: _____ Time: _____

APPLICANT'S MOTION IN LIMINE #2: TO PRECLUDE TESTIMONY OF ROY SMITH AND ERIK FRYE AS EXPERTS IN AIR QUALITY AND AIR IMPACTS

Applicant MAUI ELECTRIC COMPANY, LIMITED ("Applicant" or "MECO"), by and through its counsel, hereby moves in limine pursuant to the Rules of

the Land Use Commission to preclude Roy Smith and Erik Frye, witnesses on behalf of Intervenor Maui Tomorrow (the "Intervenor"), from testifying as experts in air quality and air impacts.

I. BACKGROUND

The Intervenor identified Roy Smith ("Smith") and Erik Frye ("Frye") as its witnesses who will testify in this contested case hearing as experts in the field of air impacts on agriculture and health. However, neither Smith nor Frye is qualified as an expert in this area, and both should be prohibited from testifying as experts.

Haw. Rev. Stat. ("HRS") § 91-10(1), governs the admissibility of evidence in contested cases, and provides, in pertinent part, that:

> Any oral or documentary evidence may be received, but every agency shall as a matter of policy provide for the exclusion of irrelevant, immaterial, or unduly repetitious evidence and no . . . order be issued except upon consideration of the whole record or such portions thereof as may be cited by any party and as supported by and in accordance with the reliable, probative, and substantial evidence.

HRS § 91-10(1) (Emphasis added); Haw. Adim. Rule § 15-15-63.

The testimony of Smith and Frye as Intervenor's experts in the field of air impacts and energy alternatives will be neither reliable nor probative, as they are not qualified in this area.

Smith is listed as an expert in "air quality, agriculture resource planning" who will testify as to "air impacts on agriculture and health, energy alternatives." See

Intervenors' Witness List. Frye is listed as an expert in "agriculture and air" who will testify as to "air impacts on farming & related issues." Id.

II. ARGUMENT

While Smith may have work experience in agriculture and Frye may have education in agricultural ecology, but neither has even a scintilla of expertise in the field of air quality and air impacts. Just because someone has some background in agriculture does not qualify them to provide expert opinions as to the potential effect of power plant emissions upon crops. Such testimony would be pure speculation and not helpful to the trier of fact. The potential effect of emmissions upon air quality and the potential impact upon crops is a highly technical science which requires much more than a farming background.

A. General Principles Pertaining to Testimony of Expert Witnesses

A longstanding general rule of evidence confines the testimony of witnesses to statements of concrete facts within their own observation, knowledge and recollection--that is, facts perceived by the use of their own senses--as distinguished from their opinions and conclusions drawn from those facts. Generally, a non-expert witness may not testify as to opinions or conclusions, but must confine all testimony to a report of facts.

Expert testimony is used on issues which require scientific or specialized knowledge or experience in order to be properly understood and which are not subject to an intelligent determination simply on the basis of deductions made and inferences

drawn from ordinary knowledge, common sense and practical experience gained in the ordinary affairs of life. On such issues, the testimony of a witness with special knowledge and skill is required in order to arrive at an intelligent conclusion.

Thus, a person qualified by professional, scientific or technical training, or by practical experience, in regard to a particular subject or field of endeavor, which gives him special knowledge not shared by the general public, may testify as an expert on questions pertaining to that field of training and experience. 31A Am. Jur. 2d, Expert and Opinion Evidence.

> Expert testimony is admissible only when the witness is in fact an expert. . . . the expert witness must have such skill, knowledge, or experience in the field in question as to make it appear that his opinion or inference-drawing would probably aid the trier of fact in arriving at the truth.

Larsen v. State Savings & Loan Ass'n., 64 Haw.302, 304 (1982) (citations omitted; emphasis added).

B. Neither Smith Nor Frye Is Qualified to Testify as an Expert in the Field of Air Quality and Impacts

Smith and Frye have been listed as Intervenors' experts in the field of air quality and air impacts. However, neither "expert" has any education, training or experience in that field.

1. Smith Is Not an Air Quality Expert

Smith's resume (a copy of which is attached hereto as Exhibit "A") clearly indicates that he cannot be qualified as an expert in air quality or air impacts:

a. His resume reflects that he has no education, experience or training even remotely related to air quality or the impact of power plant emissions upon air quality and crops.

b. While his resume reflects experience in farming, it shows no experience in conducting air testing, studies, or anything even remotely related to a scientific background in analyzing air quality and air impacts.

c. His resume does not indicate that he has ever conducted an air quality analysis of any kind.

d. It appears that he has not conducted any study or prepared any report for this proceeding on any this topic.

Based upon the above undisputed facts, Smith cannot be qualified as an expert to testify as to air quality or air impacts.

2. Frye Is Not an Air Quality Expert

Similarly, Frye's resume (a copy of which is attached hereto as Exhibit "B") clearly indicates that he cannot be qualified as an expert in air quality or air impacts:

a. His resume reflects that he has no education, experience or training even remotely related to air quality or the impact of power plant emissions upon air quality and crops.

b. While his resume reflects experience in farming, it shows no experience in conducting air testing, studies, or anything even remotely related to a scientific background in analyzing air quality and air impacts.

c. His resume does not indicate that he has ever conducted an air quality analysis of any kind.

d. It appears that he has not conducted any study or prepared any report for this proceeding on any this topic.

Based upon the above undisputed facts, Frye cannot be qualified as an expert to testify as to air quality or air impacts.

III. CONCLUSION

Neither Smith nor Frye is qualified to testify as a expert in the field of air quality, impacts of emissions upon air quality and upon crops. Therefore, such testimony should be precluded.

DATED: Wailuku, Maui, Hawaii, 4-17-98.

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

Attorneys for Applicant

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAII

In the Matter of the Petition of 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 Hawaii, Consisting of 65.7 Acres from the Agriculture to the Urban District.	DOCKET NO. A97-722 DECLARATION OF RANDALL H. ENDO

DECLARATION OF RANDALL H. ENDO

RANDALL H. ENDO declares:

1. I am an attorney licensed to practice law in the State of Hawaii, and am associated with the law firm of Carlsmith Ball Wichman Case & Ichiki, attorneys for Applicant MAUI ELECTRIC COMPANY, LIMITED.

2. Attached hereto as Exhibit "A" is a true and correct copy of the resume of Roy Smith, produced by Intervenor MAUI TOMORROW to the Applicant.

3. Attached hereto as Exhibit "B" is a true and correct copy of the resume of Erik Frye, produced by Intervenor MAUI TOMORROW to the Applicant.

I declare under penalty of law that the above is true and correct.

DATED: Wailuku, Hawaii, 4-17-98, 1998.

RANDALL H. ENDO
Attorneys for Applicant

Roy H. Smith
P. O. Box 984
Haiku, HI 96708
808-572-1804

OBJECTIVE: To prevent the permanent destruction of farmland.
To promote clean, efficient, appropriately scaled energy systems and consumption habits.

EXPERIENCE/EDUCATION:

Third generation farmer, Ohio
Hay bailer seven summers
Lifelong gardener/mechanic
Machinist and tool & die maker
Electronic/computer technician
Technical reader
Compostarian & practiced pitch forker
Farmer/field research - ADAP-Integrated Farm Development Project, University of Hawaii, 1994
- HOFA Field Trials, Kula Ag Park, 1998
Co-owner, International Plant Medicine Corporation
Consultant on organic farming
Farm manager, Melody Farm, Haiku

INTERESTS:

Technical reading in environmental issues relating to pollution and alternative, sustainable systems
Development of sustainable technologies, *i.e.*, fuel cell, solar & wind generators, hybrid refrigeration systems

AFFILIATIONS:

Board of Directors, Maui Sustainable Farm Alliance, 1990-94
Board of Directors, Hawaii Organic Farmers Association (HOFA), 1997-98
HOFA Certification Committee - Evaluator, 1994-present
Member, Sierra Club

References available upon request.

EXHIPIT

EXHIBIT A

Erik C. Frye
PO Box 1392
Haiku, HI 96708
808-572-6700

OBJECTIVE:

To help resolve the conflict between those who see the best avaialable technology as fossil fuel-dependent combustion technology and those who envision conservation and renewable energy as the best available technology.

EDUCATION:

Bachelor of Science from University of California, Berkeley, 1984
Graduated with Honors from the College of Natural Resources
Degree in Agricultural Ecology, Conservation of Natural Resources
Continuing education and research
Graduate of the Rural Community Leadership Program, 1997

EXPERIENCE:

Owner, Farm Ecology, Orchard Design, Installation, Consultation, 1990-1998
Professional writer, editor, proofreader, researcher, and producer

Information research specializing in current scientific discoveries and technological innovations in the following areas of interest:

- Integrated Pest Management, Organic Agriculture, Reforestation
- Material sciences advances, thin-film photovoltaics, hydrogen turbines, steam turbines, solar-hybrid systems, bundled light emitting diode "bulbs," sulfur light bulbs, sonic refrigeration, rare earth magnetic refrigeration, fuel cells, integrated solar harnessing and architecture, i.e.. facades, curtain walls, roofing, skylights, awnings, canopies, rain screens...electricity and hot water in the same footprint
- Health effects of environmental pollutants, iatrogenic epidemiology, infectious encephalopathies, preventive health care

AFFILIATIONS:

Hawaii Organic Farmers Association, Certification Committee 1994-98
Independent Organic Inspectiors Association, Certification Inspector 1994-98
President, Maui Chapter of the Hawaii Tropical Fruit Growers, 1996-1998
Haiku Community Association, 1990-present

References available upon request.

EXHIBIT B

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing document was duly served upon the following parties by U.S. Certified Mail, postage prepaid, on the date stated below:

RICHARD EGGED, JR., Director
ABE MITSUDA, Administrator
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State of Hawaii
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Hawaiian Commercial & Sugar Company
P. O. Box 266
Puunene, Hawaii 96784

MARK SHEEHAN
MAUI TOMORROW
P.O. Box 429
Makawao, HI 96768

DATED: Wailuku, Hawaii, 4-20-98, 1998.

B. MARTIN LUNA
ALLEN R. WOLFF
RANDALL H. ENDO
Attorneys for Applicant

CARLSMITH BALL WICHMAN
CASE & ICHIKI

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Attorneys for Applicant
MAUI ELECTRIC COMPANY,
LIMITED

ORIGINAL

LAND USE COMMISSION
STATE OF HAWAII
APR 20 2 07 PM '98

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAII

In the Matter of the Petition of 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 Hawaii, Consisting of 65.7 Acres from the Agriculture to the Urban District.	DOCKET NO. A97-722 APPLICANT'S MOTION IN LIMINE #1: TO PRECLUDE ADMISSION OF MAUI TOMORROW'S EXHIBITS 4 & 5; DECLARATION OF RANDALL H. ENDO; EXHIBITS "A" & "B"; CERTIFICATE OF SERVICE Hearing Date: _____ Place: _____ Time: _____

APPLICANT'S MOTION IN LIMINE #1: TO PRECLUDE ADMISSION OF MAUI TOMORROW'S EXHIBITS 4 & 5

Applicant MAUI ELECTRIC COMPANY, LIMITED ("MECO"), by and through its counsel, pursuant to the Rules of the Land Use Commission, hereby

submits this Motion in Limine to prohibit Intervenor Maui Tomorrow ("Intervenor") from introducing into evidence the following:

1. The article entitled "Negawatts: Twelve Transitions, Eight Improvements, and One Distraction", dated 1996, identified as Intervenor's Exhibit "4" (hereinafter referred to as the "Negawatts article", a copy of which is attached hereto as Exhibit "A"), and
2. The Rocky Mountain Institute speech outline dated December 3, 1993, identified as Exhibit "5" (hereinafter referred to as the "Rocky Mountain Speech", a copy of which is attached hereto as Exhibit "B")

Applicant also seeks to preclude Intervenor from introducing any evidence from the Negawatts article or the Rocky Mountain Speech either through argument or testimony of any of Intervenor's witnesses.

I. BACKGROUND

Intervenor intends to introduce the Negawatts article and the Rocky Mountain Speech as evidence in this case. Neither should not be admitted. Since Intervenor will not be calling any of the purported authors of these two documents as witnesses, neither document can be authenticated. Moreover said documents are neither reliable nor probative.

Both documents contain what purports to be expert opinions, but the authors of the documents are not available to be cross-examined. Under the Hawaii

Administrative Procedure Act's ("HAPA") requirement of full and true disclosure, the Intervenors must call the authors as witnesses and Applicants must be allowed to cross-examine them, before the documents can be considered as evidence in this matter.

Intervenors cannot be allowed to sneak in non-qualified expert opionions through the "back door" by proferring these two exhibits into evidence.

II. ARGUMENT

A. Admissibility of Documentary Evidence

A document must meet generally applicable standards of relevance to be admissible. In addition, a written report must be shown to be reliable and competent, by being authenticated. Authentication is the process by which the relevancy of a document is established by connecting it with a person, place or thing and the document is shown to be what its proponent claims it to be.

Although a document must be authenticated to be admissible in evidence, its mere authentication does not mean that it is admissible.

A document which is both relevant and sufficiently authenticated may nonetheless be excluded if its probative value is substantially outweighed by the danger of unfair prejudice or confusion, or by considerations of undue delay, waste of time, or needless presentation of cumulative evidence. 29A Am Jur 2d, Evidence §§1032, 1035.

Haw. Rev. Stat. § 91-10(1), governs the admissibility of evidence in contested cases, and provides that only relevant, reliable and probative evidence shall be considered by the LUC:

> Any oral or documentary evidence may be received, but every agency shall as a matter of policy provide for the exclusion of irrelevant, immaterial, or unduly repetitious evidence and no . . . order be issued except upon consideration of the whole record or such portions thereof as may be cited by any party and as supported by and in accordance with the reliable, probative, and substantial evidence.

Id. (Emphasis added).

B. Both Exhibits Are Inadmissible Because They Cannot Be Authenticated

In the instant case, both the Negawatts article and the Rocky Mountain Speech cannot be authenticated. Intervenor cannot provide any foundation proving that these two exhibits were actually prepared by someone with a proper background and qualifications. Without such authentication, the document could just as well have been prepared by anyone, with no real basis for the opinions given.

C. Admission of the Exhibits Is Prejudicial Because Applicant Will Not Have the Opportunity to Cross-Examine its Authors

Both of the exhibits' probative value, if any, is outweighed by the prejudice to Applicant who will not have the opportunity to examine the authors of the documents as to their qualifications and the basis for the opinions rendered therein. In recognition of the importance of such an examination, Haw. Rev. Stat. §91-10(3) provides:

> Every party shall have the right to conduct such cross-examination as may be required for a full and true disclosure of the facts, and shall have the right to submit rebuttal evidence.

In McCandless v. Water Co., 35 Haw. 314, 320 (1940), the court excluded an exhibit, partially due to the inability of the opposing party to cross-examine, and stated:

> An opportunity for a thorough cross-examination is particularly essential in connection with opinion testimony, especially that coming from experts or alleged experts.

Not allowing the Applicant the opportunity to cross-examine the authors of the Negawatts article and the Rocky Mountain Speech is prejudicial, as Applicant cannot discover all of the bases for the opinions in the speech, and to submit responsive rebuttal evidence.

D. The Rocky Mountain Speech Has No Probative Value

The Rocky Mountain Speech is merely an outline for a speech given in 1993. In such outline form, the text cannot be understood without the author's clarification and explanation of each of the outline terms. However, the purported authors Armory Lovins and Daniel Yoon are not to be called by the Intervenor as a witness. Thus, there is no one to explain this speech outline.

To have another witness, who is not the author, attempt to explain the Rocky Mountain Speech would be highly speculative and without foundation. The Intervenor cannot show that any of its listed witnesses can provide any foundation nor explain any portion of the Rocky Mountain Speech.

III. CONCLUSION

Intervenor cannot provide a sufficient foundation for the admission of the Rocky Mountain Speech and has not given Applicant the opportunity to cross-examine their purported authors. The Rocky Mountain Speech fails to meet even the minimum standards required for the admissibility of documentary evidence and said report should not be admitted as evidence in this matter.

Intervenor voluntarily chose to not include the authors of the Negawatts article and the Rocky Mountain Speech as witnesses. As such, Intervenor must live by the consequences of such choice.

DATED: Wailuku, Maui, Hawaii, 4-17-98.

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

Attorneys for Applicant

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAII

In the Matter of the Petition of 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 Hawaii, Consisting of 65.7 Acres from the Agriculture to the Urban District.	DOCKET NO. A97-722 DECLARATION OF RANDALL H. ENDO

DECLARATION OF RANDALL H. ENDO

RANDALL H. ENDO declares:

1. I am an attorney licensed to practice law in the State of Hawaii, and am associated with the law firm of Carlsmith Ball Wichman Case & Ichiki, attorneys for Applicant MAUI ELECTRIC COMPANY, LIMITED.

2. Attached hereto as Exhibit "A" is a true and correct copy of the article entitled "Negawatts: Twelve Transitions, Eight Improvements, and One Distraction", dated 1996, identified as Intervenor's Exhibit "4" and produced by Intervenor MAUI TOMORROW to the Applicant.

3. Attached hereto as Exhibit "B" is a true and correct copy of the Rocky Mountain Institute speech outline dated December 3, 1993, identified as

Intervenor's Exhibit "5" and produced by Intervenor MAUI TOMORROW to the Applicant.

I declare under penalty of law that the above is true and correct.

DATED: Wailuku, Hawaii, 4-17-98, 1998.

RANDALL H. ENDO

Invited commentary for *Energy Policy* 1996 special issue on the future of DSM 19.VIII.95 revision

Negawatts: Twelve Transitions, Eight Improvements, and One Distraction

AMORY B. LOVINS, DIRECTOR OF RESEARCH
ROCKY MOUNTAIN INSTITUTE

Twelve fundamental transitions are underway in the efficient use of electricity.[1] Six are well along, while the other six remain as a central challenge for the next decade and beyond. Once they are accomplished, the resulting economically efficient use of electricity will reduce by at least severalfold the quantity of electricity needed to provide present services with unchanged or improved quality.[2] This major substitution will be caused by economic fundamentals[3]; the negawatt debate is simply a subtext about whether they are to be recognized or suppressed.

The first six transitions are familiar to practitioners:

1. *From economic theorists' paradise to the real world.* It is now widely, though far from universally, recognized that market failures in buying electrical productivity are real and important. Indeed, some analyses[4] suggest that in certain key arenas, market failure can be more important than market function: the perverse incentives seen by all ~25 parties in the real-estate process so systematically reward inefficiency and penalize efficiency that the United States has already misallocated, at marginal cost, a sum approaching $1 trillion just to air-conditioning equipment and power supplies to run it.[5]

   One of many striking empirical examples of market failure was revealed by Dow/Louisiana Division's implementation of nearly a thousand energy-saving and waste-reducing projects during 1981–93, with audit-confirmed returns on investment *averaging over 200% per year*—falling to double digits, 97%, only in a single year—and with the savings tending in recent years to become *bigger and more profitable* even as real energy prices tended to decline, because the practitioners' learning curve outran the depletion of the "negawatt" resource. Market theory would suggest that such enormously profitable savings should have been automatically achieved much earlier by a sophisticated firm in a cost-conscious industry: there shouldn't have been thousand-dollar bills lying all over the factory floor. But Dow's Ken Nelson found that not only was the floor figuratively

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[1] "Efficiency" in this article is used in the engineering sense—physical services (such as light, torque, or heat) delivered per unit of electricity consumed. In contrast, economists often construe "energy efficiency" to mean "economically efficient use of primary energy to produce aggregate economic output." This profoundly different semantic universe has created much of the divergence between *e.g.* the World Bank and its critics.

[2] A.P. Fickett, C.W. Gellings, & A.B. Lovins, "Efficient Use of Electricity," *Sci. Amer.* 263(3):64–74 (Sept. 1990); A.B. & L.H. Lovins, "Least-Cost Climatic Stabilization," *Ann. Rev. En. Envt.* 16:433–531 (1991); E SOURCE (Boulder CO 80302-5114), *Technology Atlas* series and bimonthly supplements, 1992– ; A.B. Lovins & W.D. Browning, "Negawatts for Buildings," *Urban Land* 51(7):26–29 (July 1992); A.B. Lovins, "The Negawatt Revolution," *Across the Board* (The Conference Board, NY), September 1990, pp. 18–23; E.U. von Weizsäcker, A.B. & L.H. Lovins, *Faktor Vier: Doppelter Wohlstand—halbierter Naturverbrauch*, Droemer Knaur (München), 1995; and other publications, some detailed and technical, of Rocky Mountain Institute (Snowmass CO 81654-9199).

[3] Efficient use of electricity is far cheaper than making more of it[2], usually even at short-run marginal cost (*infra*), and the gap is widening. As customers figure this out, they will naturally want to buy less electricity and more efficiency. The only question is who will sell them the efficiency. Most utilities have figured out (although lately some have temporarily forgotten, as discussed below) that it is a sound business strategy to sell customers what they want before someone else does. Utilities' choice is hence between participation in the negawatt market and obsolescence.

[4] A.B. Lovins, *Energy-Efficient Buildings: Institutional Barriers and Opportunities*, E SOURCE (Boulder CO), SIP-2, November 1992; U.S. Congress, Office of Technology Assessment, *Building Energy Efficiency*, May 1992; M.D. McMahon, E. Hirst, J.G. Koomey, J.E. McMahon, & A.H. Sanstad, *Energy Efficiency, Market Failure and Government Policy*, LBL-35376 (Lawrence Berkeley Laboratory) and ORNL/CON-383 (Oak Ridge National Laboratory), 1994.

[5] *I.e.*, that much capital (two-thirds of it for 200 GW_p of supply) would have been saved if the buildings had instead been optimally designed to deliver the same or better comfort in the cheapest way: D. Houghton *et al.*, *The State of the Art: Space Cooling and Air Handling*, E SOURCE (Boulder CO), 1st ed., 1992, at pp. xviii, 7–8, 36–40.

EXHIBIT A

carpeted in them, but as soon as he picked one up, he found two more underneath. Or to use another metaphor: not only did he find profuse low-hanging fruit, but the more he picked, the heavier with new fruit the boughs became. This is now a common experience for advanced practitioners in almost any electricity-using facility. Theoretical economists should get used to it. (PS: Nelson retired in 1993; his coordinating group was disbanded; data-tracking ceased, so management's claims that the program still lives cannot be validated. Apparently not even Dow's adjacent Texas Division went very far in adopting similar practices, because it had no corresponding internal "champion.")

2. *From supply extrapolation to end-use/least-cost.* Modern utilities no longer project aggregated demand and build to meet it. Rather, they appreciate that future demand for electrons is not fate but choice, and should represent market clearing (or its emulation by other means) between marginal supply of more electrons and marginal improvement in the productivity of converting electrons into end-use services. Modern utilities therefore ask how much of which specific end-use services customers may want, such as hot showers and cold beer, then seek to enable customers to meet those needs in the cheapest way through a least-cost mix of energy productivity and energy supply, optimizing the scale and quality of supply to the task's requirements. This is the essence of the Integrated Resource Planning required by the U.S. National Energy Policy Act 1992, §111, and of the principles unanimously adopted in 1989 by the National Association of Regulatory Utility Commissioners, although it can certainly be done in a decentralized and market-oriented fashion rather than by planners.

3. *From residential to all sectors.* Almost all utilities have found that although large and attractive residential opportunities remain, the biggest and cheapest savings are largely in the commercial and industrial sectors. These tend to dominate programs driven by economic rather than political criteria.

4. *From load management to efficiency.* Load management saves only generating and grid capacity. End-use efficiency saves capacity, usually more than it saves energy, but it *also* saves energy (hence fuel) and pollution. It's better to have all three benefits than just one. Load management is thus best seen, in general, as a useful adjunct to prior comprehensive efficiency efforts, not as the dominant or only form of demand-side investment.[6] Real-time pricing does not vitiate and may well strengthen this conclusion.

5. *From claimed to measured savings.* Many if not most utility efficiency programs now use the highly developed evaluation methods that can check cost-effectiveness and improve design. Any system without feedback is stupid, by definition, and any program without some sort of evaluation is probably suboptimized.[7]

6. *From sticks (exhort but punish efficiency) to carrots (reward efficiency).* Modern utilities and utility regulators understand that "sticks painted orange"[8] are no substitute for juicy carrots. So long as electricity prices are formed in a way that ties utilities' profits to how much energy they sell and that gives utility investors no share of the savings the utilities achieve, utilities will be understandably averse to investing in efficient end-use even when it's cheaper than just *running* existing thermal power plants. Such societally silly incentives prevail virtually worldwide except for about a half-dozen of the United States, which in various ways decouple utilities' profits from their sales volumes and let them share in the savings they create for their customers. Absent such fundamental reform of incentives, enormous misallocations of utilities' capital are both encouraged and guaranteed, even with such minor regulatory palliatives as lost-revenue adjustments or rate-of-return kickers.

This is not to say that all controversy over these matters has vanished. On the contrary, a few critics continue to infer from some specific and apparently costly programs that electric efficiency programs *in general* do or must have

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[6] This article avoids the catch-all term "DSM" (demand-side management). It was invented by Clark Gellings at EPRI, which serves many diverse masters, to embrace *any* action that affects demand, whether by increasing or decreasing it or by changing its temporal pattern. A term so broad is hardly unambiguous enough to be helpful.

[7] That said, the voluminous evaluations provided by large industry that has sprung up to jump through regulatory hoops—evaluations sometimes costing more than the programs being evaluated—often seek greater precision than is necessary, desirable, or valid, and may rest on shaky theoretical grounds: "free riders," for example, deserve far *less* attention than they have received (A.B. Lovins, "Apples, Oranges, and Horned Toads," *El. J.* 7(4):29–49 [May 1994], at p. 37 and its nn. 5–6, and E. Hirst & J. Reed, *Handbook of Evaluation of Utility DSM Programs*, ORNL/CON-336, Oak Ridge National Laboratory [Oak Ridge TN], 1991).

