

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF HAWAII**

PUBLIC UTILITIES  
COMMISSION

2006 OCT 10 A 11:09

FILED

---- In the Matter of ----

PUBLIC UTILITIES COMMISSION

DOCKET NO. 05-0069

HAWAIIAN ELECTRIC COMPANY, INC.  
For Approval and/or Modification of Demand-  
Side and Load Management Programs and  
Recovery of Program Costs and DSM Utility  
Incentives

**HAWAII RENEWABLE ENERGY ALLIANCE'S SUPPLEMENTAL RESPONSE TO  
POST-HEARING INFORMATION REQUESTS FROM LIFE OF THE LAND,  
HECO/MECO/HELCO, AND THE CONSUMER ADVOCATE  
ON HREA HEARING EXHIBIT NO. 2  
EXHIBITS A-D AND CERTIFICATE OF SERVICE**

Warren S. Bollmeier II, President  
HREA  
46-040 Konane Place #3816  
Kaneohe HI 96744

(808) 247-7753

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF HAWAII**

---- In the Matter of ----

PUBLIC UTILITIES COMMISSION

HAWAIIAN ELECTRIC COMPANY, INC.  
For Approval and/or Modification of Demand-  
Side and Load Management Programs and  
Recovery of Program Costs and DSM Utility  
Incentives

DOCKET NO. 05-0069

**HAWAII RENEWABLE ENERGY ALLIANCE'S SUPPLEMENTAL RESPONSE TO  
POST-HEARING INFORMATION REQUESTS FROM LIFE OF THE LAND,  
HECO/MECO/HELCO, AND THE CONSUMER ADVOCATE  
ON HREA HEARING EXHIBIT NO. 2**

The Hawaii Renewable Energy Alliance ("HREA") hereby provides its supplemental response to the Information Requests ("IRs") submitted in the above-captioned matter ("Supplemental Response") as follows.

**I. INTRODUCTION**

On September 22, 2006, HREA filed its Response to Post-Hearing Information Requests from Life of the Land, HECO/MECO/HELCO (collectively, "HECO"), and the Consumer Advocate ("CA") on HREA Hearing Exhibit No. 2 ("HREA Response"). The HREA Response states that HREA intends to submit certain Confidential Information in response to certain IRs upon Commission approval of a protective order in this matter. The Commission approved Protective Order No. 22929, Stipulation for Protective Order and Exhibit A, on October 6, 2006 ("Protective Order").

**II. COMPLIANCE WITH PROTECTIVE ORDER**

Paragraph 5 of the Protective Order requires a party/participant seeking to designate information as confidential to (1) identify, in reasonable detail, the information's source,

character, and location, (2) state clearly the basis for the claim of confidentiality, and (3) describe, with particularity, the cognizable harm to the producing party/participant from any misuse or unpermitted disclosure of the information.

HREA hereby designates certain data and spreadsheets in the attached Exhibits A-D as confidential. These exhibits are attached to this Supplemental Response in a separate envelope marked "CONFIDENTIAL – SUBJECT TO PROTECTIVE ORDER" and each page that contains confidential information is marked in the same manner. Electronic files of the complete spreadsheets are provided on the enclosed CD labeled "HREA Supp. Response Exhibits A-D, CONFIDENTIAL – SUBJECT TO PROTECTIVE ORDER." These electronic files include up to 30 pages of material each. As a convenience, summaries are also provided in hard copy format totaling 13 pages.

The source of the confidential spreadsheet data is Honolulu Seawater Air Conditioning, LLC ("HSWAC"). HSWAC is a member of HREA, a party to this proceeding, and therefore HSWAC and HREA have unity of interests with regard to designation of this information as confidential. The spreadsheets and data have been compiled wholly or partly in response to the HECO and CA IRs. The basis for the claim of confidentiality is that HSWAC has a proprietary interest in the data insofar as it consists of confidential scientific, technical, and economic data and information that has been generated, analyzed, or compiled by or on behalf of HSWAC for proprietary business purposes. The potential harm to HSWAC from any misuse or unpermitted disclosure of this confidential information lies in harm to HSWAC's scientific, technical and economic interests, including harm to HSWAC's current and prospective business operations.