[8] This phrase is Steve Wiel's when he was a Nevada Public Service Commissioner.

poor cost-effectiveness.[9] An enormous and often sophisticated literature on program evaluation, *e.g.* in the annual Chicago proceedings, shows the contrary, as do many helpful compilations comprising large numbers of programs.[10] For example:

- a survey of careful evaluations performed on 158 California DSM programs or program segments found measured savings equal to 93–112% of predicted savings[11];
- the CPUC's Division of Ratepayer Advocate found that during 1991–94, the entire DSM portfolio of all three major California investor-owned utilities saved electricity at an average program cost that fell from about 2.8 to 1.9 current ¢/kWh (Southern California Edison Company was the cheapest, falling from 2.6 to 1.2¢/kWh and averaging 1.7¢/kWh)[12]; and
- the CPUC itself found $1.9 billion in *net* benefits from those programs during 1990–93 (equivalent on the same basis to $2.2 billion through 1994, corresponding to $1.5 billion separately found for New York State).[13]

However, even the most rigorous and independent evaluation is useless if critics reject it, often without even reading it, as obviously "biased" by the evaluators' desire to continue to be hired to do evaluations. (On this tendentious basis, no financial accounts of public companies should be accepted either.) Few critics of efficiency programs have taken the responsibility to acquaint themselves with the evaluation literature; if they had, they would hardly argue simultaneously that evaluation must be done, has not been done, has been done, and cannot be trusted.

These simmering disputes about cost-effectiveness, though they continue to obscure policy discussions, are by now largely confined to the uninformed and the ideologically motivated. Whether at the highest levels of aggregation, like EPRI and EIA compilations of total investment and savings each year, or at the most program-specific level, nearly all utility investments in electric efficiency beat long-run marginal supply cost by manyfold, and most—the main exceptions being some residential shell improvements—also beat short-run marginal supply cost. However, the critics do have a point: most utility efficiency programs, even if cost-effective, could be far *more* cost-effective if both their technical content and their mode of delivery were improved. That critique, which I have been advancing for the past couple of decades, is today more true than ever, even for the best-regarded utility efforts, and lies at the heart of the six new transitions that now challenge practitioners:

7. *From fragmented measures to integrated packages.* Most designers design, most clients buy, most vendors sell and install, most utilities reward, and most regulators analyze and require efficiency improvements *component by component*, requiring each part separately to meet a marginal cost-effectiveness test based on energy savings alone. This slice-and-dice approach is now known to yield electrical savings *severalfold smaller and costlier* than they would be if obtained as an integrated package of measures credited with a wider set of tangible, carefully measured benefits. This is because successive measures applied to a given technical system are *not* independent of each other, but often strongly interactive, and because the interactions often yield important new benefits, especially by making costly equipment smaller, simpler, cheaper, and even unnecessary. For example:

    - In Pacific Gas and Electric Company's "ACT^2" experiment (the Advanced Customer Technology Test for Maximum Energy Efficiency), a new house was built in Davis, California, with no heating or cooling equipment, yet with superior comfort despite ambient temperatures up to 40°C design and 45°C peak. Neglecting occupant-supplied plug loads, all the major uses—space and water heating, space cooling, re-

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[9] Serious problems in perhaps the most prominent such contention are surveyed by Lovins, "Apples, Oranges, and Horned Toads," *op. cit. supra*—which also agrees that most programs cost much more than optimized ones would.

[10] *E.g.*, S. Nadel, *Lessons Learned*, N.Y. State Energy Res. & Devel. Authority 90-8 (American Council for an Energy-Efficient Economy, Washington DC, 1990), or the very thorough 1994 evaluation of California programs at the behest of that State's Public Utilities Commission (see CPUC Decision 93-09-078, 17 September 1993).

[11] M. Brown & P. Mihlmester, "Summary of California DSM Impact Evaluation Studies," 11 August 1994 report to California DSM Measurement Advisory Committee. The results are from 1990–92.

[12] June 1995 compilation by Peter Miller, Natural Resources Defense Council (San Francisco). Costs include program outlays and administration, shareholder incentives, measurement and evaluation, and free riders, but not free drivers or customers' share of the investment; on nationwide average utilities typically pay ~50% of total cost.

[13] CPUC 93-09-078, *loc. cit.*, including CPUC correction for lower avoided costs; New York evaluation summary by Jim Gallagher, in press, August 1995.

frigeration, and lighting—were designed to use ~20% of the energy allowed by the strictest energy code in North America. Yet in a mature market, rather than a one-off experiment, the marginal construction cost of this design was calculated to be ~$1,800 *less* than normal, and the present-valued maintenance cost ~$1,600 *less* than normal. The last seven measures needed to eliminate the last one-third of the air-conditioning capacity had been previously screened out as not "cost-effective," meaning that they didn't save enough *energy* to pay for themselves; yet when also credited with their saved *capital* cost from eliminating the last ~$1,500 worth of air-conditioner and ductwork, they *were* cost-effective.

- Over a decade earlier, Rocky Mountain Institute had similarly shown reduced construction cost from eliminating the heating system in a climate going to –44°C: the marginal cost of superinsulation, superwindows, and ventilation heat recovery was less than the avoided capital cost of the furnace and ductwork.
- Both these cases illustrate how single expenditures can yield multiple benefits: energy savings, capital savings, and in some cases other values (*e.g.*, spectrally selective glazings improve radiant comfort, permitting a re-setting of the thermostats and thus saving still more energy). Even more kinds of quantifiable engineering-economic benefits are available: superwindows have ten main kinds, premium-efficiency motors 12, dimmable electronic ballasts 18. Yet standard engineering methodology wrongly counts *only one* (direct energy savings). When other benefits are also counted, such as avoiding capital costs by downsizing or eliminating mechanical equipment, it is quite common to find that *big energy savings can be cheaper than small energy savings.*[14] Because multiple benefits from single expenditures are quite common with good engineering, such a downward-dipping supply curve of the efficiency resource, "tunneling through the cost barrier," has now been observed[15] in big and small buildings, hot and cold climates, new and even retrofit buildings, motor and lighting systems, hot-water systems, computer design, and even car design.[16]
- Another way to make big savings cheaper than small ones is to do a retrofit when some other major improvement must be done anyhow, such as renewing a building's exterior skin or renovating its mechanical equipment or glazings because of aging or other needs such as displacing chlorofluorocarbons. The energy-saving retrofit can then be advantageously coordinated with the improvements that are needed anyhow.
- An example combining these two concepts—multiple benefits and optimal timing—is the recently described design of a retrofit for a large, 20-year-old curtainwall office building with failing glazings in a severe (Chicago) climate.[17] Replacement superwindows could insulate four times as well, admit six times as much daylight but 10% less unwanted solar heat, and at least double sound attenuation, yet cost scarcely more. Combined with deep daylighting and with efficient lighting systems and plug loads, the reglazing would reduce cooling loads by nearly fourfold. But the mechanical systems, being also 20 years old, needed renovation. Retrofitting them instead to nearly four times the original system efficiency would cost 2½ times more *per ton* but one-third less *in total* because of the almost fourfold decrease in tonnage. Respending that saved renovation cost on the superwindows and the lighting retrofit would then yield a 75% predicted saving, with a simple payback ranging from –5 to +9 *months*.

8. *From equipment to applications and* then *equipment.* Most designers think of a lighting retrofit as modifying the existing lighting equipment: in the case of a tubular-fluorescent ceiling troffer, perhaps installing imaging specular reflectors, dimming electronic ballasts, T-8 tristimulus-phosphor lamps, and dimming and occupancy controls. This sensible package saves ~70–90% of lighting energy, yields unchanged illuminance with greatly improved quality and aesthetics, and has a technical cost that pays for itself (against 5¢/kWh electricity) in about 1½ years with, or up to 4 years without, credit for its saved maintenance and air-conditioning costs.[18]

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[14] The standard theoretical assumption that the supply curve of the efficiency resource is monotonic upwards is often empirically untrue even at a *component* level. Data collected by Evan Mills for Swedish refrigerators, by RMI for TVs, by the University of Lund for industrial pumps, and by E SOURCE for 5.1–20-ton rooftop chillers and for 1-, 10-, and 100-hp NEMA Type B 1800-rpm asynchronous motors shows *no* correlation between efficiency and price.

[15] A.B. Lovins, "If You Think Education Is Expensive, Try Ignorance," address to E SOURCE Corporate Energy Managers' Consortium, 6 June 1994 (RMI), and experimental results of PG&E's ACT^2 experiment.

[16] Technical publications of The Hypercar Center, Rocky Mountain Institute ('hypercar@rmi.org').

[17] A.B. Lovins, "The Super-Efficient Passive Building Frontier," *ASHRAE J.* 37(6):79–81 (June 1995).

[18] A.B. Lovins & R. Sardinsky, *The State of the Art: Lighting*, RMI/COMPETITEK, 1988, illustrated in Fickett *et al.*, *loc. cit. supra*, and broadly consistent with other analyses, *e.g.* M.A. Piette, F. Krause, & R. Verderber, *Technology Assessment, Energy-Efficient Commercial Lighting*, LBL-27032, Lawrence Berkeley Laboratory (Berkeley CA),

But it is *not* the right thing to do first; rather, it is only the sixth of seven steps (the seventh being improved training, maintenance, and management of the lighting system). The first five steps, often omitted, are:

- Improve the quality of the visual task.
- Improve the geometry (*e.g.*, source/task/eye relationship) and the cavity reflectance of the space.
- Reduce veiling and discomfort glare so as to improve lighting quality and contrast.
- Provide the right amount of the light on task for the task and viewer, with proper luminance ratios.
- Harvest passive (natural) lighting where feasible and cost-effective.

Similarly, many mechanical engineers called upon to improve the efficiency of cooling a large building will propose a more efficient and variable-speed chiller, variable-air-volume distribution with variable-frequency inverter drives for the supply fans, and the like. But while often valid, these improvements should be only the fifth step of seven in a logical cooling sequence. The previous four are:

- Expand the range of conditions in which people feel comfortable, by exploiting such variables as radiant comfort, turbulent air movement, and use of ventilative rather than insulating chairs.
- Reduce cooling loads by severalfold through better glazings, lights, plug loads, building-shell albedo, vegetative shading, surrounding microclimate, etc. In new buildings, architects can also exploit such important variables as siting, built form, orientation, massing, and shading.
- Exploit passive cooling—ventilative, radiative, and ground-coupling.[19]
- If needed, harness alternative cooling—evaporative, absorption, desiccant, and combinations of these.

Only after these first four steps should the designer make the refrigerative system more efficient (if it's still there), followed by improved controls and last perhaps by coolth storage if there's anything left to store. Yet most designers pursue these steps in reverse order and miss all the potential capital-cost savings.

Or yet again, if an engineer is trying to make a motor/pump system more efficient, the best place to start is by asking how much flow is required, and when, for an optimal process optimally controlled; then with how little friction that flow can be delivered through required pipes and valves (laying out the pipes first, then the equipment); then by seeking the optimal size and performance of the pump, then the drivetrain, then the motor, then the inverter, then the electricals. Energy saved at each step will avoid the compounding losses of delivering energy *to* that step in the pumping process, multiplying any energy savings achieved at the downstream (flow) end. It is therefore not unusual for a unit of saved flow to save *nine* units of fuel at the power station. Even more importantly, avoiding compounding losses often makes the expensive upstream components (pump through electricals) severalfold *smaller* and cheaper. Skilled downstream-to-upstream redesign of pumping systems in big buildings can cut pumping energy by ~90%, reduce equipment sizing severalfold, reduce whole-system capital cost, and improve reliability, controllability, and performance.[20] But capturing these energy and capital cost savings requires whole-system engineering with meticulous attention to detail, and as noted below, that is not what most clients today expect, request, reward, or receive.

9. *From engineered delivery to market-making.* Utilities in the 1970s tended to decide what efficiency improvements their customers should have, then deliver them directly ("We will wrap your water heater"). Utilities in the 1980s tended to let customers choose and buy the equipment, but still wanted to decide themselves what choices would be rewarded ("We will rebate each electronic ballast"). The best utilities in the 1990s build on the considerable achievements and flexibility of classical implementation programs: targeted and general information, rebates throughout the value chain (designer, manufacturer, wholesaler, retailer, installer) and for scrappage, rewards for beating minimum standards, concessionary loans, gifts, "golden carrot" contests to bring innovations to market sooner, equipment leasing, and third-party investments such as performance contracts. However, although these techniques can maximize participation and savings per participant, they cannot also maximize competition in who saves and how, so as to keep driving costs down and quality up. To

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1989, and with field experience. Most retrofitters omit important elements of the package, fail to take proper credit for some of the measured savings mechanisms, and hence save less but at a higher unit cost than they should.

[19] These are surprisingly effective in most climates: one can maintain ASHRAE comfort in summer in Miami with nothing more than a roof pond and a ceiling fan. J. Cook, *Passive Cooling*, MIT Press (Cambridge MA), 1989.

[20] Lee Eng Lock, Technical Director, Supersymmetry Services, Singapore, personal communications, 1989–95.

achieve this requires not simply marketing negawatts but also making markets *in* negawatts: making saved electricity into a fungible commodity subject to competitive bidding, arbitrage, secondary markets, derivative instruments, and the other mechanisms that work for other commodities. To this end, utilities have developed bidding processes ranging from industrial modernization grants (to those customers who offer to save the most electricity per dollar of grant) to all-source bidding; ways to resell and wheel savings between customers, utilities, and even nations; ways to repurchase from customers both reduced demand and reduced uncertainty in demand—both resources that merit markets in which to express their value; ways for electric or gas utilities to sell electric efficiency in each others' territories; and performance-linked hookup fees or "feebates" (when you connect to the grid, you pay a fee or get a rebate; which and how big depends on how efficient your usage is; and the fees pay for the rebates—a system that is attractively revenue-neutral, yet unlike building standards, elicits continuous improvement).[21] Spot, futures, and options markets in both watts and negawatts cannot be far behind, with all the arbitrage opportunities they imply. The most attractive directions for utilities' efficiency programs clearly lie in these market-transformation directions...bringing us to the next opportunity.

10. *From promoting hardware to correcting market failures.* Making buildings far more efficient requires seeking "trimtabs" to correct perverse incentives: *e.g.*, rewarding architects and engineers for what they *save*, not for what they spend.[22] But it also means fundamental reforms in the dis-integrated design process[23], and replacing obsolete, fragmented rules-of-thumb with true whole-system optimization.[24] For example, pipes are normally sized using rules-of-thumb that count avoided pumping energy but not avoided *sizing* and hence capital cost of the pump-system components (pump, drivetrain, motor, inverter, electricals); yet those are by far the costliest parts. Similarly, most large U.S. buildings lose ~4–8% of their metered electricity before it reaches the load terminals—because wire size is specified by the low-bid electrician who is told to meet code, and the National Electrical Code's wire-size table is meant to prevent fires, not to save money; it's implicitly optimized at an order of magnitude below typical electricity prices. The economic optimum is to make the wire at least twice as fat, therefore with one-fourth the losses of the size normally installed.[25] Such egregious design errors are not unusual in the rules-of-thumb now used to size not only wires and pipes but also pumps, fans, motors, insulation, heat exchangers, and almost every other technical element that now wastes electricity.

11. *From engineering/economic models to the often different insights of energy anthropology.* Compelling evidence from this new discipline shows that both the engineering and the economic models of human behavior used to design efficiency programs and apparatus are often not only incomplete but also seriously misleading. For example[26], most people in hot apartments, if given free air conditioners and free electricity, will *not*, as economic theory predicts, turn on the air conditioner when they feel hot and set its thermostat at a temperature at which they feel comfortable. Only about 25–35% of American subjects behave in that way. Most, if they run the air conditioner at all, will instead do so in a way only very peripherally related to comfort, but rather depending mainly on household schedules, folk theories about how air conditioners work, general strategies for dealing with machines, complex belief systems about health and physiology, noise aversion, and (conversely) wanting white noise to mask outside sounds that might wake the baby. To be sure, both the engineering and the economic models of energy-using behavior are useful. But as any marketer knows, not giving at least equal weight to the complexities of human behavior wastes opportunities and risks unpleasant surprises.

12. *From marginal economics to qualitative superiority.* For decades if not centuries, engineering economics has balanced the cost of an efficiency improvement against the present value of the *energy* it will save. The resulting mindset of diminishing returns is not only incorrect in engineering terms (please see #7 above); it also misses an even more important point, namely that energy savings may be not the main economic motive for saving energy, but a rather minor byproduct of achieving a far more valuable result: not environmental or

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[21] A.B. Lovins & M. Shepard, "Financing Electric End-Use Efficiency" and "Customer Behavior and Information Programs," RMI/COMPETITEK, 1989.

[22] *Energy-Efficient Buildings: Institutional Barriers and Opportunities*, *op. cit. supra.*

[23] *Id.; cf.* W.D. Browning, "NMB Bank Headquarters," *Urban Land*, pp. 23–25 (June 1992); D.L. Barnett & W.D. Browning, *A Primer on Sustainable Building*, RMI, 1995.

[24] "If You Think Education Is Expensive, Try Ignorance," *op. cit. supra.*

[25] Ned Brush has calculated a socially optimized wire-size table for the Copper Development Association (NY).

[26] A.B. Lovins, *Air Conditioning Comfort: Cultural and Behavioral Aspects*, E SOURCE (Boulder CO), SIP-1, 1992, citing chiefly research led by Willett Kempton and Loren Lutzenhiser.

other social externalities in the usual sense, but some extremely valuable *joint outputs* of the energy-saving action, such as improved quality and productivity. For example, a typical American office pays about 100 times as much for people as for energy. A 1% increase in labor productivity would therefore have the same bottom-line value as eliminating the entire energy bill. Yet eight compelling case-studies from offices, shops, and factories have recently shown labor-productivity gains of *6–16%* from well-designed energy-saving improvements that also happen to improve visual, thermal, or acoustic comfort.[27] Such data had not previously been collected because of the pervasive mythology of the Hawthorne effect, which supposedly showed that only management methods, not working conditions, affect productivity. (In fact, the Hawthorne experiment never showed that, and it wasn't statistically valid anyhow, but its mythology lingers.) There is now, in short, good reason to believe that many important kinds of electricity savings are about an order of magnitude more valuable than would have been concluded from their energy value alone. This in itself should propel a revolution in how negawatts are marketed. Saved energy costs may be the *least* important benefit.

Collectively, these transitions imply a broad and important slate of new opportunities to make negawatts even cheaper, more numerous, and more valuable than their strongest advocates might have supposed a year or two ago. For completeness, the resulting agenda is summarized next. It omits such obvious, helpful, and insufficient solutions as proper pricing.[28]

Eight Ways To Make Negawatts Work Better and Cost Less

A. More bang per buck: better technological content. This means more modern and better selected technologies, bundled into integrated packages and counting all relevant benefits (see #7 and #12 above), and done in the right sequence—application before equipment (#8 above).

B. More bang per buck: better program designs. Some rebates should be restructured to go further upstream so as to capture the leverage of manufacturer/wholesaler/retailer markups. Inefficient old equipment should be scrapped so it doesn't reënter secondary markets and have to be retrofitted out again. Free drivers should be maximized via effective outreach so more people follow paid participants' good example without payment (and evaluation methods should be modified so this valuable spinoff is rewarded, not penalized). Free riders may also be worth maximizing to transform markets, as B.C. Hydro did to switch its big-motor market from standard- to premium-efficiency models.[29] Program design should maximize competition and innovation (#9 above) and should slash transaction costs. Important, very inexpensive new opportunities beckon in often-neglected human-capital and organizational-process areas: operation and maintenance, commissioning, training, and education. Today's soft commercial leasing markets and the need to displace CFCs offer exceptional new marketing opportunities for well optimized efficiency packages—especially if such attributes as productivity, waste minimization, quality, amenity, productivity, and pollution prevention are marketed at the same time.

C. Bootstrap from savings elsewhere in the utility. A package of ~35 improvements to typical industrial motor systems can save ~50% of their metered energy (per unit of input torque to the driven machine) with a simple payback under ~16 months at a 5¢/kWh tariff.[30] The saving is so cheap because purchasing seven kinds of improvements typically yields a further ~28 as free byproducts. Savings further downstream, in and beyond the driven machine (such as a pump or fan), are often even larger and cheaper, and should be done first so as to capture the compounding savings in equipment sizing and cost upstream (#8 above). But such opportunities are not confined to *customers*: they should be demonstrated first by *utilities* in their own facilities, from HVAC to power-plant auxiliary drives. EPRI case-study retrofits, for example, showed many years ago the dramatic energy and cost savings available from variable-speed drive of induced draft fans and condenser feedwater pumps. Yet astonishingly few utilities have followed that example and improved their thermal power stations' heat rate, load-following ability, and availability. Money so saved could bootstrap even more savings for both utilities' own operations and their customers'.

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[27] J.J. Romm & W.D. Browning, *Greening the Building and the Bottom Line*, RMI, 1994, Publication #D94-27.

[28] R. Cavanagh, "Energy-Efficiency Solutions: What Commodity Prices Can't Deliver," *Ann. Rev. En. Envt.* 20:519–525 (1995), in press.

[29] T. Flanigan & A. Fleming, "BC Hydro Flips a Market," *Publ. Utils. Fortn.*, pp. 20–22 & 34 (1 August 1993).

[30] A.B. Lovins *et al.*, *The State of the Art: Drivepower*, RMI/COMPETITEK 1989. EPRI reached a similar conclusion by a somewhat different route a year later (Fickett *et al.*, *op. cit. supra*).

Similarly, "precision-guided programs" that target customer efficiency in the specific areas and end-uses that can best defer or avoid costly expansions of grid (especially distribution) capacity can save extraordinary capital sums that can again be reinvested in customer efficiency without increasing pressure on electricity prices. At Ontario Hydro, the first three case-studies of this approach cut capital intensity by up to 90% and saved ~US$0.5 billion net.[31]

Further opportunities include retrofits of utilities' office and other non-power facilities, thus reducing General and Administrative costs and perhaps improving labor productivity (#12 above). In some cases, too, savings by utilities *or* their customers may enable utilities to free up and monetize emission rights under emission trading systems.

D. Get participating customers to pay more. This furrow has been thoroughly if not excessively plowed. Salient examples include Central Maine Power's industrial modernization grants; shared-savings programs such as PacifiCorp's FinAnswer, hybrids such as Southern California Edison's ENvest, the Land and Water Fund's bonus concept, and Wisconsin Electric Power Company's end-use pricing; rebate/loan choices (Burlington Electric, Wisconsin Power & Light); and leasing (Alberta Power). In general, performance has fallen short of expectations, but the concept merits further exploration and improvement, so long as it does not unduly shrink participation rates by creaming off only those few customers with the lowest implicit discount rates—the business opportunity, after all, is arbitrage on the spread between the utility's and the customer's discount rate—or imposing entry fees that suppress participation to an extent that sacrifices important system benefits.

E. Get third parties to pay more. Energy service companies are familiar, and even dominate a few sectors such as the provision of commercial buildings' heating in France. "Virtual ESCos" could also wheel saved power between customers and utilities. Revenue-neutral feebates (#9 above) pay for savings from charges on those whose inefficient choices increase system cost. Multi-resource consortia can pay for electric savings from collateral benefits such as saving—in the case of, say, a superefficient washing machine—most of its water and sewage flows, chemical discharges, and landfill space (if it's more durable, remanufacturable, or recyclable), while providing local manufacturing jobs and capturing their multiplier. Marketing partners may be willing to pay for access to a utility's customers for their own purposes, or to provide to those customers other valuable concessions that help to market the efficiency program.[32] And advanced energy retrofits' potential to turn around distressed commercial properties may be a welcome lifeline to financial institutions saddled with nonperforming assets.

F. Pay for efficiency from new profit centers which it creates. For example, part of an intelligent response to real-time pricing[33] could be the installation of highly capable near-real-time meters, perhaps like the Metricom/Landis & Gyr type that uses packet-switching radio. Such a network is amply cost-justified by its internal benefits to the utility, but also happens to come with extra bandwidth that can be sold or leased to telecommunications firms. Moreover, some of the benefits of such metering may be quite surprising. Of course the utility expects to pay for the meters and radios through savings on meter-reading, remote connect/disconnect, emergency response, load management, and instant resolution of customer complaints about meter accuracy. But who would have guessed that SCE's 3,000-meter NetComm experiment would find that one-fifth of the test homes were miswired, with no functional ground or with ground and neutral interchanged—or that just having retail-meter-level real-time voltage information systemwide could improve substation-level voltage control enough to save 1 TW-h/y of generation?

G. Incentivize utility staff. Just as utilities should be rewarded for cutting customers' bills, not for selling more energy, so should their staff members who are responsible for helping customers to use electricity more productively.

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[31] John Fox (General Manager of Hydro's downstream half), personal communications, 1994–95; N. Lenssen is also preparing a 1995 E SOURCE Strategic Issues Paper on this experience. When Mr. Fox previously ran PG&E's efficiency programs, its first effort at precision-guided programs, the Delta Project, largely failed for site-specific reasons. But at Hydro, Mr. Fox later proved the concept sound and successful.

[32] *E.g.*, when Janet Benjamin was a marketing consultant to B.C. Hydro's PowerSmart program, she found that a major bank, seeking new mortgage relationships, was willing to reduce its construction- and mortgage-loan interest rates for PowerSmart customers, while a major lighting-equipment manufacturer would equip for free one house for every ten equipped with its PowerSmart-compliant products.

[33] J. Newcomb & W. Byrne, *Real-Time Pricing and Electric Utility Industry Restructuring: Is the Future "Out of Control?"*, E SOURCE (Boulder CO), SIP-5, April 1995.

Incentives work. At one utility that started paying a $1 bounty for every kilowatt saved, the volume of savings achieved (verified by *ex post* audit) went up and their cost went down—both by an order of magnitude.

H. Rethink the conceptual foundations of saving electricity. Harnessing the new social-science insights emerging from energy anthropology (#11 above) is an important new tool. Potentially even more powerful is the detailed process analysis of how market failures happen (*e.g.*, the buildings example mentioned in #1,10 above). More than one alert utility, on studying that analysis of perverse incentives, has decided to redesign its commercial-sector efficiency efforts from scratch: paying several years' worth of energy savings to the design team, they felt, could displace far larger rebates for using efficient equipment. After all, the efficient equipment usually cost less[34], but either the designers didn't know how to specify and obtain it or, if they did, they knew that their fees (based on the *cost* of equipment specified) would fall while their effort went up, yielding a negative profit on the engagement. If that perverse incentive in design professionals' compensation is corrected, then it should no longer be necessary, in general, to rebate the equipment they specify.

Collectively, these eight classes of approaches provide an extremely powerful menu of ways to get far bigger and cheaper savings than any utility now does, and to do so at lower cost and hence with less potential for upward short-term pressure on electricity prices.[35] The resulting better, cheaper, and faster gains in the productivity of using electricity will benefit everyone, under *any* evolution of the utility system. In fact, this point is so fundamental that it bears emphasis in concluding remarks about the wider context of this issue of *Energy Policy.*

Retail Wheeling: Big Noise on Stairs, Nobody Come Down

It has lately become fashionable to premise discussions of the future role of electric efficiency on the notion that a century of utility structure and regulation, especially in the United States, is being rapidly swept away by a surging torrent of retail wheeling (the ability of any customer to buy electricity from any supplier), usually considered synonymous with "deregulation."[36] While, as will be seen, I agree that the utility industry is in for even more wrenching change than advocates of retail wheeling propose, I think the premise that this change will be manifested as retail wheeling, let alone that retail wheeling is synonymous with deregulation[37], is false to a degree that its advocates will soon find embarrassing—an artifact of loose language and sloppy thinking.

The trade, professional, and public press have all reported, even in the most respected newspapers of record, that California has ordered retail wheeling and that others of the United States are rapidly following suit. That is rubbish. California's five-member PUC did unexpectedly publish in April 1994 a staff proposal for rapid adoption of

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[34] Mainly because it was smaller and simpler after the load reductions, although its *unit* cost, *e.g.*, per ton of cooling capacity, might be higher.

[35] Acknowledging this concern does not, however, constitute acceptance of the Rate Impact Measure test for efficiency investments—a test whose misuse to screen out measures or programs *guarantees* societal misallocations. Some utilities' pleas for the RIM test to ensure equity between participants and nonparticipants might be more convincing if (a) those same utilities had cared about equity when building needless power plants and grid assets that forced electricity prices to the levels that now create political pressures (costly capacity and overcapacity created rate pressure that dwarf those of efficiency programs, and every supply-side investment flunks the "no-losers" test that RIM advocates wish to apply asymmetrically to demand-side investments only); (b) the equity effects cited rose above the clearly immaterial (E. Hirst & S. Hadley, "Rate Impacts of Electric Utility DSM Programs," ORNL/CON-402, 1994), and A.B. Lovins, "Saving Electricity Doesn't Have to Mean Raising Rates," RMI Publication #U88-16, 1988); and (c) *all* customers didn't get vastly larger system benefits from the least-cost investment.

[36] This is especially odd because it is widely perceived to have been triggered by Britain's, Norway's, and New Zealand's privatization and "deregulation," followed by others such as Chile's. Those situations are profoundly different from that of the U.S., and all, though interesting, are problematical in different ways. For example, Britain, far from deregulating, established a Regulator for the first time, and the need for his intervention has steadily grown ever since. However, the enabling statute was fundamentally flawed, so the wholesale marginal price is effectively set not competitively but by a duopoly, and the regional distribution companies are explicitly rewarded for selling more electrons, not for cutting customers' bills. No halfway reform can mend these key flaws.

[37] Let alone "retail competition," which we have had for a long time: any customer has always been free to fuel-switch, buy end-use efficiency, or do onsite generation, all without the utility's knowledge or consent. Thus utilities' electrons have *always* had to compete at the retail level with other ways of providing the service.

retail wheeling, but in a proposed order on 24 May 1995, on riper consideration, the CPUC *rejected* that concept by a 3–1 vote. Rather, the three majority Commissioners proposed to adopt a largely sensible framework I had dubbed "virtual retail wheeling"[38] because it yields all the putative economic-efficiency benefits of retail wheeling with none of its difficulties. In essence, it is William Hogan's proposal for "Efficient Direct Access," nicely refined through the efforts of advisors and stakeholders convened mainly by San Diego Gas & Electric Company, and now accepted by all three California investor-owned utilities. It has three main elements:

- a new, independently operated regional market-maker in wholesale electricity ("Poolco") would clear that market half-hourly, take no positions on its own account, process settlements, and discover real-time spot prices for electricity;
- retail customers would buy electricity exclusively from their normal local utility at prices whose fixed component came from traditional ratemaking and whose variable component equalled (or added a fixed amount to) that spot price; and
- utilities would no longer be responsible for assembling, aggregating, and maintaining a portfolio of resources, but rather would simply buy and provide spot-priced electricity (giving no specially favorable access to their own generation) bundled with whatever other services or attributes their customers desired.

Under this system, any longer-term portfolio attributes desired would be assembled *by customers* through their unregulated, unreported private acquisition of Contracts for Differences or other hedges, options, insurance, etc., motivated solely by deep forward markets with long-term prices (unless augmented by regulators' or legislator' mandates, which could be expressed as *e.g.* diversification quotas or explicit subsidies but implemented by competitive bidding). There would be no actual financial transaction or notional physical transaction between retail customers and any electricity suppliers other than their local utility, so the paralyzing jurisdictional disputes, legal rewriting, and institutional transformations required by retail wheeling would not be necessary. Most importantly, utilities would continue to be rewarded by appropriate regulatory incentives for acquiring the cheapest resources, whether supply- or demand-side, and for flowing those resources' benefits through to customers. Appropriate fixed costs such as farsighted R&D, grid costs, and recovery of the utility's sunk generating costs would occur through the fixed-cost component of the tariff just as now. So could the costs of cost-effective demand-side investments. (Alternatively, any or all of these costs could be charged per kWh, not per customer.) The CPUC explicitly stated its desire to retain its decoupling of utility profits from sales volumes, albeit with modifications not yet stated, and for the time being to retain current efficiency and load-management programs and their traditional cost recovery. The bedrock principle of performance-based regulation that rewards lower retail *bills*, not ¢/kWh, appears to be intact.[39]

What of other states? Before California rejected its own retail-wheeling proposal, quite a few states had already rejected similar or worse ones, often deterred by the prospect of putting their prize customers "in play" to be picked off by neighboring states' utilities without reciprocal access to theirs.[40] (As a New Mexico legislator remarked, "If you're the only kid on the block who says, 'Come play with my toys,' everyone will come play with your toys.") Contemplating this risk and even more daunting legal ones, only two states did anything[41]: Nevada offered retail wheeling to a particular steel rolling mill if it were built there (but so far it hasn't materialized); and Michigan authorized a limited-term, new-capacity-only, ~1%-scale experiment that was promptly taken to court by both Detroit Edison and the state Attorney-General.

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[38] A.B. Lovins, invited comments of 17 August 1994 to CPUC President Fessler (see also comments of 22 May 1994, reprinted in *El. J.* 7(6):67–80 [July-August 1994]), RMI Publication #U94-18.

[39] The majority also expressed its willingness to consider retail wheeling in four years if all its key problems could be solved, but displayed little optimism they could be nor belief they would need to be. The main conceptual problem remaining in the proposed order is the distortion it would introduce by not fully exposing nuclear generation to the discipline of pool dispatch. There seems no economic rationale for this exception.

[40] An astute 1994 California Energy Commission legal opinion showed, and the weight of authority concurs, that requiring such reciprocity would founder on the U.S. Constitution's Commerce Clause.

[41] At this writing, industrialist/environmentalist consensus proposals are pending in Massachusetts and Rhode Island but are a long way both from regulatory approval and from bearing much resemblance to what is normally described as retail wheeling. Emphasizing end-use efficiency and load management, rewards for cutting customers' bills, renewable energy, and other standard fare of environmentalist reforms, they would simply allow major industrial customers to try to beat the utility in the spot market, but not to escape stranded-asset costs.

Those lawsuits, wending their leisurely way toward the Supreme Court, soon became largely moot with two 29 March 1995 proposed orders by the Federal Energy Regulatory Commission. This "Mega-NOPR," which I interpret as quite discouraging to retail wheeling, states in detail how FERC intends to create the vibrant wholesale market required by the National Energy Policy Act 1992; warns that customers leaving the grid to shop around will *not* thereby escape paying for the assets they strand, but will be liable to pay for them anyway via wires charges (as the California PUC had also proposed in its original retail-wheeling Blue Book); and says that any state authorizing retail wheeling will thereby simply be transferring its authority to FERC, which will then interpret the transaction as a wholesale one and assert full jurisdiction all the way to retail distribution. Some "deregulation."

Of these FERC conclusions, the most devastating to retail wheeling is the most basic—the elaboration of how to carry out the 1992 Congressional mandate for full wholesale competition—because *wholesale competition will capture essentially all of the same benefit that was claimed to justify or require retail wheeling*[42], and it can only be captured once. Capturing that benefit—buying electrons in bulk at competitively reduced prices—by keeping the competition where it's needed, at the wholesale level, is entirely consistent with *also* capturing the severalfold larger benefit of efficient end-use by retail customers; whereas retail wheeling, using any conceptual structure proposed so far, would gravely inhibit if not destroy that larger benefit. Obviously it is better to seek, reward, and obtain *both* benefits than to trade off one for the other. Wholesale competition *plus* state regulation that rewards utilities for cutting customers' bills will indeed capture both benefits. It will do everything the advocates of retail wheeling want—except shift their costs to other customers. Indeed, San Diego Gas & Electric has persuasively argued that it will even make bilateral contracts unnecessary: SDG&E's version of the Poolco proposal provides "virtual bilaterals" with no actual bilateral relationships, all the same benefits, and none of the complications.

While many details, some of them quite important, remain to be worked out in both the California and the FERC proposals, the only three real proposals yet acted upon—a revolution offered and then rejected by California, a single-plant bribe offered (so far in vain) by Nevada, and a minor experiment authorized by Michigan but vanished into the litigative vortex[43]—hardly constitute the tidal wave of retail wheeling announced in the press. Where is that much-ballyhooed deregulatory tsunami? Only in the fertile imaginations of its advocates. And who are they? Largely a curious coalition of large industries[44] eager to grab the cheapest power at everyone else's expense, free-market ideologues with limited knowedge of utility reality and history, anti-environmentalists who think retail wheeling is a neat way of avoiding environmental accountability or expenditures and of killing demand-side programs they find ideologically distasteful, and consultants who see chaos as a profit opportunity and are not averse to helping create more. Though this unholy alliance has been surprisingly effective for a time in wrapping its notions in the superficially attractive language of "choice" and "competition," I think common sense, helped by Professor Hogan's and other independent analysts' incisive reasoning, is starting to reassert itself among regulators.

But meanwhile, many utility managers, not content to see Wall Street chop off their legs as analysts foresaw eventual confiscation of shareholder assets on a massive scale and hence wiped scores of billions of dollars off utility equity values, have started to chop off their own arms too—by preëmptively slashing their demand-side programs as a "customer-service frill" that will have no place in the cold, harsh world of competition. This panicky reaction, which has already destroyed or degraded many important efficiency capabilities (and done the same or worse to

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[42] In theory, some modest marginal benefit of retail wheeling might remain if utilities failed to offer to customers as full a menu of unbundled and rebundled service options as independent providers wished to offer and customers wished to buy. In practice, however, it is hard to see how this potential Pareto improvement lost by using the utility as a second-best and perhaps not fully transparent service provider could be very substantial, especially since the utility would remain the sole provider only of *electrons*: any providers of unbundled financial, efficiency, or other services who felt inadequately served by the utility as intermediary could still sell services directly to customers.

[43] However, mid-1995 rulings by the Michigan PUC, clearly driven by political direction rather than by the record, essentially dismantled Michigan utilities' strongly demanded and highly cost-effective efficiency programs. (In 1994, for example, Consumers Power's programs were oversubscribed by 7:1 and save at an average cost of ~1.5¢/kWh.) Michigan industries' and utilities' resultant handicaps in the marketplace will follow in due course.

[44] Chiefly ELCON, whose members use 4% of U.S. electricity. However, discussions with many of those firms leaves me convinced—as are they when we discuss the technical details—that they all have vast untapped opportunities to increase their electric productivity at far below short-run marginal supply costs. While it is natural for a profit-seeking organization to seek to shift its costs to others with less market or political power, those firms' lack of zeal in pursuing their own demand-side opportunities casts doubt on their seriousness about cutting costs.

nationally vital R&D strengths[45]), is unsound for two main reasons: it misreads the lessons of competition in other industries, and it gets exactly backwards the role of efficiency services in a competitive environment.

My colleague Jim Newcomb has compellingly presented elsewhere[46] an insightful view of the restructuring of other industries undergoing competitive restructuring and deregulation. In every case—airlines, oil, gas, telecommunications, trucking, etc.—market actors who expected the business to turn into a purely price-driven commodity play did poorly. The firms that survived and prospered were those that appreciated early that any retail business is quintessentially a *service* business. Retail customers generally want not only affordable commodities but also a bundle of other services and attributes. Gas customers, for example, want not only cheap methane molecules but also inventory management, storage, price hedging, etc. Telephone customers want a variety of services now proliferating in immense variety, not just low cents-per-minute. Airline passengers tend to want services too: courtesy, reserved seats, baggage interlining, food, etc., not just low cents-per-seat-mile.[47] Thus utilities that try to carry the cheap-electrons-only mentality from wholesale to retail levels will do so at their peril.

Indeed, those frozen-in-the-headlights utility executives' assumptions about the inevitability of retail wheeling would suggest precisely the *opposite* of their conclusions about their efficiency programs. In a competitive world in which all retail distribution entities are buying bulk electrons at competitively leveled prices, it will be very difficult to distinguish one's service from others' except by offering the one really big advantage available: bundling electrons with their far more productive end-use, so as to deliver dramatically lower bills and better end-use services. For this reason, if retail wheeling *were* likely, a strong portfolio of efficiency services would become *more* rather than less important as a core element of utilities' competitive strategy: an unbeatable way to differentiate service, boost value, build customer loyalty and success (hence competitiveness, size, and demand growth), retain wavering customers, enhance public image, reduce present and future system costs and risks, cut rates *and* bills, and provide profitable service benefits to both customers and utilities. Jettisoning this capability in a competitive environment is an irrational act of unilateral disarmament.

It remains to be seen how rapidly utility managers come to understand the new world of wholesale competition, continuing regulatory turbulence, and ever more dramatic technical progress in and market demand for the attributes that advanced electric end-use efficiency alone can provide. Powerful market forces are at work, some largely unseen: Rocky Mountain Institute's real-estate practice, for example, is finding such superior financial performance from highly efficient buildings that utilities which fail to offer an attractive efficiency partnership may find themselves increasingly irrelevant to some of their biggest customers.

Why, then, did I say at the start of this concluding section that I thought the most radical changes in the utility industry were yet to come? Because the generals are, as usual, fighting the previous war. About the time we get really good at wholesale competition, we probably won't need it, because cheap proton-exchange-membrane (PEM) fuel cells, photovoltaics, and other decentralized generators, augmented by efficient end-use and by decentralized electric storage, will have put virtually all of today's central thermal stations out of business. There are three main reasons I now think this is plausible over the next couple of decades:

1. "Distributed benefits" omitted from traditional comparisons between centralized sources collectively raise distributed resources' economic value by about half to one order of magnitude—enough to make even such relatively costly options as photovoltaics cost-effective *now* in many applications.[48] The Hoganesque restructuring described above will increasingly give these benefits a voice in the market. For example, resources near the

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[45] TECC Group (Littleton CO 80162-1992), *U.S. Electric IOU Research, Development, and Demonstration Expense Trends, 1990–94* (August 1995), found a $67.6 million or 9.9% drop between 1993 and 1994, compared with average increases of 4.5%/y during 1990–93. Worse yet, the best people, tired of budget fights, often left first.

[46] *The Future of Energy Efficiency Services in a Competitive Environment*, E SOURCE, SIP-4, 1994.

[47] It now appears from *Wall Street Journal* analyses that Southwest Airlines' initial advantage arose far less from its spartan flights than from its hubless structure, which enabled it to utilize its capital assets far more efficiently. Moreover, U.S. airlines' baroquely complex and daily changing fare structures so adroitly make customers (as an Ohio PUC member remarked) "an offer they can't understand" that their elegant price signals are quite opaque.

[48] A.B. Lovins & D. Yoon, "Renewables in Integrated Energy Systems," PictureTel address to ANZSES (Perth, W.A.), 3 December 1993, RMI Publication #E94-12, to be expanded in A.B. Lovins & A. Lehmann's forthcoming 1995 RMI technical publication.

load center—or *at* it, by definition, in the case of demand-side resources—will start to get due credit, via an appropriate locational and temporal rent, for their "grid Dristan" (decongestant) effects.[49] Peak-coincident resources, like photovoltaics (and often windpower) in summer-peaking areas, will get due rewards. Even more importantly, renewable sources will gain value as constant-*price* resources, and may even be properly evaluated at *risk-adjusted* discount rates reflecting their lack of future fuel-price or carbon risk.

2. Cost-effective onsite storage devices using carbon-fiber superflywheels[50] are widely expected to enter the market around late 1995 for power conditioning and uninterruptible power supplies, and about a year later for vehicular use. While their specific energy is expected to be comparable to that of good batteries (~35–100 W-h/kg), their specific *power* can easily be two orders of magnitude higher. Their demonstrated in-out cycle efficiency is at least 96%, their lifetime should be many decades, their coastdown time is months, and their cost is potentially quite modest. Such devices, probably soon supplemented by even higher-specific-power ultracapacitors, not only augment load management and end-use efficiency as potent responses to real-time pricing, which will therefore become far less important as the peaks disappear, but will also greatly facilitate the transition to intermittent renewable sources, making them "firm," dispatchable, and hence far more valuable.

3. Technological progress with local generation is not only extraordinarily rapid and encouraging of late, yielding net electricity costs well below 2¢/kWh[51]; it has also gained a new driving force, namely superefficient cars and other hybrid-electric vehicles[52] that obtain the benefits of electric propulsion without the disadvantages of onboard batteries. Ultralight, ultra-slippery "hypercars" require ~3–5-fold less peak power than conventional cars, and obtain only a modest fraction of that peak power from the onboard fuel-to-electricity conversion device, such as a small engine, gas turbine, or fuel cell. They can therefore adopt PEM fuel cells for that role far earlier in their development cycle than conventional cars could, because the ~5–10-fold smaller fuel cell will be correspondingly less sensitive to its cost, mass, or volume per kW. Moreover, since the hypercar burns only ~10% the usual amount of fuel, it can use a tenfold costlier fuel—probably more than, say, solar hydrogen compressed into cylinders would cost—without raising its fuel cost per km driven. Thus not only compressed natural gas with a small onboard reformer but also ~200-bar hydrogen gas[53] seem plausible as surprisingly early automotive fuels. Even hydrogen electrolyzed and compressed using offpeak retail electricity can beat taxed retail gasoline at U.S. prices—cheaper than bottled water—because of the remarkable fuel-to-electricity conversion efficiency of proven PEM technology: ~65% with hydrogen, or the upper 50s of percent with methane or ~55% with methanol, all about four times the ~15% average efficiency of a typical gasoline-powered automotive driveline. Mid-1995 evaluations of PEM fuel cells show[54] that established technology can almost certainly be mass-produced at costs below $250/kW, while the best experimental technology can probably beat $50/kW. Even with a reformer added (now as low as another ~$50/kW), such prices and efficiencies, plus the opportunity of onsite use of the waste heat, will clearly beat grid electricity almost anywhere natural gas is available, generating at ~1–2¢/kWh—less a broadly comparable credit for the ~80°C waste heat.

   The fuel-cell production volumes necessary to displace central power stations may well come first from cars, but it could happen the other way around. Which happens first is almost irrelevant: the key point is that of these two potentially enormous markets, both are likely to happen surprisingly soon, and once either of them does happen, the other will not be far behind. Much the same is true of the way fixed-site power-conditioning and -storage markets for superflywheels and ultracapacitors will bring down costs for parallel development in electrically propelled vehicles, and vice versa. Naturally, all these devices will have smart controls responsive

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[49] A.B. Lovins, comments of 17 August 1994 to CPUC, at pp. 3–6; to FERC, 24 July 1994 (urging symmetrical treatment for demand-side resources); and in EPRI, *DR Connection*, pp. 2–3, November 1994.

[50] W. Howe, "Protecting Facilities from Power Outages: Flywheel Technology Enters the Competition in an Emerging Market," E SOURCE (Boulder CO), TU-95-2, April 1995.

[51] T. Casten, remarks to Energy Committee of the Aspen Institute for Humanistic Studies, 12 June 1994, Trigen (White Plains NY), reporting net system efficiencies >90% and net electricity costs (after credit for industrial use of the waste heat) around 0.5–2¢/kWh from "trigeneration" with off-the-shelf MW-range gas turbines equipped with refiring and a waste-heat boiler. Many large industries have thermal loads of the required several-MW size.

[52] RMI Hypercar Center publications, *op. cit. supra*; these span the full range of technical content and depth.

[53] In a filament-wound carbon-fiber tank lined with a metallized polyester film; metal tanks are too heavy but do not appear necessary for excellent safety characteristics.

[54] *E.g.*, by Jeff Bentley of Arthur D. Little, Inc., Cambridge MA 02140-2390.

to the real-time price signals that will permeate the grid. Thus the beer-keg-sized household storage superflywheel will act as a house-scale power broker, buying and selling appropriately to maximize financial return.

PEM-fuel-cell cars could even make possible an option not practical with today's cars because internal-combustion engines are insufficiently durable: plugging the car, which is parked ~96% of the time, into the gas and electric grids as a dispersed *generator*—like a battery-electric car inside-out—with zero marginal capital cost and ~20 kW_e of highly reliable capacity. This is considerably more than the peak load of even an inefficient house. If even a modest fraction of car-owners did this, it could transform the utility business, because a full U.S. hypercar fleet, not counting heavier hypervehicles, could represent ~3 TW of generating capacity, or four times the total capacity of all grid-connected generators today, and the fuel cells are extremely long-lived. Thus utilities expecting to sell electricity to battery cars might find themselves buying it instead.[55]

In short, the prospect is now strong that some variety of new technologies, reinforced by the greater flexibility and diversity of the market actors becoming engaged in power markets at all levels, will realize Carl Weinberg's vision[56] of the "distributed utility" far earlier than anyone might have thought as recently as, say, 1994. The better the technology gets and the more rigorously competition hones our engineering economics, the faster the power plants (and new local storage devices with surprising capabilities) will shift to our roofs, basements, backyards, and driveways. The more distributed generation and storage resources disintermediate the distribution utility—which now moves across the meter and even *eliminates* the meter—the more irrelevant will become the otherwise historically observed tendency[46] for dis-integrated utility functions (genco, transco, disco) to seek vertical re-integration.

What is a "utility" that engineers, procures, leases, installs, and operates onsite resources which need no grid connection, or which optionally use it merely as a convenient local means of profitable temporal exchange? It is not a generator or distributor in the usual sense; it is purely an energy service company that provides light, comfort, and other end-use services, or the means to achieve them, right at your premises. Logically, its engineering and financing will intimately integrate end-use efficiency with the onsite supply, because that will yield the best buy. The elaborate arena just constructed for bidding bulk power sources will get bypassed by resources already *at* the users' premises and requiring no generation, aggregation, bidding, or distribution. Soon that shiny new arena could stand abandoned and empty, populated only by the ghosts of economic theorists long dead—blindsided, not for the first time, by the autonomous onrush of technologies they scarcely understood. This will not happen overnight, and the transition provides an impermanent "window" probably just long enough to pay off existing generating and grid investments before both they and the means of charging for them (as today's customers are steadily paying) become irreversibly bypassed. Happily, the transition seems likely to be long enough to be graceful—not so much because the dispersed generating technologies will be so slow to deploy as because persistent needs for temporal balancing of onsite thermal and electrical loads with supplies will justify retaining grid service for quite a while.

This market-driven "withering away of the state" will then make utilities write off remaining central thermal power plants[57]—magnificent engineering achievements which, like open-hearth furnaces and Bessemer converters, are no longer competitive even to run, let alone to build. (I'm already experiencing a twinge of pre-nostalgia just thinking about it.) And so Thomas Edison's original vision of a largely decentralized power system, perhaps even his vision of selling energy *services*—light and torque, not kWh—will at last be fulfilled: just a century late.

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[55] It is not immediately obvious how all these innovations in both mobile and fixed-site uses of natural gas, generally with extremely high system efficiencies, would affect the total demand for this key transitional resource, which is now known to be exceedingly abundant.

[56] Dr. Weinberg, former manager of R&D for PG&E, is at Weinberg Associates, 42 Green Oaks Court, Walnut Creek CA 94596.

[57] This would be a major hit on top of enormous writeoffs of project-financed Asian power plants, most of which will disappoint: they represent the same dumb money, chasing transactional rewards without favorable economic fundamentals, that inflated the 1980s U.S. real-estate bubble. It's not clear which of the two central risks is worse—that the sovereign host won't raise electricity prices to the levels needed to pay for the plants, or that it *will*, deflating demand far below expectations.

Renewables in Integrated Energy Systems

Keynote address to the ANZ Solar Energy Society
Solar '93 Conference, Perth, W.A. (by PictureTel)
3 December 1993

by Amory B. Lovins, Director of Research
with Daniel Yoon, Senior Research Associate

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This research was supported by The Pew Charitable Trusts.

EXHIBIT B

Efficient end-use helps renewables do more, work better, sell better, cost less, and profit more

- *Domestic water heating:* efficient end-use saves half; reduced standby/distribution losses and proper setpoint (~44°C) raise savings to 62-65% at an average cost of 0.3–0.7¢/kWh; this lets a simple passive downpumper meet ~100% of the family's load
- *Household photovoltaics:* reducing average load to ~40–120 W permits a small, cheap array with modest storage to suffice
- *Office building:* daylighting leverages dimmable supplementary lighting; that cuts internal heat gain, facilitating passive/alternative cooling; lower cooling loads mostly pay for that; workers' productivity gains may be worth ~5–15 as much as all energy
- *Cold-climate house:* passive solar heating eliminates the heating system and cuts construction cost; that saved money cuts the total cost of saving ~99% in space- and water-heating, 50% in water, and 90% in household electricity (US$5/month, 372 m^2) to only $16/$m^2$—a ten-month payback with 1983 technology
- *Hot-climate house:* passive solar heating displaces furnace with hydronic radiant backup; the radiant coil provides enough city-water cooling backup to let further passive measures eliminate the air-conditioner and ductwork too, raising total energy savings to ~80% at negative marginal mature-market cost
- *Biofuels:* ~0.4–1.6 l/100 km "supercars" (ultralight hybrids), and their heavy-vehicle analogues, mean transport needs so little liquid fuel that sustainably growing farm/forestry wastes suffice

With meticulous whole-system engineering, this efficiency/renewables combination is a natural partnership. But it raises important new issues about how properly to value both resources.