### **III. HREA'S SUPPLEMENTAL RESPONSE TO HECO IRs**

HREA restates and reasserts the General Objections set forth in the HREA Response. Notwithstanding these objections, HREA hereby supplements its responses to the HECO IRs as follows:

**HECO/HREA-IR-101**

It is assumed that the base case (prior to the installation of SWAC) is derived from an assumed portfolio of buildings and building types. Please provide a detailed matrix documenting these assumptions for the existing base case, including:

- a. Peak air conditioning load by building type in the portfolio.
- b. Air conditioning plant efficiency (kW/ton):
  - i. Total system efficiency.
  - ii. Efficiency of chiller and heat rejection system only.
- c. Age of existing chiller system (0-10; 10-20; 20+ yrs), (i.e., 50% - 0-10; 30% - 10-20, 20% - 20+ YS).
- d. Type of system (air cooled or water cooled).
- e. Average annual ton-hours assumed for each building type.
- f. Weighting of each building type in portfolio.
- g. The TRC test includes input for cost of replacement. Given SWAC has 50 year life, a base case assumption for replacement every 20 years is required. What assumptions were made for replacement cost for chiller systems?
- h. What maintenance costs assumptions were made to account for customer reductions in equipment usage, e.g., chiller and cooling tower maintenance.

**HREA's Supplemental Response:**

\* \* \*

**g. The TRC test includes input for cost of replacement. Given SWAC has 50 year life, a base case assumption for replacement every 20 years is required. What assumptions were made for replacement cost for chiller systems?**

**HREA's Supplemental Response:**

See Confidential Information attached as Exhibits A-D to this Supplemental Response.

**h. What maintenance costs assumptions were made to account for customer reductions in equipment usage, e.g., chiller and cooling tower maintenance.**

**HREA's Supplemental Response:**

See Confidential Information attached as Exhibits A-D to this Supplemental Response.

\* \* \*

**HECO/HREA-IR-104**

Ref: "Seawater Air Conditioning Value Analysis", pg. 15, provided to the parties via email on August 30, 2006. Please provide derivation of "Specific Energy Use" for Seawater Air Conditioning System.

**HREA's Supplemental Response:**

See Confidential Information attached as Exhibits A-D to this Supplemental Response.

**HECO/HREA-IR-105**

**What are the installed cost, customer hook-up cost assumptions associated with each building type noted in the customer portfolio matrix.**

**HREA's Supplemental Response:**

See Confidential Information attached as Exhibits A-D to this Supplemental Response.

**HECO/HREA-IR-106**

**Please provided the cost assumptions associated with rights of way, easements, and other property rights associated with the distribution system?**

**HREA's Supplemental Response:**

See Confidential Information attached as Exhibits A-D to this Supplemental Response.

**HECO/HREA-IR-107**

**Please provide the electrical demand load profile of the central plant by hour on:**

- a. A peak day, with 10,000 tons connected load.
- b. An average annual day, with 10,000 tons connected load.
- c. A peak day, with 20,000 tons connected load.
- d. An average annual day, with 20,000 tons connected load.

**HREA's Supplemental Response:**

See Confidential Information attached as Exhibits A-D to this Supplemental Response.

**HECO/HREA-IR-108**

**Please provide system efficiency curve that shows SWAC system efficiency as it varies by Time of Day, at several points along the total load curve, e.g., at 20%, 40%, 60%, 80% of the total connected load.**

**HREA's Supplemental Response:**

See Confidential Information attached as Exhibits A-D to this Supplemental Response.

**HECO/HREA-IR-109**

**Please provide estimated cost of central plant, including deep water loop, annual operation and maintenance, depreciation assumptions and any tax credit assumptions.**

**HREA's Supplemental Response:**

See Confidential Information attached as Exhibits A-D to this Supplemental Response.