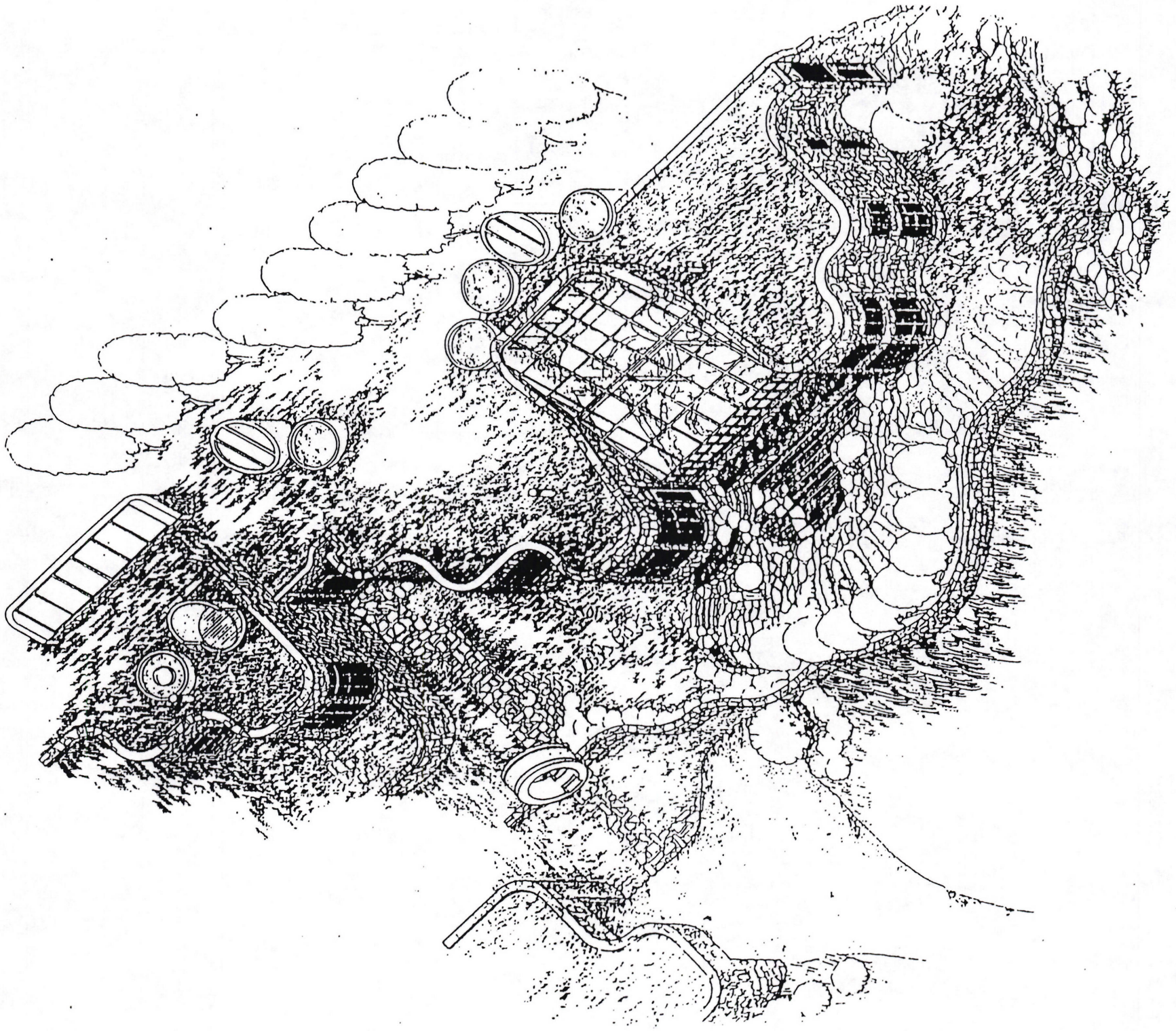
What are dispersed electric resources worth?

Utilities compare ¢/kWh costs to choose electricity-saving or -generating resources. The utility's weighted-average cost of capital is used (a) to convert all capital costs into fixed charges per kWh and (b) to convert all variable costs to present value. The utility then chooses the resource that minimizes its total levelized costs (typically at the busbar) or its present-valued revenue requirements.

This universally used method seriously understates the tangible, measurable economic value of dispersed and diversified resources:

1. Resources that avoid uncertain future costs by substituting present capital investment for future fuel consumption cut risk and hence merit more favorable discounting. So does diversification that increases reliability and resilience.
2. More modular, quicker-to-build resources reduce financial, forecasting, and technological-obsolescence risks.
3. Smaller units reduce the needed reserve capacity.
4. Resources nearer the load cut grid costs and losses.
5. Dispersed resources can make the grid more reliable, extend equipment life, and generate reactive power at need.
6. Isolated generators can provide premium power quality.
7. Dispersed generators can produce valuable waste heat and can use otherwise valueless locally available fuels.
8. Many dispersed resources produce greater output onpeak.
9. Relatively benign resources can avoid important (though hard-to-quantify) social costs and bring unique benefits.

Collectively, these advantages mean that seemingly costly resources, such as photovoltaics, are often strictly cost-effective <u>today</u>.



Risk-reducing choices are worth more

We focus first on four main kinds of risk:

- uncertainty of future operating costs, *e.g.*, for fuel
- uncertainty of demand, hence the risk of buying too much or too little supply
- uncertainty of economic conditions, *e.g.*, interest rates
- technological obsolescence, hence the risk of buying the wrong resource

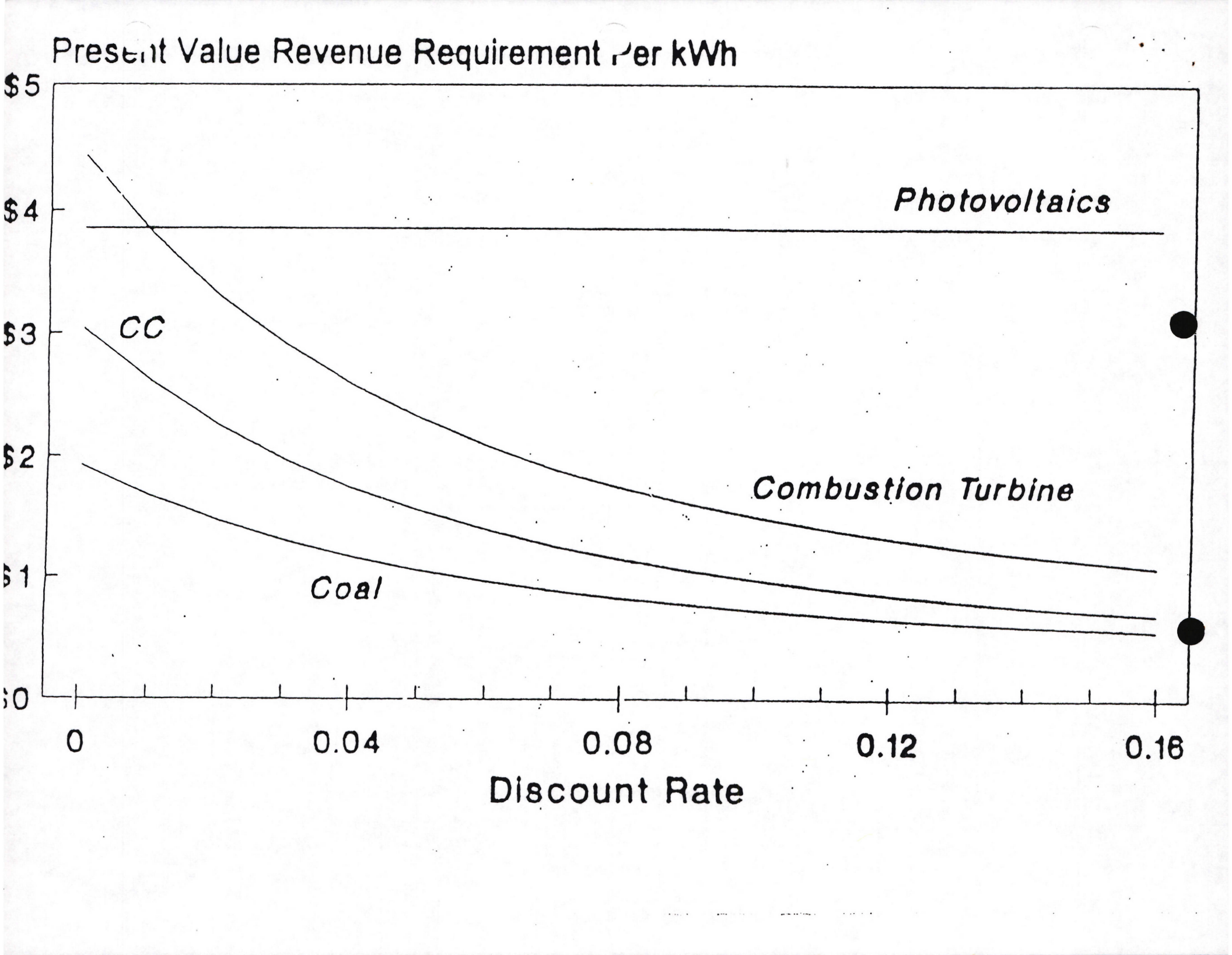
To manage these risks so as to minimize regret requires choices that are relatively small, fast, modular, and cheap and that minimize long-term expenses about which least is known. Such resources' economic value can be quantified using financial theories developed to manage market risks.

Other important kinds of risk will be considered separately.

Uncertainty of future operating costs

The value of resources that pay more now for equipment and less (or nothing) later for fuel has been analyzed by noted U.S. financial consultant Dr. Shimon Awerbuch:

- Utilities' economic comparisons currently *ignore* technologies' different exposure to fuel-price volatility, which represents a risk with an economic value. This makes a fuel-intensive option look cheap (say, 5 US¢/kWh for combined-cycle gas) and fuel-free photovoltaics expensive (say, 25¢/kWh).
- That's like saying that a $1,000 junk bond yielding 16%/y has a greater present value than a $1,000 Treasury bond yielding 7%/y. In fact, the former's default risk may deserve, say, a ~25%/y higher discount rate, outweighing its potential yield!
- Each project, and each cashflow *component of* each project, should be discounted at its proper risk-adjusted rate. Risky cash *inflows* deserve high discount rates ("a bird in the hand is worth two in the bush"); risky cash *outflows*, low or negative rates.
- Since oil prices are statistically random, we don't care when we buy oil, so its real discount rate is 0%/y. A relatively stable fuel price like coal might merit ~3.5%/y.
- Outflows with low price uncertainty and volatility—*e.g.*, property taxes, fixed O&M, and working capital—are like debt and should be discounted at WACC, *e.g.*, 5.5%/y.
- "Composite" discount rates weighted for various cash *outflows* could therefore be *e.g.* 4.5%/y for gas combined-cycle, 6.5%/y for coal-steam, and 11.5%/y for photovoltaics. (For outflows, higher means less risky.) Just this simple risk adjustment can make photovoltaics, at today's prices, cheaper than gas combined-cycle!


Present Value Revenue Requirement Per kWh
$5
$4
$3
$2
$1
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Photovoltaics
CC
Combustion Turbine
Coal
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0.04
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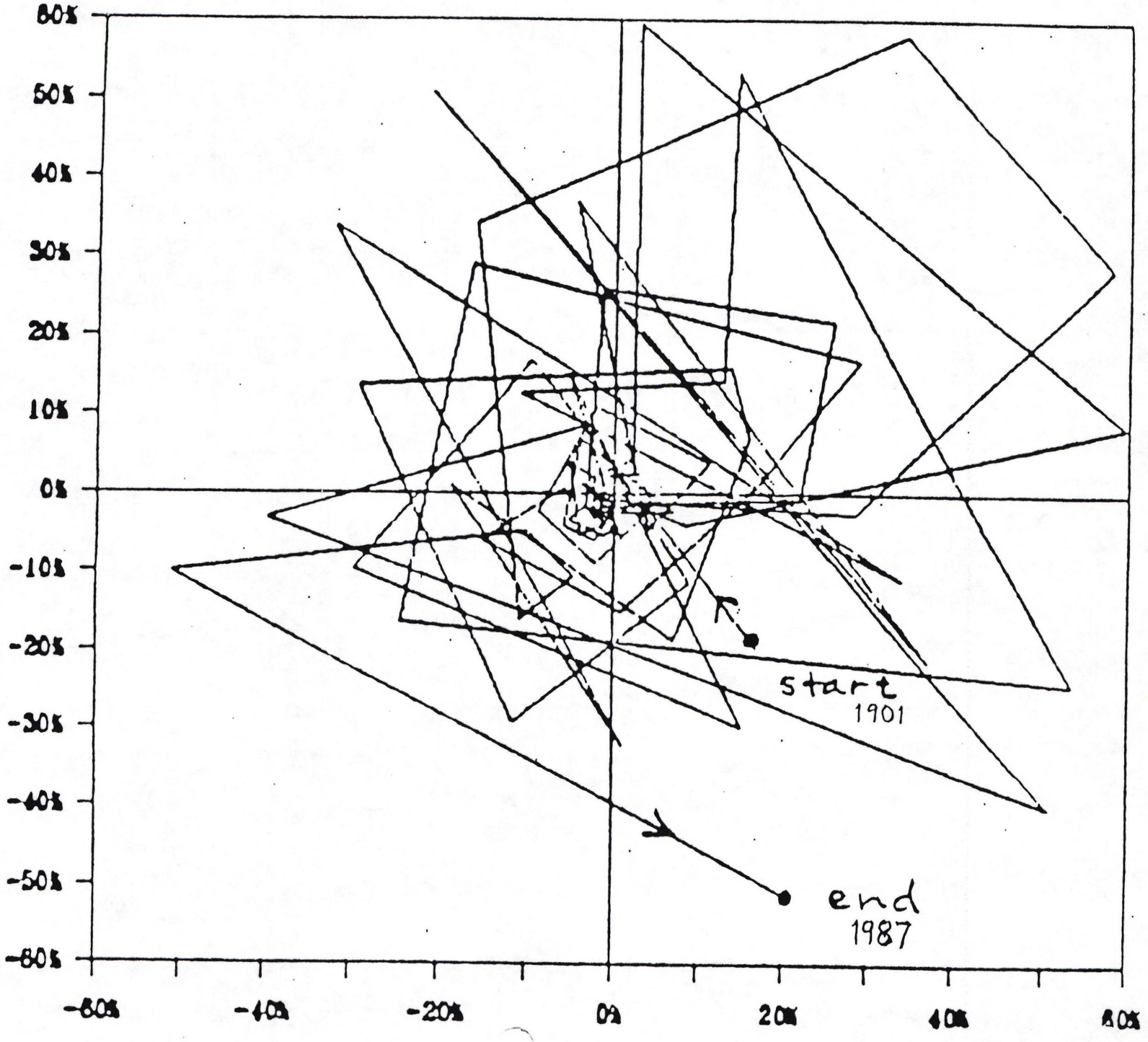
Discount Rate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1987

Uncertainty of demand

The longer the forecast horizon, the greater the likely error. There's no escape from the risk of mistimed demand forecasts during a plant's *operating* life, but that risk can be reduced during *construction* by building smaller modules in shorter times.

A Los Alamos National Laboratory study found that to achieve the same financial objectives under the same external uncertainties, it's typically worth paying three times as much "overnight cost" per kW for a power plant with a 2½-year as with a 10-year construction time (or five times as much at 15 years). Yet many dispersed resources have lead times not of 2½ years but of months, weeks, or days, so their reduced planning risk is worth even more.

A similar risk-reducing value should exist for mistimed *grid* investments: EPRI estimates $1.50 is invested in the U.S. grid per $1 in generation, and it is even more difficult to forecast demand accurately for a small area than for a large area.

Exposure to financing risks

The more modular a resource is and the shorter its construction time, the less its exposure to inflation, real escalation in factor costs, regulatory changes, etc. Of course those changes can still occur, but you can switch at any time to a resource better suited to the new conditions, rather than being stuck partway through building a single, monolithic unit. Further, small investments can *buy time*, so we can learn more and hence make better (or defer indefinitely having to make) big investments.

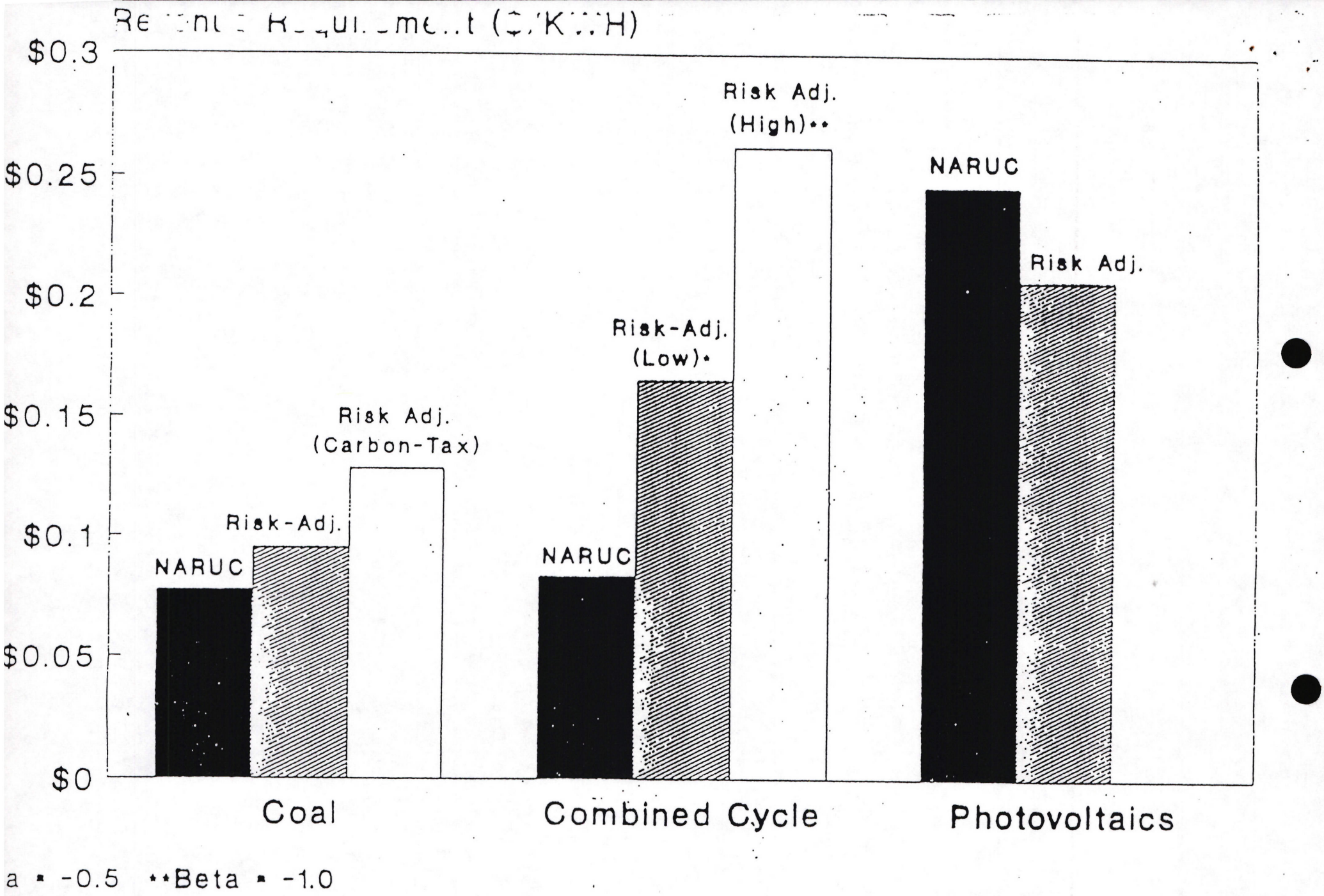


Figure 5. NARUC base-case and risk-adjusted revenue requirements

Technological obsolescence

Small, modular, build-as-you-need, pay-as-you-go units cut exposure to technological change. Rather than freezing the design early for one big, lumpy, inflexible resource, they let continuous improvements be rolled incrementally into successive modules.

Evolution of costs

In general, central thermal plants have neoclassical supply curves—the more units you build, the *more* each one costs—while efficiency and dispersed renewables have experience curves: for photovoltaics (1976–92), each doubling of cumulative production has *cut* real marginal cost by nearly 20%. Policymakers charged with a long view and a social purpose should assess PVs at the "mature market cost" they'll pay once many have been bought, because assuming they will be cheap will get them bought and hence actually make them cheap—a self-fulfilling prophecy.

Dispersed resources exploit the economies of mass production. By making powerplants less like cathedrals and more like cars or personal computers, we exploit continuous improvement, modern manufacturing techniques, and highly competitive innovation. We move labor from the field, where productivity gains are sparse, to the factory, where they're huge. And since the equipment comes in small, quickly made pieces, lessons learned can be immediately incorporated into new production, condensing many generations of technology into a short time, just as with electronics.

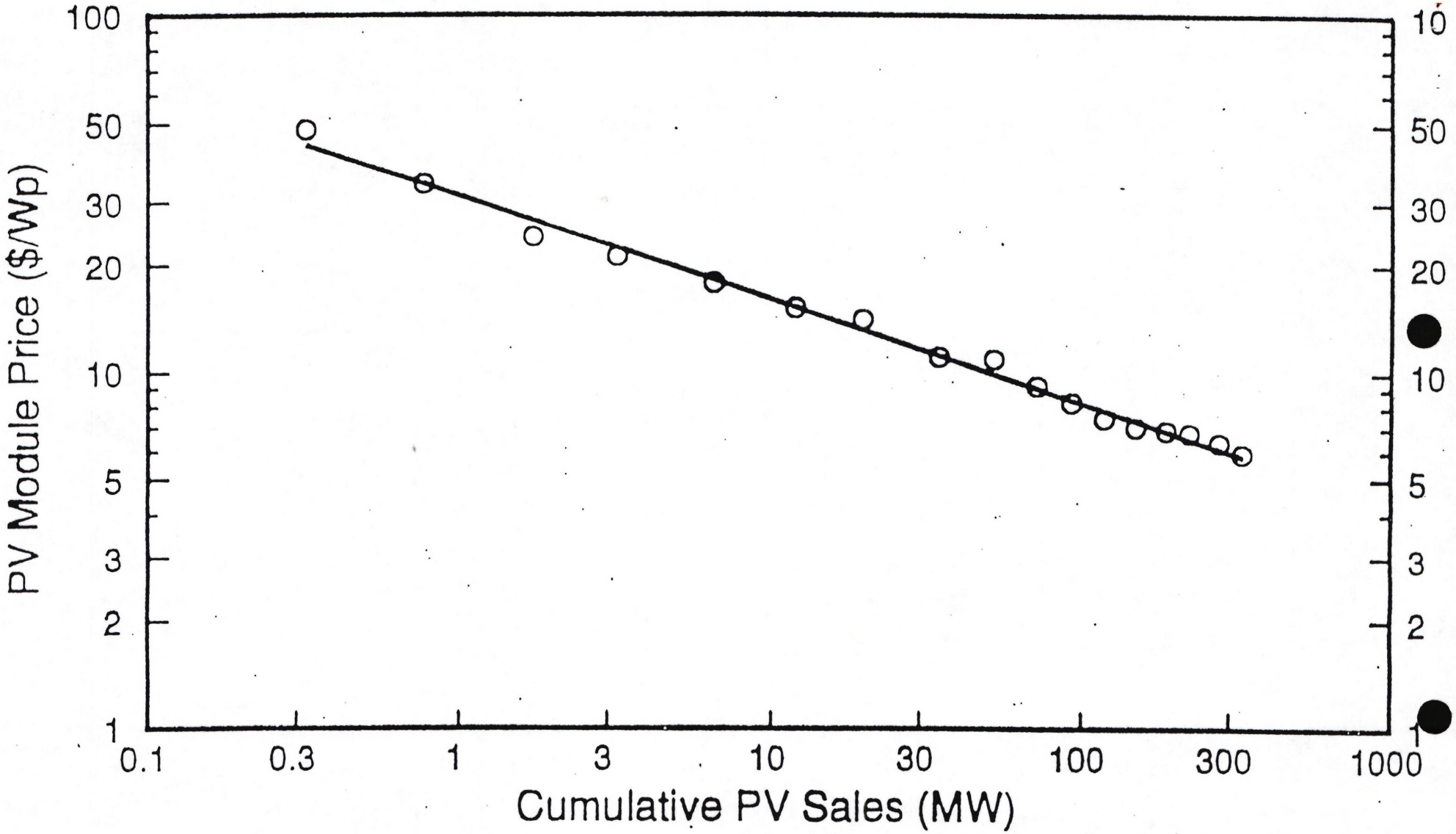


Figure 6: Log-log plot of the selling price of pv modules, 1976-1992.

The pv module selling price follows closely an 81.6% experience curve. Module sales data and prices are from Strategies Unlimited Mountain View, CA, September 1993. Strategies Unlimited used the Consumer Price Index to convert current prices into 1992 price

Diversification

Public policy often favors, and pays extra for, fuel diversity for strategic reasons. Putting all eggs in one basket risks having one's economy halted by events beyond one's control: oil embargoes, coal or rail strikes, bad weather that disrupts fuel transport, nuclear accidents that elicit calls for widespread shutdowns, or the accidental or deliberate disruption of fragile networks like the gas or electric grids.

Protection from such mishaps is both direct and indirect: indirect because the more diversified the options, the less the power of deliberate disruption (embargoes, strikes, terrorism), hence the less the motive to undertake it.

The kind of supply interruption that macro-diversification is meant to prevent is not fully reflected in price uncertainties. Of course prices go up during an oil embargo, but during some kinds of interruption, such as failure of a gas pipeline to an area served by no other, the gas simply isn't available there, so its price is meaningless. Presumably this kind of risk and the value of avoiding it could also be expressed by appropriate discount rates.

More diverse, dispersed, renewable sources also provide a subtle property, resilience, that can make major failures *impossible.* Resilience depends on a system's architecture: its reliance on relatively fine-grained, richly interconnected, redundant, cooperative, loosely coupled modules that are diverse, have low failure costs, are easily repaired, are hierarchically organized so failures at one level have little affect on another, and fail gracefully.

Smaller units save reserve capacity

When a big unit dies, it's like having an elephant die in your living-room. You need a second elephant, equally big, to haul the carcass away. Standby elephants are expensive.

Power plants need two kinds of standby capacity: "reserve margin" available if needed, and a portion of it continuously synchronized to the grid as *instantly* available "spinning reserve." Both cost capital, and spinning reserve burns fuel. In Los Angeles, spinning reserve *capacity* alone is worth ~0.1 ¢/kWh (1991 US$).