\* \* \*

**HECO/HREA-IR-112**

The TRC test includes input for cost of maintenance. What are costs associated with maintenance of the:

- a. Central plant and deep sea loop.
- b. Distribution system.

**HREA's Supplemental Response:**

See Confidential Information attached as Exhibits A-D to this Supplemental Response.

**HECO/HREA-IR-113**

Please provide cost of installation of distribution system up to the interconnection point, including cost of providing power to the distribution pumps.

**HREA's Supplemental Response:**

See Confidential Information attached as Exhibits A-D to this Supplemental Response.

\* \* \*

**HECO/HREA-IR-116**

Please provide the payback from a customer's perspective:

- a. Without any utility rebate.
- b. With the existing CICR rebate of \$125 per peak kW reduced plus \$0.05 per kWh of energy savings for the first year of the customers operation.
- c. HREA's proposed rebate.

**HREA's Supplemental Response:**

See Confidential Information attached as Exhibits A-D to this Supplemental Response.

\* \* \*

**HECO/HREA-IR-118**

Please describe project status on the following items:

- a. Land acquisition, or site development agreement.
- b. Rights of way agreements for chilled water distribution piping.
- c. Service agreements with facility and buildings management.

## **HREA's Supplemental Response**

See Confidential Information attached as Exhibits A-D to this Supplemental Response.

### **IV. HREA'S RESPONSE TO THE CA'S IRs**

HREA restates and reasserts the General Objections set forth in the HREA Response.

Notwithstanding these objections, HREA hereby supplements its responses to the CA IRs as follows:

#### **CA/SWAC-IR-5**

**For each potential building who could be a customer for the central plant's chilled water, please provide the type of equipment that would be needed to be installed in order to receive and utilize chilled water from the central chilled water plant to provide air conditioning. Provide the estimated cost to procure, install, operate, and maintain this equipment. Also, please specify the location within each building where this new equipment would be installed, and indicate whether the existing air conditioning equipment would need to be replaced or whether it could be retained and operated in parallel with the new cooling equipment.**

#### **HREA's Supplemental Response:**

See Confidential Information attached as Exhibits A-D to this Supplemental Response.

#### **CA/SWAC-IR-6**

**For each potential building who could be a customer for the central plant's chilled water, please provide a description of the chilled water distribution system that must be installed to deliver chilled water from the central chiller plant to each building. Would each building have both a supply line and a return line? What size pipes would be necessary? Please provide an estimate of the costs to procure, install, operate, and maintain this system**

#### **HREA's Supplemental Response:**

See Confidential Information attached as Exhibits A-D to this Supplemental Response.

\* \* \*

#### **CA/SWAC-IR-9**

**Please provide a detailed calculation of the peak hour and annual cost of producing each building's air conditioning utilizing each building's existing equipment. Include the quantity and cost of potable water consumed or sewage disposed of. Provide all workpapers and calculations**

#### **HREA's Supplemental Response:**

See Confidential Information attached as Exhibits A-D to this Supplemental Response.

**CA/SWAC-IR-10**

**Please provide a detailed calculation of the peak hour and annual cost of producing all of the buildings' air conditioning needs utilizing chilled water from the central plant. Include the quantity and cost of potable water consumed or sewage disposed of. Provide all workpapers and calculations**

**HREA's Supplemental Response:**

See Confidential Information attached as Exhibits A-D to this Supplemental Response.

\* \* \*

DATED: Honolulu, Hawaii, October 10, 2006.

A handwritten signature in black ink, appearing to read "Warren S. Bollmeier II", written over a horizontal line.