The smaller the units, the less capacity is likely to fail at once, because failures tend to happen per unit, not per kW. At least for thermal power plants, smaller units are also intrinsically more reliable than bigger ones. Thus a Los Alamos comparison of two sets of coal-fired stations 4 x 750 MW *vs.* 9 x 250 MW, in the range where economies of scale are supposedly clearest found that:

- the bigger plants needed one-third more total capacity
- the smaller plants would be 19% more available, have a 59% lower forced outage rate, and take 44% less time to build (5 years instead of 9)
- but the smaller plants would have 15% worse heat rate, 11% higher capital cost/kW (assuming economies of scale four times as strong as the U.S. actually observes), and slightly higher costs for transporting coal and electricity
- nonetheless, the smaller plants would have 1% lower operating costs, 17% lower construction costs, and 6% *cheaper* electricity

Options 10^5 smaller should tell the same story even more strongly.

Resources nearer loads cut grid costs and losses

Line extension and grid connection

The most familiar case for photovoltaics is for rural households who would otherwise incur high costs for line extension: in the U.S., commonly ~$11/m overhead or ~$21/m underground, plus future maintenance costs. Some utilities therefore lease PVs instead—seldom doing strong end-use efficiency first, however! Typical lease fees, including perpetual maintenance, are $125–250/month for PG&E, 5% + 1.6%/month for Idaho Power.

Depending on climate, load, and AC or DC supply, the breakeven household line-extension distance can be as small as ~400 m. But this distance approaches zero for *e.g.* outdoor walkway lights (PVs for this small load are cheaper than burying a cable), alley lights in Sacramento ($3k for PVs *vs.* $5k to connect to the grid and pay for meters, meter-reading, and kWh), electric fence chargers, etc.

In Eindhoven, Dutch physicist Kees Daey Ouwens got a ~10–12-y payback from powering his house with standalone PVs (after reducing his average load to only ~50 W) from saving energy costs plus the drop and service entrance from the nearby pole. This was so surprising that he installed standalone PVs and efficient end-use devices throughout an Indonesian village, rather than tapping into a nearby transmission line and paying for stepdown, switchgear, and wiring the village. Using 10-y amortization and the utility's interest rate, the people *had a positive cashflow*—because the debt service cost less than they'd been paying for lighting kerosene and radio batteries! Might this also be true for 2+ billion other people?

Grid losses and costs

End-use efficiency or local generation reduces I^2R grid losses in three ways: electrons flow for a shorter distance (less R), at lower currents (less I^2), and reduced peak loads reduce the heating of conductors and transformers (less R). (On peak days, heating by current and weather doubles the average U.S. grid loss to 14%.)

An analysis of fuel cells for Los Angeles substations found that in general, displacing 1% of remote supply by a local resource cuts downstream grid losses by 2%. This reduction in transmission, stepdown, subtransmission, and substation losses was worth 0.3–1.7¢/kWh, depending on location. PG&E found 0.73¢/kWh.

Local resources can also permit more efficient operation of the distribution system, *e.g.*, by swapping transformers and shifting loads among substations to increase [usually low] capacity utilization, or by facilitating interconnections with adjacent utilities. Load-leveling in turn helps equipment run cooler, further reducing losses.

PG&E's marginal distribution cost/kw ranges from $50 to $2,000. "Precision-guided programs" target end-use efficiency on the applications and areas that best defer distribution investment—aiming demand-side investments like a rifle instead of a shotgun. In some circumstances, freed-up grid capacity may also permit valuable power interchange or wheeling.

PG&E found substation photovoltaics could save $25/kW-y worth of transmission capacity, and save another $4/kW-y by reducing voltage tapchanges, lengthening their maintenance interval 40%.

Resources nearer loads boost reliability

Dispersed resources reduce electrons' "haul length," so the power flow is less exposed to mishaps in the grid, where >90% of all outages originate. Such resources are also often intrinsically more reliable than central thermal plants: availability is often 99+% for well-designed photovoltaics, wind turbines, fuel cells, efficiency improvements, etc. Their downtime is also usually very short.

Dispersed resources' biggest reliability advantage is giving utilities more options for isolating and bypassing distribution faults. Local generation helps maintain service to many customers who would normally have to be cut off pending the repair.

This increased reliability has a value that is hard to measure but can be very high (especially for, say, an iron lung or a paper machine). PG&E's customer surveys suggested that an avoided kW-h of outage was worth an average of $29, so substation PVs would add reliability worth $130/kW-y or ~5.6¢/kWh.

Dispersed resources can disproportionately cut peak loads. This makes grid equipment run cooler and hence last longer, reducing forced outages and deferring significant replacement investments. Each ~10 C° decrease in operating temperature roughly doubles equipment life, and temperature falls steeply as peak loads are relieved, especially on hot days. PG&E's substation PVs cool a 10.5-MVA transformer by ~4–7 C°, extending its life ~5 y, worth $89 per PV kW-y or 3.8¢ per PV kWh. And tapchangers that need to change line voltage less often also last longer, saving another ~$10 per PV kW-y by deferring their replacement.

Dispersed generators provide reactive support

Utilities generate, meter, and sell "real" power whose current is in phase with its voltage. However, they must also generate and transmit, but can neither meter nor sell, "reactive" power whose current is out of phase with its voltage. Reactive power can do no useful work; it is a pure cost with no benefit.

Utilities therefore seek to minimize reactive power by penalizing customers with a low "power factor" (the fraction of the power delivered that can do work) and by installing compensating banks of capacitors, *e.g.*, at substations. Capacitors aren't cheap, but they are vital to maintaining adequate circuit voltage to run the distribution system.

Resources close to loads decrease reactive power by shortening wires and avoiding transformers, both sources of inductance, and by reducing current through those inductive components. Reactive losses vary as the square of current, so a 1% drop in current decreases reactive losses by ~2%.

Dispersed generators with their own inverters can also adjust themselves instantaneously to change the phase angle between their current and voltage outputs, generating reactive power needed to compensate for reactive losses elsewhere in the circuit. The same kW of generation cannot be real and reactive at the same time, but sometimes reactive power is more valuable. This ability to displace capacitors at need is worth ~0.4–2.9¢/kWh at a PG&E substation.

End-use efficiency, *e.g.* motor inverters, offers similar advantages.

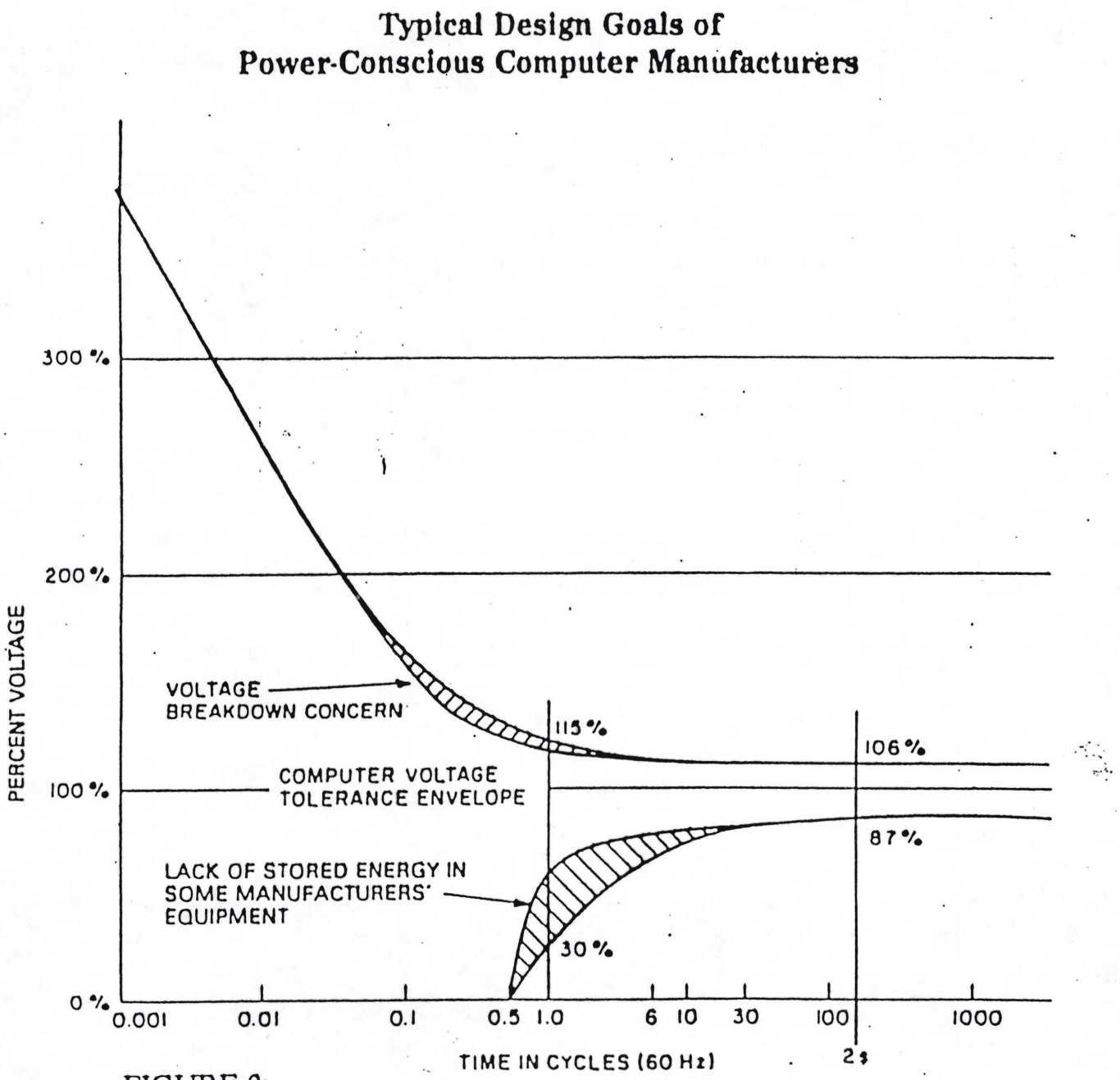


FIGURE 2: Computer and Business Equipment Manufacturer's Association (CBEMA) Curve

Isolated generators can provide premium power

Increasingly many uses demand power with a pure sinewave form, no spikes or other transients, and extreme reliability. Yet the diverse uses on the grid, including noisemakers like welders, create many undesirable power disturbances. Just transients from lightning, switchgear operation, etc. can overwhelm delicate electronic applications. This can range from annoying to possibly fatal (*e.g.*, in operating rooms or aircraft-control computers).

Critical applications require "uninterruptible" power supplies (UPSs)—typically a rectifier, battery, and inverter, plus control gear to switch over instantly if needed. The UPS is run from the grid, but if prolonged outages are possible, a standby generator is also needed to keep the batteries from running down.

In applications like ground avionics, where air traffic control beacons and similar devices must run ultrareliably in often remote areas, the cost of buying, fueling, and maintaining the standby generator may justify using photovoltaics instead, as is already done for lighthouses and for highway signs and emergency phones. This also avoids generator switching transients and outages.

If the site is grid-connected, PV power also avoids lightning and similar transients. For critical applications with stringent demands for power quality, even when grid power is already wired to the site, it can be cheaper to start from scratch with an isolated solar power source than to back up and clean up the grid power!

Even grid-connected dispersed generators may soon provide active power conditioning, offsetting grid transients and harmonics.

Dispersion creates integration opportunities

Central thermal power plants generate ~1-3 GW of waste heat in one place—far more than most applications can use, and usually too far from thermal loads to justify the cost of transporting it. Dispersed resources, however, typically provide a convenient amount of waste heat conveniently close to the end-use. Thus a fuel cell's or Stirling engine's waste heat can heat or cool buildings or run industrial processes. Even on a rooftop scale, heating domestic water with low-temperature waste heat from photovoltaics in a low-concentration nonfocusing concentrator (Winston collector) can displace fueled water-heating while boosting cell efficiency.

Thermal power cycles can often provide not only cogeneration of electricity and waste heat but even trigeneration, with an additional output of useful heat at a different temperature.

Integration opportunities extend also to new fuels. Many industries produce modest quantities of combustible byproducts, from food-processing wastes to refinery offgas, that cannot be economically transported for long distances. Onsite power production changes these byproducts from a costly disposal problem into a valuable output. Often both this new-fuel opportunity and thermal integration are available simultaneously.

Displacing idle-at-night fossil plants saves fuel

Peak-saving resources can displace smaller plants kept warm at night for daytime near-peak use, avoiding their minimum-load inefficiency. This reduces operating costs (~1¢/kWh) + air pollution.

Many dispersed resources shave peak loads

Most end-use efficiency disproportionately cuts peak loads. But so do many renewables. Photovoltaics work best, and are typically ~75–85% dispatchable, on the sunniest days when cooling loads peak. The same hot weather drives strong winds through California mountain passes filled with turbines. Together, wind-plus-photovoltaic output nicely matches many California loadshapes. Thus the renewable electricity is available at the times at which it is most valuable because the costliest supplies are being used.

End-use efficiency yields a similar benefit in the context of demand forecasting. Once built, a power plant has fixed output. But a factory with more efficient motors saves even more electricity if it adds an extra shift, and a shop with more efficient lights saves even more electricity if it stays open longer hours. Thus the savings automatically expand in precisely the conditions of rapid load growth that make them most valuable to the utility. This property of end-use efficiency—but not of power plants—amounts to a form of load-growth "insurance" with an economic value.

Dispersed resources can prevent pollution

Efficiency and renewables avoid air pollution worth (and often sellable for) ~0.8–2.0¢/kWh for a Los Angeles fuel cell. In areas with poor air quality, saving peak loads is especially valuable because it saves NO_x from combustion turbines on the hottest days when smog forms most quickly. Moreover, just the *powerplant O&M* cost avoided by displacing a common NO_x-control technology in Los Angeles is worth ~0.4–0.7¢/kWh.

Dispersed resources' most valuable benefits may be NEEDS ("Not Easily Expressed in Dollars")

Relatively benign and dispersed resources can often:

- resolve NIMBY/NIMBL conflicts by reducing impacts
- ensure equity by giving the energy and its side-effects to the same people at the same time
- improve public and occupational health and safety
- reduce noise and ugliness, improve amenity
- enhance community and individual autonomy
- be more equitably available through more vernacular technologies rather than requiring highly specialized and dominating institutions, hence strengthen the periphery against the center
- permit and require institutions that learn faster and hence are more adaptable to social/technical change
- fit a more efficient and accountable institutional scale
- yield more, longer, and better jobs, more diverse in occupation and location, usually free from boom-and-bust and construction-camp problems
- improve the balance of trade (fuels, skills, equipment)
- avoid irreversible commitments of scarce resources
- provide better working and living conditions, hence better worker productivity (worth an order of magnitude more than eliminating energy bills!)
- incur smaller administrative overheads
- be likely to make smaller, less consequential mistakes and learn from them more cheaply and quickly
- reduce cleanup and disposal problems afterwards
- practice stewardship instead of stealing from our kids

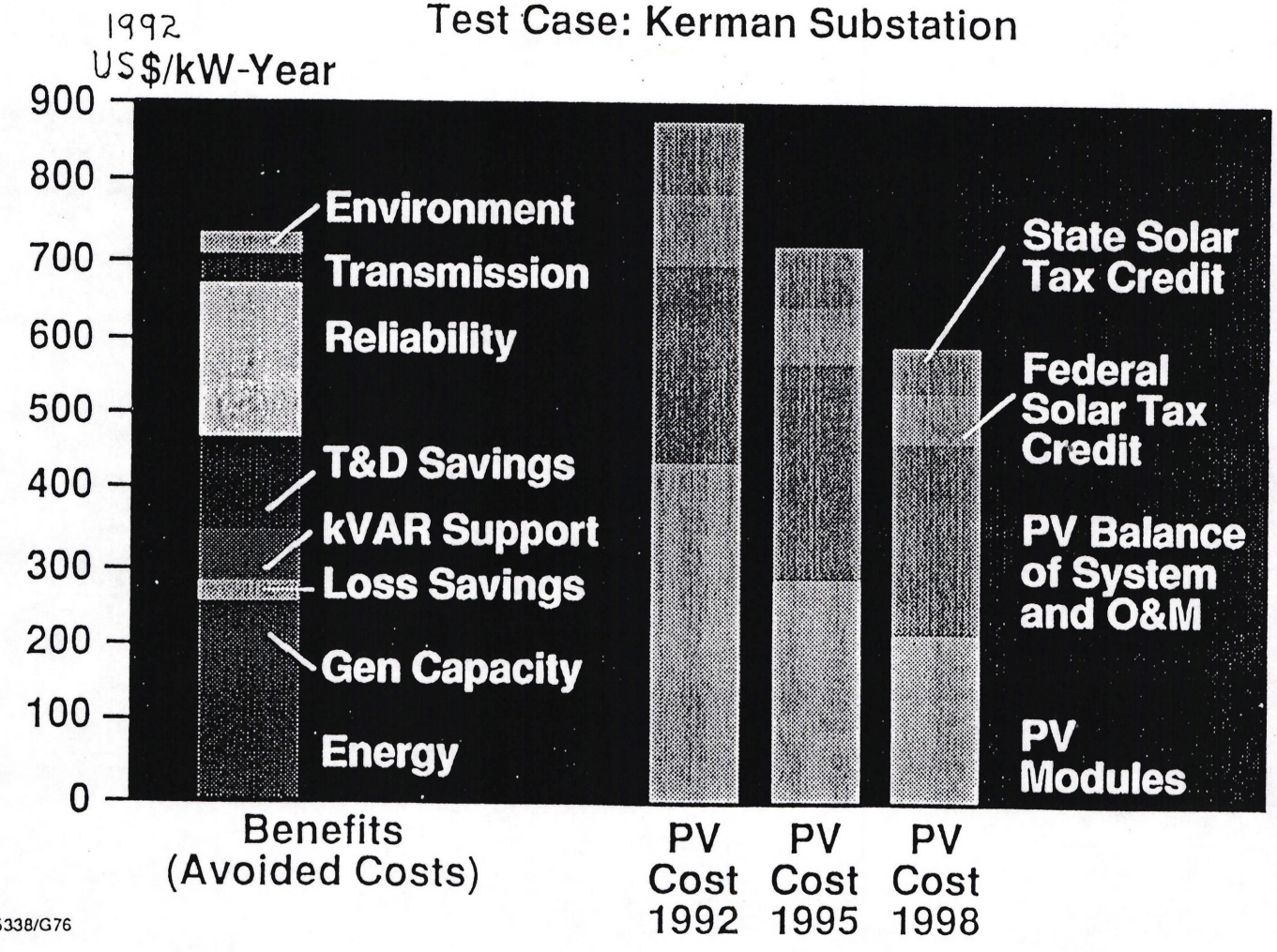
How do these benefits all add up?

PG&E installed a 500-kW_p 1-axis-tracking PV array in May 1993 on its Kerman substation to save money. It calculated distributed-resource benefits worth 1.8x the value of avoided energy and capacity. Including these benefits—all real, tangible, valuable reductions in utility costs and risks—cut the 1995 PV cost from the apparent ~25¢/kWh (net of 5¢/kWh tax credits) to ~8¢/kWh, less than avoided energy and capacity costs. But this still didn't count:

- Awerbuch's risk-adjusted discounting of the fuel-based avoided cost (*e.g.*, counting the risk of fuel-price volatility can readily double the cost of combined-cycle gas generation)
- any photovoltaic cost reductions after 1995
- reduced planning risk in generation and grid investments
- reduced exposure to financial and technological risks
- greater fuel diversity and system resilience
- reduced reserve margin, spinning reserve, and minimum-load operational costs
- line extension (none to be avoided in this substation installation)
- opportunity to sell premium-quality power (not possible here)
- thermal integration and local-fuel use (none in this case)
- reduced payments to private generators based on lower average system cost (a system benefit worth 2¢/kWh)

In many cases, counting appropriate omitted benefits would make the economic case even stronger. But if it is persuasive for photovoltaics, today's costliest dispersed renewable option, it must be stronger still for many cheaper generating options, and overwhelming for most end-use efficiency improvements. We clearly need a complete overhaul of how such resources are valued.

Benefits vs Costs of PV in T&D Systems



915338/G76

E SOURCE, the premier technical information service on advanced electric efficiency (formerly called COMPETITEK), is operated by a subsidiary of Rocky Mountain Institute:

E SOURCE , Inc.
att'n: Brad Davids, P.E., V.P. / Member Services
1033 Walnut Street
Boulder, CO 80302-5144, USA
303/440-8500, FAX 303/440-8502

For more general information, both popular and technical, on energy, water, and transportation efficiency, sustainable agriculture and real-estate development, redefining global security, local economic development, and their interconnections, please contact the following independent, nonprofit resource policy center:

Rocky Mountain Institute
1739 Snowmass Creek Road
Snowmass, CO 81654-9199, USA
303/927-3851, FAX 303/927-4178
Internet 'ablovins@rmi.org'

The Institute's ~50 staff foster the efficient and sustainable use of resources as a path to global security. RMI publishes a free *Newsletter* thrice a year, and sends its brochure and publications list free upon request. Several programs, *e.g.*, Green Development Services, Economic Renewal, and Water, provide consultancy, as do E SOURCE and affiliated specialists.

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing document was duly served upon the following parties by U.S. Certified Mail, postage prepaid, on the date stated below:

RICHARD EGGED, JR., Director
ABE MITSUDA, Administrator
Office of Planning
State of Hawaii
P. O. Box 2359
Honolulu, HI 96804-2359

ANN OGATA-DEAL, Esq.
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PLANNING COMMISSION
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G. STEPHAN HOLADAY
Hawaiian Commercial & Sugar Company
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Puunene, Hawaii 96784

MARK SHEEHAN
MAUI TOMORROW
P.O. Box 429
Makawao, HI 96768

DATED: Wailuku, Hawaii, 4-20-98, 1998.

B. MARTIN LUNA
ALLEN R. WOLFF
RANDALL H. ENDO
Attorneys for Applicant

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

April 17, 1998

MEMORANDUM

TO: B. Martin Luna, Esq.
David Blane, Dir.
Jeffrey Schmidt, Esq.
Richard Egged, Jr., Dir.
Ann Ogata-Deal, Esq.
Mark Sheehan

FROM: Darlene Y. Kinoshita Darlene Y. Kinoshita
Chief Clerk, LUC

RE: A97-722 - MAUI ELECTRIC CO., LTD.

Please find enclosed copies of letters received by the Commission.

1. Letter dated March 4, 1998 from Julie Higa.

2. Letter dated April 15, 1998 from Mike Trotto.

3. Letter dated April 15, 1998 from Tom C. Leuteneker.

LAND USE COMMISSION

Minutes of Meeting

Nahele Room
Sandalwood Clubhouse
2500 Honoapiilani Hwy.
Waikapu, Maui

April 24, 1998

approved
5/14/98

COMMISSIONERS PRESENT: Rupert K. Chun
JoAnn Mattson
Peter Yukimura
Merle A.K. Kelai
M. Casey Jarman
Isaac Fiesta, Jr.

COMMISSIONERS ABSENT: Lawrence N.C. Ing
Herbert Kaopua, Sr.
P. Roy Catalani (Excused)

STAFF PRESENT: Esther Ueda, Executive Officer
Jon Itomura, Deputy Attorney General
Bert Saruwatari, Staff Planner
Darlene Kinoshita, Chief Clerk

Rachelle Primeaux, Court Reporter

Chairperson Chun called the meeting to order.

Commissioner Mattson moved to go into executive session to consult without Deputy Attorney General on litigation matters regarding Civil No. 97-0258(1) - Molokai Ranch vs. LUC. The motion was seconded by Commissioner Jarman and unanimously approved by voice votes.

After the executive session, Commissioner Mattson moved to accept the stipulation regarding Civil No. 97-0258(1). The motion was seconded by Commissioner Kelai and unanimously approved by voice votes.

CONTINUED HEARING

A97-722 - MAUI ELECTRIC CO., LTD.

Chairperson Chun announced that this proceeding was a continuation of the hearing which was adjourned at 4:24 p.m.

Appearances

B. Martin Luna, Esq., Attorney for Petitioner

Randall Endo, Esq., Attorney for Petitioner

Kelly Cairns, Esq., Deputy Corporation Counsel, County of Maui

Colleen Suyama, Planning Dept., County of Maui

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

Abe Mitsuda, Land Use Division, Office of Planning

Mark Sheehan, for Intervenor, Maui Tomorrow

Scott Crawford, for Intervenor, Maui Tomorrow

At this time, Mr. Endo withdrew Maui Electric Co.'s motions in Limine #2, 4, & 5. Mr. Endo also submitted a letter dated April 24, 1998 clarifying that his witnesses Robert Paull and Tom Schroeder are not testifying as UH professors and that the Commission should strike any and all references to their position with the University of Hawaii contained in the record to make it clear that they did not testify in the capacity as professors of the University.

Commissioner Mattson moved to strike any and all references to their position with the University of Hawaii contained in the record and moved to grant the motion to withdraw the motions 2, 4, and 5. The motion was seconded by Commissioner Jarman and unanimously approved by voice votes.

EXHIBITS

1. The letter dated March 31, 1998 from Herb Squires to Mark Sheehan was accepted into evidence as Intervenor's Exhibit No. 22.

INTERVENOR'S WITNESSES

1. Roy Smith

2. Erik Frye

3. Ian Chan Hodges (cross examination by the parties)

A lunch recess was taken at 12:00 p.m. to reconvene at 1:00 p.m.

- 1:00 p.m. -

COUNTY'S WITNESS

1. Richard Haake

INTERVENOR'S WITNESSES (Continued)

4. Richard Mayer

Chairperson Chun instructed all parties of the post-hearing procedures. Proposed findings from the parties are due on May 15, 1998 and the parties of until May 22, 1998 in which to respond.

MISCELLANEOUS

Commissioner Kelai moved to approve the minutes for the following meeting dates: March 19, 1998, April 8, 1998, and April 9, 1998. The motion was seconded by Commissioner Mattson and unanimously approved by voice votes.

The meeting was adjourned at 3:30 p.m.

LAND USE COMMISSION

Minutes of Meeting

Nahele Room
Sandalwood Clubhouse
2500 Honoapiilani Hwy.
Waikapu, Maui

April 23, 1998

approved 5/14/98

COMMISSIONERS PRESENT: Rupert K. Chun
JoAnn Mattson
Peter Yukimura
Merle A.K. Kelai
M. Casey Jarman
Isaac Fiesta, Jr.

COMMISSIONERS ABSENT: Lawrence N.C. Ing
Herbert Kaopua, Sr.
P. Roy Catalani (Excused)

STAFF PRESENT: Esther Ueda, Executive Officer
Jon Itomura, Deputy Attorney General
Bert Saruwatari, Staff Planner
Darlene Kinoshita, Chief Clerk

Lynann Nicely, Court Reporter

Chairperson Chun called the meeting to order.

CONTINUED HEARING

A97-722 - MAUI ELECTRIC CO., LTD.

Chairperson Chun announced that this matter before the Commission is a continuation of the hearing which was previously held on April 8 & 9, 1998.

Appearances

B. Martin Luna, Esq., Attorney for Petitioner

Randall Endo, Esq., Attorney for Petitioner

Kelly Cairns, Esq., Deputy Corporation Counsel, County of Maui

Colleen Suyama, Planning Department, County of Maui

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

Abe Mitsuda, Land Use Division, Office of Planning

Mark Sheehan, for Intervenor, Maui Tomorrow

Scott Crawford, for Intervenor, Maui Tomorrow

EXHIBITS

1. The following letters were admitted into evidence by the Land Use Commission:

a. March 4, 1998 from Julie Higa

b. April 15, 1998 from Mike Trotto

c. April 15, 1998 from Tom Leuteneker

d. April 16, 1998 from Michael J. Singlehurst

e. April 16, 1998 from Fernando Ribao, Jr.

f. April 20, 1998 from Tom Reed

Commissioner Mattson moved to amend the agenda to include the seven motions filed by B. Martin Luna, Esq. The motion was seconded by Commissioner Yukimura and unanimously carried by voice votes.

Arguments on Maui Electric's motion to 1) Preclude Intervenor's from submitting exhibits or preventing 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 materials disclosed pursuant to the Commission's Prehearing Order; and 3) Restrict Intervenor Maui Tomorrow from engaging in repetitious and duplicative cross-examination were heard from Mr. Luna and Mr. Sheehan.

Maui Electric's motion as stated above was denied by Chairperson Chun.

Arguments on Maui Electric's Motion in Limine #1: to preclude admission of Maui Tomorrow's Exhibits 4 & 5 were heard from Mr. Endo, Mr. Sheehan, Ms. Cairns, and Ms. Ogata-Deal.

Maui Electric's motion in Limine #1 was denied by Chairperson Chun.

Arguments on Maui Electric's Motion in Limine #2: to preclude testimony of Roy Smith and Erik Frye as experts of air quality and air impacts were heard from Mr. Endo, Ms. Cairns, Ms. Ogata-Deal, and Mr. Sheehan.

Commissioner Mattson moved in regards to Petitioner's motion in limine #2 and #5 that as the intervenor calls upon their witness, Petitioner is given an opportunity to question and to limit his testimony at that point in time. The motion was seconded by Commissioner Jarman and unanimously carried by voice votes.

Maui Electric's Motion in Limine to Preclude Admission of Maui Tomorrow's Exhibits 2, 3, & 12 was denied by Chairperson Chun. Maui Electric Co. will have an opportunity to rebut.

PETITIONER'S WITNESSES

1. William Bonnett

At this time, Commissioner Kelai made a request for Maui Electric's updated financial information.

COUNTY'S WITNESS

1. David Blane

A lunch recess was taken at 12:00 p.m. to reconvene at 1:00 p.m.

- 1:00 p.m. -

INTERVENOR'S WITNESSES

1. Steven Moser, M.D.

At this time, voir dire examination was conducted by Randall Endo and arguments were heard from Mr. Sheehan, Ms. Cairns, and Ms. Ogata-Deal.

Commissioner Jarman moved to go into executive session to discuss with the Commission's deputy attorney general the qualifications on what makes an individual an expert in his particular field. The motion was seconded by Commissioner Fiesta and unanimously carried by voice votes.

Chairperson Chun granted Maui Electric's motion in Limine #3 and Intervenor's witness' testimony will be limited to any factual observations that he personally observed related to the project.

STATE'S WITNESS

1. Abe Mitsuda

INTERVENOR'S WITNESSES (Continued)

2. Marc Drehsen

3. Ian Chan Hodges

At this time, voir dire examination was conducted by Randall Endo and arguments were heard from Mr. Sheehan, Ms. Suyama, and Ms. Ogata-Deal.

Chairperson Chun granted Petitioner's Motion in Limine #5: To preclude in part that Ian Chan Hodges is not an expert relating to energy planning, but is an expert in community economics and investments.

The meeting was adjourned at 4:24 p.m.

LAND USE COMMISSION

NOTIFICATION OF LAND USE COMMISSION MEETING

DATE, TIME AND PLACE

April 23, 1998 - 9:30 a.m.
April 24, 1998*

Nahele Room
Sandalwood Clubhouse
2500 Honoapiilani Hwy.
Waikapu, Maui

'98 APR 14 P2:49
LIEUTENANT GOVERNOR'S OFFICE

A G E N D A

I. CONTINUED HEARING

1. A97-722 - MAUI ELECTRIC CO., LTD.

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.

II. MISCELLANEOUS

1. Action on the Stipulation regarding Civil No. 97-0258(1), Molokai Ranch Co., Ltd. vs. Land Use Commission.

2. Status Report on Litigation Matters

3. Adoption of Minutes

4. Legislative Matters

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

*The meeting will continue on April 24, 1998 if not completed on April 23, 1998.

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

April 14, 1998

Ann Ogata-Deal, Esq.
Deputy Attorney General
Hale Auhau, Third Floor
425 Queen Street
Honolulu, HI 96813

Dear Ms. Ogata-Deal:

Enclosed are Land Use Commission meeting agendas.

Please note that petition (s)

A97-722 - Maui Electric Co., Ltd. ✓
A94-705 - County of Hawaii, Planning Dept.

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

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

April 14, 1998

Mr. Richard Egged, Jr., Director
Office of Planning, State of Hawaii
P.O. Box 2359
Honolulu, HI 96804-2359

Dear Mr. Egged:

Enclosed are Land Use Commission meeting agendas.

Please note that petition (s)

A97-722 - Maui Electric Co., Ltd.
A94-705 - County of Hawaii, Planning Dept.

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

cc: Mr. Abe Mitsuda, Land Use Division

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

April 14, 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

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

4a. Article Number: P 612 304 654

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

7. Date of Delivery: APR 16 1998

MAKAWAO HI
USPS 96768-9998

5. Received By: *(Print Name)* CHERYL-Ann P. FERNANDEZ

6. Signature: *(Addressee or Agent)* X Cheryl-Ann P. Fernandez

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

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

PS Form **3811**, December 1994 02595-97-B-0179 Domestic Return Receipt

P 612 304 654

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	

MAKAWAO CONTOWN STATION APR 14 1998 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

April 14, 1998

B. Martin Luna, Esq.
Carlsmith, Ball, Wichman, Case
and Ichiki
One Main Plaza
Suite 400, 2200 Main Street
Wailuku, HI 96793-1086

Dear Mr. Luna:

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.

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Very truly yours,

ESTHER UEDA
Executive Officer

EU:dyk

Enclosure

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- 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:

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

4a. Article Number
P 612 304 655

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

7. Date of Delivery
4/18

5. Received By: *(Print Name)*
Wanda Kenoly

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

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

Thank you for using Return Receipt Service.

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

P 612 304 655

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, HI DOWNTOWN STATION APR 14 1998 USPS

A97-722 - Maui Electric Co., Ltd.

PS Form **3800**, April 1995

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

April 14, 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.
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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:

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

4a. Article Number
P 612 304 643

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

7. Date of Delivery
4-15-98

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 612 304 643

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 STATION APR 14 1998

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

April 14, 1998

Mr. David Blane, Planning Director
Planning Department, County of Maui
250 South High Street
Wailuku, HI 96793

Dear Mr. Blane:

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

A97-722 - Maui Electric Co., Ltd.

SENDER:

- 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. David Blane, Director
Planning Dept., County of Maui
250 South High Street
Wailuku, HI 96793

4a. Article Number
P 612 304 645

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

7. Date of Delivery
4-15-98

5. Received By: *(Print Name)*
Tessie Manrique

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

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

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

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

P 612 304 645

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

Sent to: Mr. David Blane, Dir.	
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, HI DOWNTOWN STATION APR 14 1998 USPS

PS Form **3800**, April 1995

A97-722 - Maui Electric Co., Ltd.

LAND USE COMMISSION

Minutes of Meeting

Nahele Room
Sandalwood Clubhouse
2500 Honoapiilani Hwy.
Waikapu, Maui

April 9, 1998

approved 4/24/98

COMMISSIONERS PRESENT: Lawrence N.C. Ing
Rupert K. Chun
M. Casey Jarman
Peter Yukimura
Merle A.K. Kelai

COMMISSIONERS ABSENT: JoAnn Mattson
Herbert Kaopua, Sr.
Isaac Fiesta, Jr.
P. Roy Catalani (Excused)

STAFF PRESENT: Esther Ueda, Executive Officer
Jon Itomura, Deputy Attorney General
Bert Saruwatari, Staff Planner
Darlene Kinoshita, Chief Clerk

Darcy Brokaw, Court Reporter

Presiding Officer Ing called the meeting to order.

CONTINUED HEARING

A97-722 - MAUI ELECTRIC CO., LTD.

Presiding Officer Ing announced that this proceeding was a continuation of the hearing which was adjourned yesterday at 5:30 p.m.

APPEARANCES

B. Martin Luna, Esq., Attorney for Petitioner

Allen R. Wolff, Esq., Attorney for Petitioner

Kelly Cairns, Esq., Deputy Corporation Counsel, County of Maui

Colleen Suyama, Planning Department, County of Maui

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

Abe Mitsuda, Land Use Division, Office of Planning

Mark Sheehan, for Intervenor, Maui Tomorrow

Scott Crawford, for Intervenor, Maui Tomorrow

Marc Dreshen, for Intervenor, Maui Tomorrow

EXHIBITS

1. The letter dated April 3, 1998 from Rory Frampton to Esther Ueda was admitted into evidence by the Land Use Commission.

PETITIONER'S WITNESSES

1. James C. Clary, Jr.

2. Robert Paull

A lunch recess was taken at 12:17 p.m. to reconvene at 1:00 p.m.

- 1:05 p.m. -

PETITIONER'S WITNESSES (Continued)

3. Jan R. Medusky

MISCELLANEOUS

1. Discussions regarding legislative status and litigation matters were held by the Commission.

The meeting was adjourned at 1:50 p.m.

LAND USE COMMISSION

Minutes of Meeting

Nahele Room
Sandalwood Clubhouse
2500 Honoapiilani Hwy.
Waikapu, Maui

April 8, 1998

Approved 4/24/98

COMMISSIONERS PRESENT: Lawrence N.C. Ing
Rupert K. Chun
JoAnn Mattson
Peter Yukimura
Merle A.K. Kelai

COMMISSIONERS ABSENT: M. Casey Jarman
Herbert Kaopua, Sr.
Isaac Fiesta, Jr.
P. Roy Catalani (Excused)

STAFF PRESENT: Esther Ueda, Executive Officer
Jon Itomura, Deputy Attorney General
Bert Saruwatari, Staff Planner
Darlene Kinoshita, Chief Clerk

Gloria Tavares, Court Reporter

Presiding Officer Ing called the meeting to order.

CONTINUED HEARING

A97-722 - MAUI ELECTRIC CO., LTD.

Presiding Officer Ing announced that this matter before the Commission is a continuation of the hearing which was previously held on February 26 & 27, 1998.

Appearances

B. Martin Luna, Esq., Attorney for Petitioner

Allen Wolff, Esq., Attorney for Petitioner

Gary Zakian, Esq., Deputy Corporation Counsel, County of Maui

Kelly Cairns, Esq., Deputy Corporation Counsel, County of Maui

Collen Suyama, Planning Department, County of Maui

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

Abe Mitsuda, Land Use Division, Office of Planning

Mark Sheehan, for Intervenor, Maui Tomorrow

Scott Crawford, for Intervenor, Maui Tomorrow

Eric Frye, for Intervenor, Maui Tomorrow

PETITIONER'S WITNESSES

1. James Michael Silva
2. Stanley Kiyonaga
3. Scott W.H. Seu

A lunch recess was taken at 11:50 a.m. to reconvene at 1:00 p.m.

- 1:00 p.m. -

PETITIONER'S WITNESSES (Continued)

4. Ted Kawahigashi
5. Daniel Lum
6. Albert Lono Lyman
7. Christopher L. Hart
8. Mark Willey

The meeting was adjourned at 5:30 p.m.

LAND USE COMMISSION

NOTIFICATION OF LAND USE COMMISSION MEETING

DATE, TIME AND PLACE

April 8, 1998 - 9:30 a.m.
April 9, 1998*

Nahele Room
Sandalwood Clubhouse
2500 Honoapiilani Hwy.
Waikapu, Maui

'98 MAR 30 P3:28
LIEUTENANT GOVERNOR'S OFFICE

A G E N D A

I. ACTION

1. A97-722 - MAUI ELECTRIC CO., LTD.

To consider Maui Electric Co., Ltd.'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 filed by B. Martin Luna, Esq.

II. CONTINUED HEARING

1. A97-722 - MAUI ELECTRIC CO., LTD.

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.

III. MISCELLANEOUS

1. Status Report on Litigation Matters

2. Adoption of Minutes

3. Legislative Matters

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

*The meeting will continue on April 9, 1998 if not completed on April 8, 1998.

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

March 30, 1998

Mr. Richard Egged, Jr., Director
Office of Planning, State of Hawaii
P.O. Box 2359
Honolulu, HI 96804-2359

Dear Mr. Egged:

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

cc: Mr. Abe Mitsuda, Land Use Division

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

March 30, 1998

Ann Ogata-Deal, Esq.
Deputy Attorney General
Hale Auhau, Third Floor
425 Queen Street
Honolulu, HI 96813

Dear Ms. Ogata-Deal:

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.

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Very truly yours,

ESTHER UEDA
Executive Officer

EU:dyk

Enclosure

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

March 30, 1998

Mr. David Blane, Planning Director
Planning Department, County of Maui
250 South High Street
Wailuku, HI 96793

Dear Mr. Blane:

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

A97-722 - Maui Electric Co., Ltd.

SENDER:
- 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. David Blane, Director
Planning Dept., County of Maui
250 South High Street
Wailuku, HI 96793

4a. Article Number
P 612 304 646

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

7. Date of Delivery
3-31-95

5. Received By: *(Print Name)* Julie Higa

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

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

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

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

P 612 304 646

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

Sent to: Mr. David Blane, Dir.	
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 STATION MAR 30 1995 USPS

PS Form **3800**, April 1995

A97-722 - Maui Electric Co.

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

March 30, 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 call 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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2. ☐ Restricted Delivery

Consult postmaster for fee.

Is your RETURN ADDRESS completed on the reverse side?

3. Article Addressed to:

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

4a. Article Number: P 612 304 647

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

7. Date of Delivery: 3/31/98

5. Received By: *(Print Name)*

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

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

Thank you for using Return Receipt Service.

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

A97-722 - Maui Electric Co., Ltd.

P 612 304 647

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	

PS Form **3800**, April 1995

HONOLULU HI CHINATOWN STATION MAR 30 1998 USPS

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

March 30, 1998

B. Martin Luna, Esq.
Carlsmith, Ball, Wichman, Case
and Ichiki
One Main Plaza
Suite 400, 2200 Main Street
Wailuku, HI 96793-1086

Dear Mr. Luna:

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

Consult postmaster for fee.

3. Article Addressed to:

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

4a. Article Number: P 612 304 633

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

7. Date of Delivery: 3/31/98

5. Received By: *(Print Name)* mercedes obregon

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

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 612 304 633

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 Str., Ste. 400	
Post Office, State, & ZIP Code Wailuku, HI 96793	
Postage	$ .32
Certified Fee	1.35
Special Delivery Fee	
Restricted Delivery Fee	
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Return Receipt Showing to Whom, Date, & Addressee's Address	
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Postmark or Date	

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

March 30, 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

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

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- Complete items 3, 4a, and 4b.
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1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

Is your RETURN ADDRESS completed on the reverse side?

3. Article Addressed to:

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

4a. Article Number: P 612 304 648

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

7. Date of Delivery

5. Received By: *(Print Name)* LINDA LAROTONDA

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 612 304 648

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
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A97-722 - Maui Electric Co., Ltd.

CARLSMITH BALL WICHMAN
CASE & ICHIKI

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Attorneys for
MAUI ELECTRIC COMPANY, LIMITED

LAND USE COMMISSION
STATE OF HAWAII
MAR 25 2 55 PM '98

ORIGINAL

BEFORE THE LAND USE COMMISSION

STATE OF HAWAII

In the Matter of the Petition of	DOCKET NO. A97-722
MAUI ELECTRIC COMPANY, LIMITED, a Hawaii corporation,	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; MEMORANDUM IN SUPPORT OF MOTION; DECLARATION OF ALLEN R. WOLFF; EXHIBITS A - D; NOTICE OF NON-HEARING MOTION and 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	

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

Maui Electric Company, Limited hereby requests that the Land Use Commission enforce its Prehearing Order (filed February 4, 1998) as follows:

1) preclude Intervenor Maui Tomorrow from submitting exhibits or presenting witnesses that were not previously identified by the deadlines established in the Prehearing Order;

2) limit the testimony of Intervenor Maui Tomorrow's expert witnesses to the subject matter and material disclosed in the witness and exhibit list provided by Maui Tomorrow on or before February 18, 1998, pursuant to the Prehearing Order; and

3) restrict Intervenor Maui Tomorrow from engaging in repetitious and duplicative cross-examination by mandating that any individual conducting cross-examination on behalf of Intervenor Maui Tomorrow have attended, and continue to attend, all hearings in this case.

This motion is brought pursuant to Hawaii Revised Statutes § 91-1 et seq. and 205-1 et seq., sections 15-15-63, 65, and 70 of the Land Use Commission Rules, and is based upon the attached memorandum in support of motion, the attached Declaration of Allen R. Wolff, Exhibits A - D, and the records and files of this proceeding.

Pursuant to Section 15-15-70 (c) and (j) of the Land Use Commission Rules, Maui Electric Company, Limited does not request a hearing of this Motion, and therefore "the Commission may decide the matter upon the pleadings, memoranda, and other documents filed with the Commission." Land Use Commission Rules §15-15-70 (j).

DATED: Honolulu, Hawaii, March 25, 1998.

B. MARTIN LUNA
ALLEN R. WOLFF

Attorneys for MAUI ELECTRIC COMPANY, LIMITED

BEFORE THE LAND USE COMMISSION

STATE OF HAWAII

In the Matter of the Petition of MAUI ELECTRIC COMPANY, LIMITED, a Hawaii corporation, 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 MEMORANDUM IN SUPPORT OF MOTION

MEMORANDUM IN SUPPORT OF MOTION

I. INTRODUCTION.

Many of the individuals conducting the cross-examination on behalf of Intervenor Maui Tomorrow will later testify in this case as experts on behalf of Maui Tomorrow. Based upon the two days of testimony taken so far, it is apparent that much of Maui Tomorrow's cross-examination has improperly included testimony by the cross-examiner, rather than restricting the cross-examination to questions. Furthermore, the cross-examination by Maui Tomorrow has been unnecessarily repetitious and duplicative of evidence already presented to the Land Use Commission by prior witnesses. Finally, from Maui Tomorrow's conduct thus far, it appears that Maui Tomorrow is relying upon, and intends to rely upon, materials and/or witnesses that were not identified and produced as required by the Commission's Prehearing Order, filed February 4, 1998. To expedite these proceedings and to protect Maui Electric Company, Limited's due

process rights, Maui Tomorrow should be ordered to abide by the provisions of the Land Use Commission's Prehearing Order, filed February 4, 1998 (Exhibit A). Accordingly, the Land Use Commission should order that:

1) Intervenor Maui Tomorrow may not submit exhibits or present witnesses that were not previously identified by the deadlines established in the Prehearing Order;

2) the testimony of Intervenor Maui Tomorrow's expert witnesses is restricted to the subject matter and material disclosed in the witness and exhibit list previously provided by Maui Tomorrow pursuant to the Prehearing Order; and

3) any individual conducting cross-examination on behalf of Intervenor Maui Tomorrow is required to have attended, and to continue to attend, all hearings in this case.

II. BACKGROUND.

Maui Tomorrow requested and has been allowed to use multiple individuals to conduct the cross-examinations of Maui Electric Company, Limited's witnesses. Transcript of Proceedings, page 228, lines 11-22 (Exhibit B). Maui Electric Company, Limited ("MECO") recorded its objection to this request when made, but Maui Tomorrow was nevertheless allowed to proceed in that fashion. Id. The Commissioners, MECO, and the other parties to this proceeding have patiently abided Maui Tomorrow's use of multiple cross examiners. It is clear, however, that many of the individuals conducting Maui Tomorrow's cross-examination have been testifying rather than examining. Transcript of Proceedings, page 143, lines 6-8 (CHAIRMAN ING: "Mr. Williamson, you understand the objection that you seem to be making statements rather than asking questions"). See also Transcript of Proceedings, page 146, lines 22-23 (CHAIRMAN ING: "Let me caution you your job is to ask questions, not make statements")

and page 147, lines 16, 23-25 (CHAIRMAN ING: "Mr. Williamson, keep to questions . . .. Mark [Sheehan], I'm going to ask you to control Mr. Williamson. You have him listed as a witness. He'll have more than ample time to make statements.") and Transcript of Proceedings, page 235, lines 9-11. (Exhibit B).

It is equally clear that many of Maui Tomorrow's cross-examiners have not attended all of the hearings in this case. As a result of their failure to attend these hearings during the testimony of prior witnesses, many of the questions that have been asked by Maui Tomorrow's cross-examiners have called for the "irrelevant, immaterial, or unduly repetitious" evidence described in Section 15-15-63 of the Land Use Commission Rules. Transcript of Proceedings, page 194, lines 6-10 (CHAIRMAN ING: "Mark [Sheehan], I'm asking going to ask you to control your representative. It's not easy for someone to keep slipping notes to the person that's asking questions, and that's why this is prolonged. Either the person has to know the question they're going to ask or step down.") (Exhibit B).

On February 4, 1998, the Commission filed its Prehearing Order in this case. That order required each party to submit its "exhibit list, exhibits, memoranda, or other documentary information it intends to submit at the hearing" no later than February 11, 1998. The parties were given until February 18, 1998 to amend those materials to include "information in response to the documents submitted [by the other party] on February 11, 1998." Prehearing Order, filed February 4, 1998, pp. 1-2 (Exhibit A).

The procedure for identifying witnesses was identical to the procedure for submitting exhibits. The Prehearing Order required each party to "identify all witnesses that will be providing testimony in support of the respective party's position" no later than February 11,

1998. Each party was then given until February 18, 1998 to "file a final witness list of all witnesses providing oral testimony, including any responsive or rebuttal witnesses." Prehearing Order, filed February 4, 1998, p. 2 (Exhibit A).

Accordingly, by February 18, 1998, all of the parties were required to have disclosed and/or submitted **all** of the exhibits and witnesses that would be presented to the Land Use Commission in this contested case. The rule regarding enforcement of the exhibit disclosure and witness disclosure requirements was specifically set forth by the Commission in the Prehearing Order:

> a party **shall not be allowed** at any hearing in this proceeding **to submit additional exhibits not previously submitted or present any oral testimony of any witnesses not previously identified** by the dates provided herein.

Prehearing Order, filed February 4, 1998, p. 2 (emphasis added)(Exhibit A).

Maui Tomorrow's conduct thus far, including its repeated reliance on and reference to exhibits and witnesses that were not previously disclosed, violates the Commission's Prehearing Order and the procedures established by the Commission for the proper conduct of this Contested Case Hearing. Such conduct also violates MECO's due process rights. 2 Am.Jur.2d Administrative Law § 334 (1994) ("A party is denied due process if the [Administrative Law Judge] later fails to comply with the pretrial order and the party is prejudiced by such failure"). See also Pacific Molasses Co. v. Federal Trade Commission, 356 F.2d 386 (5th Cir. 1966) (testimony of witness who was not named in pretrial order was admitted without notice, thereby denying party the opportunity to prepare effective cross-examination questions).

In order to expedite this proceeding and to avoid unnecessary repetition, MECO respectfully requests that the Commission restrict Maui Tomorrow from improper narratives during cross-examination and that the Commission enforce its Prehearing Order, filed February 4, 1998 by ordering that:

1) Intervenor Maui Tomorrow be precluded from submitting exhibits or presenting witnesses that were not previously identified by the deadlines established in the Prehearing Order;

2) that the testimony of Intervenor Maui Tomorrow's expert witnesses be limited to the subject matter and material disclosed in the witness and exhibit list provided by Maui Tomorrow on February 18, 1998, pursuant to the Prehearing Order; and

3) that Intervenor Maui Tomorrow be restricted from engaging in repetitious and duplicative cross-examination by mandating that any individual conducting cross-examination on behalf of Intervenor Maui Tomorrow have attended, and continue to attend, all hearings in this case.

III. DISCUSSION.

A. Intervenor Maui Tomorrow Should Be Precluded from Submitting Exhibits or Presenting Witnesses That Were Not Previously Identified by the Deadlines Established in the Commission's Prehearing Order.

MECO has complied in full with the Commission's Prehearing Order. MECO objects to Maui Tomorrow's failure to abide by the provisions of that Prehearing Order. Maui Tomorrow has violated the Prehearing Order by referring to and using materials that were not included in its exhibits, but were instead presented to the Commission only during public testimony received on February 26, 1998. Such action is an improper attempt to supplement the

record with testimony and exhibits that were not previously identified or disclosed by Maui Tomorrow as required by the Prehearing Order. It also constitutes an impermissible use of materials on which MECO has had no right to conduct cross-examination or to present rebuttal evidence. The right to cross-examination and to present rebuttal evidence is a right conferred upon all parties in contested cases. Town v. Land Use Commission, 76 Haw. 538, 524 P.2d 84 (Haw. 1977). See also 2 Am.Jur.2d Administrative Law § 355 (1994) ("The right to cross-examine witnesses is an essential right in quasi-judicial proceedings in which critical adjudicative facts are in dispute . . .. [T]he right to cross examine attaches when the administrative body receives any testimony or documentary evidence.").

1. Maui Tomorrow may not rely upon the testimony and evidence received from the general public during the Public Testimony portion of this proceeding because Maui Tomorrow is an Intervenor representing an interest that is "clearly distinguishable from that of the general public."

Maui Tomorrow has intervened in this action pursuant to Hawaii Revised Statutes § 205-1 et seq. The relevant statute provides that intervention should be granted to a person or entity that can demonstrate that its interest is "clearly distinguishable from that of the general public." Haw. Rev. Stat. § 205-4. See also Land Use Commission Rules § 15-15-52(c). By definition then, Maui Tomorrow's interest is "distinguishable from that of the general public" because it has requested and received intervenor status from the Land Use Commission.

The public testimony portion of this proceeding provided an opportunity for the general public to testify and submit exhibits. By definition, persons who testified during the public testimony portion of this proceeding were separate from Maui Tomorrow, a party that has intervened because its interest "is clearly distinguishable from that of the general public."

Public testimony was received on this petition pursuant to Haw. Rev. Stat. § 205-4(f), which allows public testimony from representatives of citizen or community groups who "desire to express the view of such citizen or community group concerning the proposed boundary change." Haw. Rev. Stat. § 205-4(f). That public testimony is different from the testimony and evidence that is to be presented by an intervenor-- *an intervenor is in the proceeding to express a viewpoint that "is clearly distinguishable from that of the general public."* Haw. Rev. Stat. § 205-4 and Land Use Commission Rules § 15-15-52(c).

If the intervenor is able to express nothing more than the views of the general public, then intervenor status is inappropriate. Maui Tomorrow has sought and received intervenor status, and so any reliance by Maui Tomorrow on the testimony and evidence received from the general public is not only improper, but also "irrelevant, immaterial, or **unduly repetitious**" of evidence already provided to the Land Use Commission during the public testimony portion of this proceeding. Land Use Commission Rules § 15-15-63(b).

2. The testimony and evidence received from the general public during the Public Testimony portion of this proceeding is separate from the testimony and evidence presented to the Commission during the contested case portion of this proceeding.

The testimony and evidence received by the Commission during public testimony on MECO's petition was, and is, separate and distinct from the contested case portion of this proceeding. Not all public hearings are contested cases. Simpson v. Dep't of Land and Natural Resources, 8 Haw. App. 16, 791 P.2d 1267 (Haw. Ct. App. 1990) (public hearing before DLNR was not a contested case hearing in accordance with department's rules; to hold otherwise would vitiate the right of agencies to make and enforce such rules). See also Takabuki v. Housing Fin. and Dev. Corp., 72 Haw. 466, 822 P.2d 955 (1991) (public hearing called for under Haw. Rev.

Stats. § 516-22 is not a contested case, but instead serves only an informational purpose to aid the agency in its determination). But see Mahuiki v. Planning Commission, 65 Haw. 506, 654 P.2d 874 (public hearing conducted pursuant to public notice is a contested case where rights to the development of land are declared over the objections of other residents and landowners).

Generally, a contested case is one in which an agency performs an adjudicative, rather than administrative, function. Hawaii Gov't Employees' Assn. v. Public Employees Comp. Appeals Board, 10 Haw. App. 99, 861 P.2d 747 (Haw. Ct. App. 1993). A contested case involves due process through a determination by the Commission "after an opportunity for agency hearing." Land Use Commission Rules § 15-15-03. See also Hawaii Revised Statutes § 91-1(5). Proceedings before the Land Use Commission involve "quasi-judicial procedures which [] ensure the effective application of established state land use policies through an adversarial process in a hearing . . .." Land Use Commission Rules § 15-15-34. As a quasi-judicial proceeding, the notions of due process apply. Coral Kingdom of Kaneohe, Ltd. v. Harter, 65 Haw. 247, 250, 649 P.2d 1159, 1161-62 (Haw. 1982) (Arbitration, as a quasi-judicial proceeding, includes notions of due process and failure to ensure due process was grounds to vacate arbitration award). See also 2 Am.Jur.2d Administrative Law § 355 (1994) ("The right to cross-examine witnesses is an essential right in quasi-judicial proceedings in which critical adjudicative facts are in dispute).

The testimony and evidence from the public testimony portion of this proceeding is separate from Maui Tomorrow's witness and exhibit list (just as it is separate from MECO's witness and exhibit list). In fact, during the public testimony portion of this proceeding, the Commission specifically excluded Maui Tomorrow's witnesses from testifying whenever it

appeared that those witnesses would later testify on behalf of Intervenor Maui Tomorrow in the contested case. See, e.g., Transcript of Proceedings, page 55, line 17 to page 56, line 2 (During public testimony, an individual identified as a witness who would later testify for Maui Tomorrow appeared and was advised by CHAIRMAN ING: "Maybe [when you testify for Maui Tomorrow] you should include what you are presenting today along with your other statements . . . at that time you will be subject to cross-examination") (Exhibit B). It is therefore improper for Maui Tomorrow to attempt to supplement its case by using materials produced during the public testimony portion of this proceeding because any materials on which Maui Tomorrow intended to rely were required to have been produced on or before February 18, 1998.

3. Since MECO had no opportunity to cross-examine witnesses or present rebuttal evidence in response to the public testimony portion of this proceeding, Maui Tomorrow may not rely upon such testimony or evidence without violating MECO's right to due process.

Maui Tomorrow's conduct violates MECO's due process rights in the contested case portion of this petition because MECO's presentation in the contested case was, and is, based upon the information disclosed by Maui Tomorrow under the Prehearing Order. 2 Am.Jur.2d Administrative Law § 334 (1994) ("A party is denied due process if the [Administrative Law Judge] later fails to comply with the pretrial order and the party is prejudiced by such failure"). See also Pacific Molasses Co. v. Federal Trade Commission, 356 F.2d 386 (5th Cir. 1966) (testimony of witness who was not named in pretrial order was admitted without notice, thereby denying party the opportunity to prepare effective cross-examination questions).

Contested case procedures are intended to provide a full hearing so that all parties may, by evidence and argument, establish the propriety or impropriety of the step asked to be

taken. In re Kauai Elec. Div. Of Citizens Utils. Co., 60 Haw. 166, 590 P.2d 524 (Haw. 1978) citing New England Divisions Case, 261 U.S. 184 (1923). MECO had no way of knowing what would be said or produced during the public testimony portion of this proceeding. MECO prepared its contested case presentation based upon the information disclosed by Maui Tomorrow pursuant to the Prehearing Order. MECO has never been provided with copies of the materials presented by witnesses during the public testimony. Accordingly, Maui Tomorrow may not use such materials or testimony in the contested case because it violates MECO's right to prior disclosure of the evidence that Maui Tomorrow would present in opposition to MECO's petition.

It is well established that administrative agencies may not consult sources outside the record when acting in an adjudicatory capacity. Haw. Rev. Stat. § 91-9(g). See also Town v. Land Use Commission, 55 Haw. 538, 524 P.2d 84 (Haw. 1977) and Mauna Kea Power Co. v. Board of Land and Natural Resources, 76 Haw. 259, 874 P.2d 1084 (Haw. 1994). The reason for this rule is that reference to sources outside the record violates "the right of a party to cross-examine those sources and present rebuttal evidence." Town v. Land Use Commission, 76 Haw. at 549, 524 P.2d at 91. Indeed, many administrative bodies distinguish between evidence that has been subject to cross-examination/rebuttal and evidence that has not. In such instances, greater weight is given to evidence subjected to cross-examination and rebuttal because the parties have explored its probative value. See, e.g., 2 Am.Jur.2d Administrative Law § 359 (1994) ("Prejudice may also arise if an agency seizes an apparently minor exhibit in a large record and makes it an important basis for its decision *without granting an opportunity for full cross-examination, rebuttal, or argument*") (emphasis added).

The record clearly shows that MECO was not able to cross-examine the witnesses who testified during the public testimony portion of this proceeding. The record clearly shows that MECO was not able to present rebuttal evidence in response to the witnesses who testified during the public testimony portion of this proceeding. Indeed, MECO had to submit its final list of witnesses and evidence more than one week before the public testimony was even received. Accordingly, the testimony and evidence received during the public testimony portion of this proceeding is outside the record of the contested case portion of this proceeding. Since MECO was not able to "cross-examine those sources and present rebuttal evidence," such material is not entitled to be given the same weight as the evidence produced by the parties during the contested case. Furthermore, such material is not available for Maui Tomorrow's use in the contested case because such use would be a violation of MECO's rights under Haw. Rev. Stat. § 91-9(g) and Town v. Land Use Commission, 55 Haw. 538, 524 P.2d 84 (Haw. 1977).

In this case, MECO was never given an opportunity to cross-examine or present rebuttal evidence in response to the testimony and evidence received during the public testimony portion of this case. Materials and testimony received during the public testimony on this petition therefore are not entitled to be given the same evidentiary weight as evidence received from the parties during the contested case. Because that material was not part of Maui Tomorrow's exhibits, Maui Tomorrow is not entitled to rely upon it. That material is before the Land Use Commission independent from the parties involved in the contested case portion of this proceeding and the Commission may do with that material as it sees fit. The parties in the contested case are precluded from relying upon or presenting such material unless it was already included in their exhibits.

B. The Testimony of Intervenor Maui Tomorrow's Expert Witnesses Should Be Limited to the Subject Matter and Material Disclosed in the Witness and Exhibit List Provided on or before February 18, 1998.

The Commission ordered the parties to submit their **final** witness lists and exhibits, **including rebuttal material**, by February 18, 1998. In its witness list, Maui Tomorrow identified seven individuals: Prof. Dick Mayer, Ian Chan-Hodges, James Williamson, Marc Drehsen, Roy Smith, Erik Frye, and Steve Moser, MD. (Exhibit C). In its Exhibit List, Maui Tomorrow identified and submitted twenty-one exhibits on or before February 18, 1998. (Exhibit D). Maui Tomorrow's witness list provided a detailed listing of 1) the area in which the expert was qualified; 2) the subject matter of the expert's testimony; 3) confirmation that written testimony would be provided for each of the seven expert witnesses;[1] and 4) the exhibits that each expert would address.[2] (Exhibit C).

MECO relied upon Maui Tomorrow's witness list and exhibit list in the preparation of its case and in its presentation of evidence to the Commission. Maui Tomorrow is therefore bound by the information contained in its Exhibit List and its Witness List for two reasons: 1) the Commission's Prehearing Order required Maui Tomorrow to disclose this information and specifically ordered that *information not included "would not be allowed at any hearing in this proceeding"*; and 2) MECO has relied on the information disclosed by Maui Tomorrow and would be prejudiced by any attempt to go beyond the information already disclosed. As such, Maui Tomorrow is bound by, and limited to, the information disclosed in its

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[1] Maui Tomorrow has never provided the Commission, MECO, nor any of the other parties with such written testimony.

[2] Maui Tomorrow has not identified any witness who will address Exhibit Nos. 5, 10, 11, 12, 20, and 21. They should therefore be disregarded as hearsay.

Witness List and its Exhibit List by not only the Prehearing Order, but also by notions of due process. 2 Am.Jur.2d Administrative Law § 334 (1994) (a party is denied due process by failure to comply with pretrial order). This is especially so where, as here, Maui Tomorrow has failed and/or refused to provide written summaries of the testimony to be offered by its experts.

C. Individuals Conducting Cross-examination on Behalf of Maui Tomorrow Should Be Required to Have Attended, and to Continue to Attend, All Hearings in this Case.

The two days of these proceedings have made it abundantly clear that much of Maui Tomorrow's cross-examination has been repetitive and duplicative of evidence already presented by MECO witnesses who have concluded their testimony. Had the cross-examiner been present when the relevant witness testified on behalf of MECO, the questions could have been asked of the appropriate witness. Instead, Maui Tomorrow has used multiple cross-examiners who have failed to attend all of the hearings conducted thus far. Through this cumbersome procedure, Maui Tomorrow has protracted these proceedings by slow and repetitive cross-examination of MECO's witnesses. See, e.g., Transcript of Proceedings, page 194, lines 6-10 (CHAIRMAN ING: "Mark [Sheehan], I'm asking going to ask you to control your representative. It's not easy for someone to keep slipping notes to the person that's asking questions, and that's why this is prolonged. Either the person has to know the question they're going to ask or step down.") (Exhibit B).

To avoid this repetition and to expedite these proceedings, MECO requests that the Land Use Commission modify its ruling relating to Maui Tomorrow's use of multiple cross-examiners to further mandate that any such individuals be required to have attended, and to continue to attend, all hearings conducted in this case. By so doing, the Commission will be able

to avoid cross-examination relating to evidence and testimony that has already been received by the Commission from other witnesses.

IV. CONCLUSION.

For the foregoing reasons, the Land Use Commission should grant 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.

DATED: Honolulu, Hawaii, March 25, 1998.

B. MARTIN LUNA
ALLEN R. WOLFF

Attorneys for MAUI ELECTRIC COMPANY, LIMITED

BEFORE THE LAND USE COMMISSION

STATE OF HAWAII

In the Matter of the Petition of MAUI ELECTRIC COMPANY, LIMITED, a Hawaii corporation, 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 DECLARATION OF ALLEN R. WOLFF; EXHIBITS A - D

DECLARATION OF ALLEN R. WOLFF

1. I am an attorney with the law firm of Carlsmith Ball Wichman Case & Ichiki. I have personal knowledge of the facts set forth below and would be competent to testify thereto.

2. Exhibit A is a true and correct copy of the Land Use Commission's Prehearing Order filed in this matter on February 4, 1998.

3. Exhibit B is a true and correct copy of selected portions of the Transcript of Proceedings taken in this matter on February 26 and 27, 1998.

4. Exhibit C is a true and correct copy of Intervenor Maui Tomorrow's Witness List, filed on or before February 18, 1998.

5. Exhibit D is a true and correct copy of Intervenor Maui Tomorrow's Exhibit List, filed on or before February 18, 1998.

Executed on March 25 , 1998, Honolulu, Hawaii.

ALLEN R. WOLFF

ALL-STATE® LEGAL 800-222-0510 ED11 RECYCLED



Exhibit A

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI'I

In the Matter of the Petition of MAUI ELECTRIC COMPANY, LIMITED, a Hawai'i corporation 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, Hawai'i, TMK 3-8-03: 23 and 24	DOCKET NO. A97-722 PREHEARING ORDER

This is to certify that this is a true and correct copy of the document on file in the office of the State Land Use Commission, Honolulu, Hawaii.

FEB - 4 1998 by
Date Executive Officer

LAND USE COMMISSION
STATE OF HAWAII
FEB 4 8 01 AM '98

PREHEARING ORDER

EXHIBIT A

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI'I

In the Matter of the Petition of MAUI ELECTRIC COMPANY, LIMITED, a Hawai'i corporation 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, Hawai'i, TMK 3-8-03: 23 and 24	DOCKET NO. A97-722 PREHEARING ORDER

PREHEARING ORDER

This Prehearing Order is issued pursuant to Section 15-15-57 of the Land Use Commission Rules.

WHEREAS, the Commission desires to expedite the orderly conduct and disposition of this proceeding by a prompt and timely exchange of exhibits, written testimonies, and witness lists;

WHEREAS, at the Prehearing Conference held on February 3, 1998, the parties were informed regarding the issuance of a Prehearing Order concerning the timely submission of witness lists, exhibit lists, and exhibits to all parties; now, therefore,

IT IS HEREBY ORDERED that no later than February 11, 1998, each party shall submit to the Commission and serve upon the other parties any amended exhibit list, exhibits, memoranda, or other documentary information it intends to submit at the hearing; and, that no later than February 18, 1998, a party may submit and serve upon the other parties any amended exhibit list,

exhibits, memoranda, or other documentary information in response to the documents submitted on February 11, 1998.

IT IS FURTHER ORDERED, that no later than February 11, 1998, each party shall identify all witnesses that will be providing testimony in support of the respective party's position; and, that no later than February 18, 1998, each party shall file a final witness list of all witnesses providing oral testimony, including any responsive or rebuttal witnesses;

IT IS FURTHER ORDERED, that unless there has been a showing of good cause or the lack of significant prejudice, filings or submissions which are untimely may be stricken or rejected by the Commission at the time of the hearing; and

IT IS FURTHER ORDERED, that unless there has been a showing of good cause or lack of significant prejudice, or unless otherwise ordered by the Commission, a party shall not be allowed at any hearing in this proceeding to submit any additional exhibits not previously submitted or present any oral testimony of any witness not previously identified by the dates provided herein.

Dated: Honolulu, Hawai'i, February 4, 1998.

LAND USE COMMISSION
STATE OF HAWAI'I

By _____
ESTHER UEDA
Executive Officer

BEFORE THE LAND USE COMMISSION

OF THE STATE OF HAWAI'I

In the Matter of the Petition of MAUI ELECTRIC COMPANY, LIMITED, a Hawai'i corporation 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, Hawai'i, TMK 3-8-03: 23 and 24	DOCKET NO. A97-722 CERTIFICATE OF SERVICE

CERTIFICATE OF SERVICE

I hereby certify that a copy of the Prehearing Order was served upon the following by either hand delivery or depositing the same in the U. S. Postal Service by certified mail:

DEL. RICK EGGED, Director
Office of Planning
P. O. Box 2359
Honolulu, Hawaii 96804-2359

CERT. DAVID W. BLANE, Director of Planning
Planning Department, County of Maui
250 South High Street
Wailuku, Hawaii 96793

CERT. JEFFREY SCHMIDT, ESQ.
Corporation Counsel, County of Maui
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200 South High Street
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CERT. B. MARTIN LUNA, ESQ., Attorney for Petitioner
Carlsmith Ball Wichman Case & Ichiki
One Main Plaza, Suite 400
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Wailuku, Hawaii 96793-1086

CERT. MARK SHEEHAN, Representing Intervenor
President, Maui Tomorrow
P. O. Box 429
Makawao, Hawaii 96768

DATED: Honolulu, Hawaii, this 4th day of February 1998.

ESTHER UEDA
Executive Officer

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Exhibit B

STATE OF HAWAII

LAND USE COMMISSION

ADOPTION OF DECISION AND ORDER: A97-722- MAUI ELECTRIC CO., LTD.
HEARING:
A97-722 MAUI ELECTRIC CO., LTD. - B. MARTIN LUNA AND ALLEN WOLFF ON BEHALF OF MAUI ELECTRIC COMPANY, LTD. (Maui)

VOLUME I OF II

Taken on February 26, 1998 at Nahele Room, Sandalwood Clubhouse, 2500 Honoapiilani Highway, Waikapu, Maui, Hawaii, commencing at 10:20 a.m.

REPORTED BY: GLORIA T. TAVARES, RPR/CSR #262

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CASE NO. A97-722	
FOR THE PETITIONER:	B. MARTIN LUNA, ESQ. ALLEN WOLFF, ESQ.
FOR THE COUNTY OF MAUI:	KELLY CAIRNS, ESQ. Deputy Corporation Counsel COLLEEN SUYAMA Maui County Planning Department
FOR THE STATE OF HAWAII:	ANN OGATA-DEAL, ESQ. Deputy Attorney General ABE MITSUDA, OSP
FOR THE INTERVENOR:	MARK SHEEHAN Maui Tomorrow

INDEX

PUBLIC HEARING	PAGE
JEFFREY PARKER	11
MADELYN D'ENBEAU	18
DIANA DAHL	25
LUCIENNE DE NAIE	28
DANIEL GRANTHAM	32
GLENN SHEPHERD	39, 63
DAVID PATTON	45
TOM ULICK	47
SCOTT CRAWFORD	49
MARK DREHSON	54, 66
CONSTANCE PALMORE	56

PETITIONER'S WITNESSES	PAGE
EDWARD REINHARDT	
Direct Examinaton by Petitioner	82
Cross-Examination by County	94
Cross-Examination by State	97
Cross-Examination by Intervenor	99
Redirect Examination by Petitioner	105
AMY DUNN	
Direct Examination by Petitioner	107
Cross-Examination by Intervenor	108
Redirect Examination by Petitioner	109
YOICHI EBISU	
Direct Examination by Petitioner	110
Cross-Examination by Intervenor	112, 114
Redirect Examination by Petitioner	115

MINISCRIPT

(Pursuant to Rule 14 of the Rules Governing Court Reporting in Hawaii, the Reporter's Disclosure was made and is attached hereto.)

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LAWRENCE ING: Before taking up Item No. 2, the Commission needs to take up Item No. 3 which is adoption of decision and order in A97-722, Maui Electric Company, Ltd. the order granting petition for intervention filed by Maui Tomorrow. We have a draft of the order before us.

Are there any questions by the commissioners? If not, the chair entertains a motion.

RUPERT CHUN: So moved.

LAWRENCE ING: Moved by Commissioner Chun.

JOANN MATTSON: Second.

LAWRENCE ING: Seconded by Commissioner Mattson. Discussion?

All those in favor reply by saying aye.

(A chorus of ayes.)

All those opposed say nay.

Motion is carried. The formal order has been entered permitting the intervention by Maui Tomorrow.

At this time, this is a hearing of the Land Use Commission, Docket Number 97-722, Maui Electric Company, to consider reclassifying approximately 65.7 acres of land currently in the Agriculture District into the Urban District

EXHIBIT B

Page 53

point, nowhere in their EIS study, nowhere in their petition to you, that I can find, do they state that this is the reason that they need to have this land rezoned and to build this plant.

So there's been no opportunity for public review, no disclosure of public to the public of the documents that come up with their reasoning behind their analysis of saying that they still need this plant, even though the demand is not going to be there. There's no opportunity for the public to analyze and question those reasons. And this assumption is at very basis of -- it's page 2 of the EIS. It's the very basis for their whole argument and their whole proposal and their whole petition to you.

So to me it seems like given these things, they should go back and redo the EIS based on a statement of their actual intention and their actual need for building this plant, and that they should be -- the public should have the due process -- the input process to be able to analyze and comment on those things because that opportunity has not been made available.

And so on that basis alone, I would urge you to deny this request for the change in zoning. I think that in terms of we do need to address the energy situation, but I think that as you'll hear -- you've heard in other testimony, and as you will either from some of the expert witnesses and the

Page 54

Intervenor tomorrow, there are plenty of alternatives. There are better ways. There are future ways. This is a very old technology.

Through much more aggressive conservation and efficiency programs and through peak management programs, Demand-Side management, and also through alternative supplies that are renewable that are coming right down to our island right here that we don't have to import to create more jobs in the local economy, that don't have a negative impact on the environment. All these things are technologically feasible. They are economically feasible particularly when you consider the change in economics in oil over the next 10 to 20 years as the plant gets built and comes into production.

So I urge you, as you hear Maui Electric Company's presentation, to keep these things in mind and seriously consider them.

I thank you for your time and your attention. Mahalo.

LAWRENCE ING: Any questions from the Commissioners? None, thank you.

Marc Drehson.

MARC DREHSON: Good morning my name is Marc Drehson. I will be working with Maui Tomorrow assisting them in the intervention process. But before that, I would like to speak on behalf of the Maui Clean Coalition. I'm a member of this

Page 55

coalition, and I have a bachelors degree in meteorology and 15 years in the air quality and meteorology field. And so I represent them in this issue.

The members of the clean air coalition are devastated by the proposal to build the Waena generating station. We citizens of Kihei have not yet freed ourselves from the sickness caused by random cane smoke. Now we find we'll be subjected to the likely constant fumigation from diesel pollutants.

The Waena generating station will be situated in a situation where the predominant tradewind conditions will be from the direction which will fumigate the entire Kihei/Wailea community of 20,000 people most of the time. Many of us moved to Kihei because the air is clean. Clean air will obviously become a thing of the past if the Waena generating station is built.

LAWRENCE ING: Are you going to testify later as one of the witnesses for Maui Tomorrow?

MARC DREHSON: Yes.

LAWRENCE ING: Maybe at that time you should include what you are presenting today along with your other statements.

MARC DREHSON: Even though we'll be representing a different group?

LAWRENCE ING: Well, at that time you will be

Page 56

subject to cross-examination. So it's a little different format.

MARC DREHSON: If you prefer it that way, that's fine. Thank you.

LAWRENCE ING: Constance Palmore.

CONSTANCE PALMORE: Aloha. Thank you for your attention. My name is Constance Palmore, and I'm the chair of the Sierra Club Maui group. I actually was not preparing to testify before you guys, so I don't have written testimony. I have notes, so bear with me.

Couple of points I would like to make. Not to be redundant, I'm going to do my best not to be redundant because I think a lot has been said by a lot of citizens trying to bring out some of the ideas that have not been addressed by the environmental impact statement.

By these volumes of information that you guys get, I have to say I don't know how you are not overwhelmed. It's a stack. It comes in a box. Obviously that's just the way the process is. I just really appreciate all the people that come and try in their small way with their two pages to contribute something.

First, I would like to address the IRPDSM process. MECO will come before you and testify and say that they have involved the public, they have done focus groups, they heard what people have to say, and I have to say for myself that I

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COPY

MINISCRIPT

Taken on February 27, 1998, at the Sandalwood Clubhouse, Nahele Room, 2500 Honoapiilani Highway, Waikapu, Maui, Hawaii, commencing at 9:10 a.m.

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REPORTED BY: RACHELLE PRIMEAUX, RPR/CSR #370

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CASE NO. A97-722

For the Petitioner:	B. MARTIN LUNA, ESQ. ALLEN WOLFF, ESQ.
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For the State of Hawaii:	ANN OGATA-DEAL, ESQ. Deputy Attorney General ABE MITSUDA
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INDEX

WITNESSES	PAGE
LESLIE VERNON MATHINE	
Direct Examination by Petitioner	122
Cross-Examination by the County	138
Cross-Examination by the State	140
Cross-Examination by the Intervenor	142
EARLE H. IFUKU	
Direct Examination by Petitioner	149
Cross-Examination by the County	162
Cross-Examination by the Intervenor	167
Redirect Examination by Petitioner	195
ARTHUR SEKI	
Direct Examination by Petitioner	196
Cross-Examination by the County	223
Cross-Examination by the State	225
Cross-Examination by the Intervenor	228
DR. THOMAS A. SCHROEDER	
Direct Examination by Petitioner	244
Cross-Examination by the County	261
Cross-Examination by the Intervenor	263

(Pursuant to Rule 14 of the Rules Governing Court Reporting in Hawai'i, the Reporter's Disclosure was made and is attached hereto.)

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CHAIRMAN ING: Good morning, everyone. Yesterday afternoon I think we adjourned a little after 3:00 and we were on our way to the site inspection. At that time, I had announced that we would reconvene at 9 a.m. Today it is now approximately 9:10 a.m. and so far I think the intervenors or representatives have not come to this morning's meeting, but I thought we should proceed. Present are the same commissioners that were here yesterday. And, for the record, may I ask the representatives of the parties to introduce themselves?

MR. LUNA: Mr. Chairman and members of the commission, I'm Martin Luna representing Maui Electric Company. To my left is Allen Wolffe, one of our senior associates also representing Maui Electric and Bill Bonnet who is president of Maui Electric.

MS. CAIRNS: Good morning, commissioners. I'm Kelly Cairns, Deputy Corporation Counsel, representing the Maui Planning Department. And on my right is Colleen Suyama from the Maui Planning Department.

MS. OGATA-DEAL: Good morning, I'm Deputy Attorney General Ann Ogata-Deal and Abe Mitsuda representing the State Office of Planning.

CHAIRMAN ING: Thank you all. Mr. Luna, will you continue with your presentation?

MR. LUNA: Thank you, Mr. Chairman. The next witness is Les Mathine. And for the information of the commissioners, we will be generally following the -- Mr. Mathine will be followed by Mr. Ifuku and Mr. Seki and Mr. Kiyonaga.

DIRECT EXAMINATION

BY MR. LUNA:

Q. Please state your full name.

A. My name is Leslie Mathine from Stone & Webster Engineering in Englewood, Colorado.

Q. And what is your position with your company?

A. I'm a senior lead engineer.

Q. And what does Stone & Webster do?

A. Stone & Webster is involved with large power projects, petroleum, petrochemical, industrial and government and infrastructure.

Q. When did Stone & Webster become involved with Maui Electric in this selection of the new site?

A. Stone & Webster started in 1995 when they conducted the final site study for the selection of the site for the power plant.

Q. What did Stone & Webster do?

A. We evaluated the final three sites which were

Page 143

of the fuel. I have never quite seen a recommendation that was ambiguous as yours was in the report.

MR. LUNA: May I object, Mr. Chairman? This is supposed to be cross-examination. Mr. Williamson seems to be trying to testify his position on this matter.

CHAIRMAN ING: Thank you. Mr. Williamson, you understand the objection that you seem to be making statements rather than asking questions?

MR. WILLIAMSON: I'll quote what's in the report.

CHAIRMAN ING: You don't have to do that. We have the report. Ask a question.

MR. WILLIAMSON: But the report says, and I must say that I have to do this to bring up the point.

CHAIRMAN ING: Go ahead.

Q. The report, and I quote, trucking of fuel, this is the recommendations. Trucking of fuel, although relatively inexpensive now, could increase dramatically. The 1987 trucking cost used in the Maalaea fuel study was $1.42 a barrel, nearly double the trucking cost used in this study. If the delivery cost would increase in this magnitude in the future, it would make a pipeline for secondary containment economically more attractive. Why was not the fuel cost in the Maalaea fuel study used?

A. What we used was the present day cost when the fuel study was done and escalated from that point.

Page 144

Q. Well, the Maalaea fuel study was -- even prior to that, it was certainly a present day cost I would think.

A. It was a present day cost. The report -- the fuel study that we put into the EIS report was based upon those present day costs, fuel delivery costs, excuse me.

Q. I'm still not understanding why the Maalaea fuel study cost was not used.

A. The Maalaea fuel study cost?

Q. Yes, it was current certainly at that time.

A. Essentially we did use that. What we were talking about in what the statements that you referred to was costs back in 1987. We used the costs that were current in 1995-'96.

Q. Why then is the recommendation so kept it doesn't come out and say trucking is the way to go, period, rather than this qualification that indicates that potentially a pipeline is the best way to go?

A. Potentially a pipeline would be if trucking costs increased dramatically. We didn't anticipate that in the study.

Q. However, you are making a decision now that the pipeline is forever abandoned because there's no way you're going to put in a pipeline later when the plant is built.

MR. LUNA: I'm going to object to that because that's not his testimony. His testimony in my questioning of

Page 145

him said that there might eventually be a time, and he has reiterated that there could be a time if the pipeline, if the trucking costs increased dramatically, that it would be more economical to go to the pipeline. That's his testimony.

CHAIRMAN ING: I think we all heard that.

Q. The other issue is that, as quoted in the report, the study does not include costs associated with additional costs for road maintenance for the truck traffic. Why not?

A. Typically, that maintenance is done by the state or the county, whoever's road that is, and we did not include it because it was hard to identify that cost in the study as if MECO would be subjected to that cost.

Q. So you don't think that that was your responsibility to add that in as an associated cost for trucking?

A. It was a cost that was undefined or indefinable at that point.

Q. At buildout though, the 44 daily trips of 9,000-gallon tankers from the harbor to the plant, did you make any evaluation of what the traffic situation might be under those conditions and what kind of increased air pollution we would get in the area?

A. Well, obviously with the 44 trucks, it would be increased above what current day traffic is to the site. But, no, we did not do an evaluation of the air pollution that those trucks would cause.

Page 146

Q. Moving to the water supply, the ground water right now, are you aware that the County of Maui has an ordinance that requires the use of waste -- mandates the use of wastewater for development?

A. No, I am not aware of that.

Q. If indeed a pipeline was constructed, certainly it would make a lot of sense, and it may be mandated by the county, to include a 6-inch water pipeline from the wastewater treatment plant at Kahului and avoid all the problems you may have with pumping from ground water. Would you agree?

A. In addition to the supply line, you would also need a return line to the treatment plant because typically you'll have biologicals from the waste treatment plant that you do not want to deal with as far as a disposal option, and those are typically sent back, so you not only would add one line, you would add two.

Q. No, that's not so here, because what we're talking about is R-1 water that's really being treated to the point that it can be used for irrigation alongside a residence and even for drinking.

MR. LUNA: May I object to that as --

CHAIRMAN ING: Let me caution you your job is to ask questions, not to make statements.

MR. LUNA: And if he's referring to a statute or ordinance of the county, if he can show that to Mr. Mathine, I

Page 147

think it would be clearer as to what the county requires in that ordinance. I don't think Mr. Williamson is quoting the ordinance correctly.

CHAIRMAN ING: Well, I think the response from the witness was that he was not aware of the requirements of the ordinance.

MR. LUNA: That's why I'm saying with Mr. Williamson's continuing comments, that perhaps he should show Mr. Mathine the ordinance. Either that or not ask him anymore about the ordinance.

MR. WILLIAMSON: Well, my answer to that, I am very familiar with that ordinance because I testified before the county council.

MR. LUNA: I'm going to object to his continuing statements, Mr. Chairman.

CHAIRMAN ING: Mr. Williamson, keep to questions.

Q. I believe that this should be investigated, this potential of bringing in water from the wastewater treatment plant. It is already R-1 water and treated to the point that it could be used. And even if it had to be used in the reverse osmosis process, there would be much less and much better quality water --

CHAIRMAN ING: Mark, I'm going to ask you to control Mr. Williamson. You have him listed as a witness. He'll have more than ample time to make statements.

Page 148

MR. WILLIAMSON: That's all I have.

CHAIRMAN ING: Thank you. Commissioners? I have a question. In your calculation of when you tried to weigh the factors, did you take into account the necessity of any roadway improvements such as right-turn lanes or widening of the road and that bridge that seemed to be very narrow?

THE WITNESS: We looked at capital cost improvements from the road, Pulehu Road onto the site. Certainly the capital costs associated with right-turn lanes in and out of the plant are relatively a small portion of the capital costs, and we took those into consideration in the infrastructure to each site.

CHAIRMAN ING: Other questions? Mr. Luna, any questions of this witness?

MR. LUNA: No.

CHAIRMAN ING: Okay. Thank you. We're going to call for a ten-minute break.

(Recess taken.)

CHAIRMAN ING: We can reconvene. All the commissioners are present and so are the parties except the state. Mr. Luna, may we ask you to continue with the next witness.

MR. LUNA: Mr. Chairman and members of the commission, Mr. Mathine had corrected this chart, which is Exhibit C57. I just want to make sure that you note that the

Page 149

correction also included the change in the number up here on the exhibit from 72 to 75 because the elimination of that wastewater 3 percent then would change that number, so it's just a mathematical change.

CHAIRMAN ING: It will be so noted.

MR. LUNA: Our next witness is Mr. Ifuku.

DIRECT EXAMINATION

BY MR. LUNA:

Q. Would you state your full name, sir?

A. Good morning, Mr. Chairman and members of the commission. My name is Earle H. Ifuku, and my business address is 210 West Kamehameha Avenue, Kahului, Maui, Hawaii.

Q. And Mr. Ifuku, what is your position? Where do you work?

A. I'm the manager of the customer service department at Maui Electric Company, Limited, or MECO.

Q. What is your responsibility at Maui Electric?

A. As MECO's manager of customer service, I'm responsible for the daily operations of the customer service department, which includes field service, and in addition to that, I'm responsible for integrated resource planning, demand side management planning and forecasting.

Q. Could you explain what integrated resource planning is?

A. Integrated resource planning is a commission process

Page 150

from the Public Utilities Commission that governs all of the energy utilities in the State of Hawai'i. It's a broad framework for an energy blueprint, if you will, that the commission adopted in 1992, and the result of that framework for all the utilities is a 20-year master plan, if you will, near and long-term energy needs of all of the utilities on all of the islands. And it's an ongoing process. It's not a plan that's developed once. There is a formal cycle -- a three-year cycle for resubmissions of the comprehensive plan with annual reviews every year and updates as stats reports to the commission.

Q. Is there any kind of community participation in this integrated resource plan?

A. The commission's framework adopts several governing principals, if you will, upon which the spirit and intent of each company's IRP plan is governed. One of those has to do with public input, advisory input in the plan. In the case of Maui Electric Company, the Hawai'i Public Utilities Commission found that MECO's IRP planning was a very comprehensive process.

MECO's IRP advisory group is comprised of approximately 24 members representing quite diverse perspectives from the state and county government, business community, environmental organizations and interested individuals including representatives from Lanai and Molokai as

Page 191

object to these series of questions which lead to just speculation.

MR. CRAWFORD: Mr. Chairman, I would like to make a comment. He is the long-range planner and it states right in the EIS that his entire job is one big speculation. So I don't think it's reaching to ask him to speculate on these things that go right to the point of whether they need the power plant.

CHAIRMAN ING: Well, I think the idea is how relevant this line of questioning is, and maybe if the witness doesn't know, he should say, "I don't know."

THE WITNESS: I'm sorry, I don't know.

Q. Well, let me ask it this way. Are you aware of homes or do you know individuals who would be prohibited from participating in this program because of the initial upfront cost to them?

A. I'm sorry, I don't know. Same answer to the same question, basically.

Q. Is it conceivable that there are homes that might be reached with this program if there were financing in place that wouldn't be reached under the current configuration?

A. Well, I'm glad you asked that question. We actually do have financing in place. I should have pointed out that part of what we recognized was that upfront cost is an issue for many people. We approached all of the credit unions on the

Page 192

island of Maui because of the utilities' involvement and the integrity that the utility brings to the solar contracting industry. And, if you will, some of us remember the scandals of the '70s when the federal tax credits were around and installations went in and it was pretty shoddy stuff.

But because of the utilities' role in certifying the system, they've been willing to offer below market financing as much as 3 percent below so that customers do not have to come up with upfront costs, if you will. And we worked it out where effectively the monthly savings basically pays for the principal and interest on that particular installation.

CHAIRMAN ING: I'm going to ring the bell in five seconds.

Q. Back to the forecasting again. You mentioned that you're always rolling in new options to your DSM program. Do you think that any of the new options that could be available before this power plant is constructed could affect the effectiveness of your DSM program by the time the plant would come on line? Is there new technologies, new approaches in the future that could come in that would affect your overall reduction of demand?

A. As part of our ongoing analysis, we don't see any.

Q. But you're willing to consider new options that come in; you are always bringing in new options?

A. That's also part of the planning process, that's

Page 193

correct. We do evaluate them based on the California Standard Practice Manual for Cost-Effectiveness and other changes in planning assumptions that may have occurred since the prior analysis.

Q. Back to your forecasting and the need. I'm sorry, I'm jumping around here. I apologize, I'm not an attorney. I'm just doing the best I can. When did you become aware of the difference between your 1997 projections and the actual need, the 4 percent and .4 percent actual growth rate?

A. When did we become aware? I suppose I want to answer it this way. There's always an inherent danger when you look at any single point in time and the particular data at that point that you could be making wrong decisions on the basis of some aberration, if you will.

We monitor our sales and peak load growth every month through the year and through that monitoring process as well as the development of a forecast every year, so it all kind of leads up into an annual cycle, if you will, where that information kind of gets rolled in.

Q. Are you aware that representatives of Maui Electric Company stated in public hearings in August on the Draft Environmental Impact Statement that plant was not intended to replace existing plants, that that wasn't part of the projected need?

A. It's not my understanding of the company's testimony

Page 194

in those hearings as well as the representation in the EIS. The EIS reflects in many places all aspects of the planning including unit retirements.

Q. All right. So your figures in terms of the cost, the rate increase to your customers --

CHAIRMAN ING: Mark, I'm asking going to ask you to control your representative. It's not easy for someone to keep slipping notes to the person that's asking questions, and that's why this is prolonged. Either the person has to know the question they're going to ask or step down.

MR. CRAWFORD: Okay. In that case, no further questions.

CHAIRMAN ING: Thank you. Commissioners, any questions?

COMMISSIONER YUKIMURA: Mr. Ifuku, just from my own perspective, what is the breakdown between residential and commercial accounts as far as dollar sales?

THE WITNESS: Composition of sales by class, this is based on 1996 information, but it's fairly representative, if you will. Residential sector Schedule R is roughly 34 percent, which sort of corrects my 40 percent generalization I had earlier. General service is considered GJ. They're the small commercial customers, kind of the mom and pop store type categories. They represent about 28 percent of our sales. We have a special rate for cooking, heating, air conditioning and

Page 227

commercial. We also moved dish engines, and it could have developed in state. So that sort of moved up in that technology.

Q. Does MECO have any plans or a program in place that would regularly advise the public or the users of power of progress in the direction of alternative fuels or technologies?

A. We've been putting out, we've put out a renewable energy brochure, and we've been handing it out to the public via a number of ways, through the fairs that we have at the malls, as bill stuffers when you get your electric bills. There would be that information. Also in what we call Consumer Lines, which is a monthly newsletter about it, there's articles in there on where we are in various stages of the evaluating technologies.

I think the most recent one talked about President Clinton's building solar roofs, and I think it reflected on some of the photovoltaic programs that the various utilities have been involved in.

Q. Do any of the alternative fuels or technologies described in the EIS use less water than the currently provided technology?

A. There are some. Wind would not require any water for generating electricity. Photovoltaics would not use any water. Solar thermal would require some water because it would be a steam system. Geothermal would use water because that's

Page 228

the main source. Biomass would use water also for the steam. Anything with a steam plant would require some water.

Q. Which one of the alternative fuels or technologies described in the EIS use less land than the currently prepared technology?

A. Actually none of them. Because renewables tend to be a little bit more land intensive, the fossil fuels would be the ones that will require the least amount of land.

MS. ANN OGATA-DEAL: Thank you.

CHAIRMAN ING: Questions from the intervenor?

MR. SHEEHAN: Mr. Chairman, because of the note passing in the last instance here and with the expert witnesses covering a number of topics as Mr. Ifuku did or Mr. Seki did, I wonder if with Mr. Seki we could have two people questioning him, Mr. Erik Frye and Mr. Dick Mayer on questions relating to costs?

CHAIRMAN ING: Not together, one at a time?

MR. SHEEHAN: One at a time.

CHAIRMAN ING: We can try it. Let's try.

MR. FRYE: Thank you. My name is Eric Frye.

MR. LUNA: Mr. Chairman, I'm sorry to interrupt. I would like just to register an objection on the procedure.

CHAIRMAN ING: So noted.

MR. SHEEHAN: We noted that, and we expected it.

CROSS-EXAMINATION

Page 229

BY MR. FRYE:

Q. I have a bachelor of science from the University of California at Berkeley. I've worked with photovoltaic for six years and solar thermal for 18. My first question is isn't it true that carbon dioxide emissions are affecting global weather patterns?

A. I don't know.

Q. And isn't it true that the Kiyoto Protocol in the 1992 Climate Change Treaty, which are delegate signed, calls for a 7 percent cut from 1990 levels by the year 2012 for carbon dioxide and nitros oxides?

A. I believe I've read something to that affect, yes.

Q. And as a result of having to develop alternatives to fossil fuel combustion, President Clinton signed an executive order in December 1997 doubling hydrogen funding?

A. I'm not aware of that part of it, no.

Q. That's true, too. In the hydrolysis of water, hydrogen oxygen is very efficient, would you say that's a true statement?

A. Using the electricity to split water to produce hydrogen I think can be deemed I guess efficient.

Q. Like 70 percent efficient?

A. I think that's probably a number I've read.

Q. In fuel cells, isn't it true they do not have to use liquid petroleum and that propane is simply a transitional fuel

Page 230

until hydrogen gas is more available?

A. I haven't seen any fuel cells -- I think all the fuel cell development thus far is run on fossil fuel, mainly natural gas. There's been very little work done on liquid fuels, and I have not seen too much done on straight hydrogen to electrical production aside from maybe a space use.

Q. Space in military?

A. Yes.

Q. And isn't it true that a decade of research has been done with fuel cells that run on hydrogen gas for both NASA and the U.S. Military?

A. I believe the space shuttle uses fuel cells, alkaline fuel cells that require certain feed stocks or fuels to feed that operation. In the stationary use or transportation use, there's not too much work being done in the alkaline area. It's more in the phosphoric acid or multi-carbonate and sulfur oxide fuel cells.

Q. Would you say that fuel cell power plants are characterized by high efficiency, minimal emissions, little noise and small land requirements?

A. That is correct from some of the information I've read there. They are also very costly right now. Of the few cell manufacturers out there, there's only one that manufacturers a 200-kilowatt fuel cell unit. I got to visit that operation on the mainland. We evaluated that unit in

Page 235

mainland, isn't it true the wind resources that we have on Maui, particularly in the central valley here, are among the best in the world?

A. I don't know if they are the best in the world.

Q. I was formerly the chair of the Mayor's Advisory Committee on Energy. At that time we were told by some UH researchers that Maui, the central valley particularly because of the valley configuration --

MR. LUNA: Mr. Chairman, I want to object to that. He's listed as a witness. If he can ask his question and then move on, please.

Q. Okay. Is the wind regime here among the very best?

A. It's a good -- I would say Hawai'i has good wind regimes. One has to put up wind monitoring stations at the sites that you're interested in to find out exactly if it's a good wind site. For example, Kahuku on Oahu is a wind site and perceived wind site. And with the wind measurements that was taken by the state and that was incorporated in our integrated resource planning process, and that coupled with a wind turbine, we found out that actually for that year of data, wind data that we had, it wasn't a very good site in actuality, which would probably explain why the wind farm right now is bankrupt and no one is operating it. So it depends on the site.

Q. Did your company find out why it didn't work there;

Page 236

is it because of the salty air or some other factor?

A. I think from what I understand at the wind farm in Kohuku, they lost money every year, and that was primarily due to a number of factors, one being that the anticipated wind speed that they were hoping to get was not there. Also that the environment that they worked in, the salt environment caused the operation maintenance cost to be very high. And also the way the location of the wind turbines on the ridge lines on the fingers of the ridges, you have wind coming in different directions, that also caused I guess accelerated wear and tear on the units. And the units themselves are one of a kind, first of a kind units from Westinghouse.

Q. Can the area under a wind farm be still utilized as a cattle graze or for growing pineapple as opposed to the site that is being proposed where it would be finished for agriculture; in other words, if you took the land, it would no longer be agricultural and it would be industrial land, could you use the land under a wind farm?

A. 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. One also has to be concerned, just because it's renewable, it 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

Page 237

with the other technologies also.

Q. Smoke stacks and things of that sort. The figures given in the EIS for a wind farm or wind production on Page 3-24 of the EIS, if you look at it, and this is where you're discounting wind as a possibility, it states that a 10 megawatt wind farm would cost $13.3 million; is that correct?

A. What part on Page 3-24?

Q. In the last paragraph, second sentence, the cost of a 10-megawatt system was estimated at approximately 13.3 million. Would you agree that's correct?

A. That's based on the IRP evaluation that we got.

Q. Now, if my understanding is correct, does the wind farm use any fuel?

A. No, it doesn't.

Q. Then if we extrapolate, then if we multiply the proposed site at Waena is 232 megawatts, 23 times bigger than this wind farm of 10 megawatts. If we multiplied the 23 times the 13, we would come up with a figure of, and I've calculated, you can agree or disagree, of $308 million. So, in other words, we could produce a wind farm on the scale of the developed Waena site for $308 million, would that be correct?

A. Based on your calculation, that would be, but it wouldn't be prudent for the system. As I explained earlier --

Q. That's not the question I'm asking. So, in other

Page 238

words, we could produce that many megawatts for $308 million. What is the cost of the site that you're now proposing, the capital cost? I could refer you to Page 3-14 in the EIS. And it's $417 million. In other words, is that correct?

A. I've seen that table, yes.

Q. So in other words, I'm not saying the energy resource is the same at this point. So, in other words, this fossil fuel burning plant would cost 417 million. A wind farm producing the same amount of electricity would cost 308 million, in other words, $110 million less for a wind farm than for fossil fuel. Now, my understanding is, this is where I have the question, would the fossil fuel plant have a fuel cost in addition to that capital cost?

A. I believe it would, yes.

Q. So, in other words, and the next question I have is in my electric bill at home or for one of the companies or if somebody has a business or farm and they buy electricity from you, they buy it at so many cents per kilowatt hour, 10, 12, 13, 14 cents per kilowatt hour. What portion of that hour is the fuel cost and what portion are we paying for the production of it, the capital cost of the factory or the diesel plant?

A. Offhand I don't know what it is.

Q. Can you give me a rough ball park, 50/50?

A. I don't know.

Q. Thank you. But, in other words, the $417 million

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Exhibit C

WITNESS LIST IN THE MATTER OF CASE DOCKET NO. A97-722

NAME/ORGANIZATION/ POSITION	TO BE QUALIFIED EXPERT IN	SUBJECT MATTER	WRITTEN TESTIMONY	EXHIBIT NUMBER	LENGTH OF DIRECT
Prof. Dick Mayer, Maui Community College, Prof. Of economics	Economics of energy planning &air pollution	community economic impacts, relation of various plans for water & land use	Yes	1,2,3,4	45 min.
Ian Chan-Hodges, Pacific Monitor Editor	Community Economics &Planning	impacts on community economics & resources. Energy planning	Yes	1,2,4,6	1 hr.
James Williamson, engineering consultant	electric power and water resources	fuel & alternatives, air quality, & water	yes		1 hr.
Marc Drehsen, meteorologist	air quality	air quality and impacts	yes		45 min.
Roy Smith, Hawai'i Organic Farmer's Assoc. Board Member	Air quality, agriculture resource planning	air impacts on agriculture and health, energy alternatives	yes	3,4,7,8 9	45 min.
Erik Frye, Maui Tropical Farmer's Assoc. V.P.	Agriculture & air	air impacts on farming & related issues	yes	3,4,9	30 min.
Steven Moser MD, physician	air quality & health	air quality health impacts & related issues	yes		45 min.

EXHIBIT C

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Exhibit D

EXHIBIT NO.	DESCRIPTION	PARTY:OBJECTIONS	ADMIT
1.	MAUI COUNTY GENERAL PLAN, SECTION 4D, PGS 12, 13		
2.	REGIONAL ENERGY INITIATIVES-NA MAKANI ENERGY INITIATIVE PROJECT REPORT, PHASE 1		
3.	CUSTOMER-SITED PHOTOVOLTAICS-FOCUSING ON MARKETS- FOCUSING ON MARKETS THAT REALLY SHINE: a STUDY HIGHLIGHTING THE BEST MARKETS IN THE UNITED STATES FOR GRID-CONNECTED PHOTOVOLTAIC SYSTEMS, NATIOANL RENEWABLE ENERGY LABORATORY		
4.	"NEGAWATTS: TWELVE TRANSITIONS, EIGHT IMPROVEMENTS, AND ONE DISTRACTION" BY ROCKY MOUNTAIN INSTITUTE IN ENERGY POLICY,1996		
5.	"RENEWABLES IN INTEGRATED ENERGY SYSTEMS" ROCKY MOUNTAIN INSTITUTE		
6.	PACIFIC MONITOR ARTICLES,		
6A.	11-12-95 "FIRST IN A SERIES-WHO WILL POWER ..."		
6B.	12-4-95 "SECOND IN A SERIES"		
6C.	12-11-95 "THIRD IN A SERIES"		
6D.	12-18-95 "FOURTH IN A SERIES"		
6E.	5-27-96 "WHY IS MAUI SO EXPENSIVE TO POWER?"		
6F.	7-22-96 "DOES MECO PROTEST JUST A BIT TOO MUCH?"		
7.	AGRICULTURAL MAP OF MAUI COUNTY		
8.	HONOLULU ADVERTISER ARTICLE		
9.	HAWAI'I ORGANIC FARMER'S ASSOCIATION LETTER		
10.	HOFA LETTER FROM ROY SMITH		
11.	BYLAWS OF MAUI TOMORROW		

EXHIBIT D

EXHIBIT NO.	DESCRIPTION	PARTY:OBJECTIONS	ADMIT
12.	EFFECTED COMMUNITY MEMBERS ON THE MAUI TOMORROW ROSTER		
13.	RESUME FOR DICK MAYER		
14.	RESUME FOR IAN CHAN-HODGES		
15.	RESUME FOR JIM WILLIAMSON		
16.	RESUME FOR MARC DREHSEN		
17.	RESUME FOR ROY SMITH		
18.	RESUME FOR ERIK FRYE		
19.	RESUME FOR STEVE MOSER,MD		
20.	MINUTES OF DEC,15 1997 MAUI TOMORROW BOARD MEETING		
21.	MAUI TOMORROW ARTICLES OF INCORPORATION		

BEFORE THE LAND USE COMMISSION

STATE OF HAWAII

In the Matter of the Petition of	)	DOCKET NO. A97-722
	)	
MAUI ELECTRIC COMPANY, LIMITED, a Hawaii corporation,	)	NOTICE OF NON-HEARING MOTION and 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	)	

NOTICE OF NON-HEARING MOTION

TO: J.P. SCHMIDT
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MARK SHEEHAN, Representing Intervenor
President, Maui Tomorrow
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NOTICE IS HEREBY GIVEN that the undersigned has filed the Motion attached hereto with the above-entitled Land Use Commission.

Pursuant to Section 15-15-70 (e) of the Land Use Commission Rules, the opposing party or parties shall serve and file counter affidavits and memoranda in opposition to this Motion no later than seven (7) days after the date of service, unless otherwise ordered by the chairperson, chairperson's designee or hearings officer

DATED: Honolulu, Hawaii, March 25, 1998.

B. MARTIN LUNA
ALLEN R. WOLFF

Attorneys for MAUI ELECTRIC COMPANY, LIMITED

CERTIFICATE OF SERVICE

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

DATED: Honolulu, Hawaii, March 25, 1998.

B. MARTIN LUNA
ALLEN R. WOLFF

Attorneys for MAUI ELECTRIC COMPANY, LIMITED