Warren S. Bollmeier II  
President, HREA

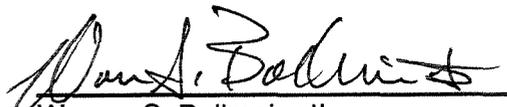
CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon the following parties and participants by either hand-delivery or by placing copies of same in the U.S. Mail, postage prepaid, addressed as follows:

| Party  |          | Party  |          |
|--|----------|--|----------|
| DIVISION OF CONSUMER<br>ADVOCACY<br>335 Merchant ST RM 326<br>Honolulu, HI 96813   | 3 copies | STEVEN P. GOLDEN<br>The Gas Company<br>P.O. Box 3000<br>Honolulu, HI 96802-3000  | 1 copy   |
| WILLIAM A. BONNET, Vice President<br>Hawaiian Electric Company, Inc.<br>Hawaii Electric Light Company, Inc.<br>Maui Electric Company, Limited<br>P. O. Box 2750<br>Honolulu, Hawaii 96840-0001 | 1 copy   | GEORGE T. AOKI, ESQ<br>The Gas Company<br>P.O. Box 3000<br>Honolulu, HI 96802-3000   | 1 copy   |
| DEAN MATSUURA<br>Hawaiian Electric Company, Inc.<br>P. O. Box 2750<br>Honolulu, Hawaii 96840-0001  | 1 copy   | RANDALL Y.K. YOUNG, ESQ.<br>Naval Facilities Engr. Command Pacific<br>258 Makalapa DR, STE 100<br>Pearl Harbor, HI 96860-3134                  | 1 copy   |
| THOMAS W. WILLIAMS, JR. ESQ.<br>PETER Y. KIKUTA, ESQ.<br>Goodsill, Anderson, Quinn & Stifel<br>Alii Place, STE 1800<br>1099 Alakea Street<br>Honolulu, Hawaii 96813                            | 1 copy   | DR. KAY DAVOODI<br>EFACHES<br>1322 Patterson AVE, SE<br>Building 33, FLR 3<br>P. O. Box 3000<br>Washington, DC 20374                           | 1 copy   |
| H.A. DUTCH ACHENBACH<br>JOSEPH McCAWLEY<br>MICHAEL YAMANE<br>Kauai Island Utility Cooperative<br>4463 Pahe'e Street<br>Lihue, Hawaii 96766   | 1 copy   | CINDY Y. YOUNG, DEPUTY<br>CORPORATION COUNSEL<br>County of Maui<br>Dept. of the Corporation Counsel<br>200 S. High Street<br>Wailuku, HI 96793 | 1 copy   |
| KENT D. MORIHARA, ESQ.<br>MICHAEL H. LAU, ESQ.<br>841 Bishop Street, Suite 400<br>Honolulu, Hawaii 96813   | 2 copies | KALVIN K. KOBAYASHI, ENERGY<br>COORDINATOR<br>County of Maui<br>Department of Management<br>200 S. High ST<br>Wailuku, HI 96793                | 1 copy   |
| JIM R. YATES, President<br>The Gas Company<br>P.O. Box 3000<br>Honolulu, HI 96802-3000   | 1 copy   | BRIAN T. MOTO, CORPORATION<br>COUNSEL<br>County of Maui<br>Dept. of the Corporation Counsel<br>200 S. High Street<br>Wailuku, HI 96793         | 2 copies |

| Party   |          | Party   |          |
|---|----------|---|----------|
| LANI D. H. NAKAZAWA, ESQ.<br>Office of the County Attorney<br>County of Kauai<br>4444 Rice Street, Suite 220<br>Lihue, HI 96766             | 2 copies | HENRY Q CURTIS<br>Vice President for Consumer Issues<br>Life of the Land<br>76 North King ST, STE 203<br>Honolulu, HI 96817 | 3 copies |
| GLENN SATO, ENERGY<br>COORDINATOR<br>c/o Office of the County Attorney<br>County of Kauai<br>4444 Rice Street, Suite 220<br>Lihue, HI 96766 | 1 copy   | RICK REED<br>Inter Island Solar Supply<br>761 Ahua Street<br>Honolulu, HI 96819   | 1 copy   |
| E. KYLE DATTA<br>Rocky Mountain Institute<br>P. O. Box 390303<br>Keauhou, HI 96769  | 1 copy   | JOHN CROUCH<br>Box 38-4276<br>Waikoloa, HI 96738  | 1 copy   |
| CARL FREEDMAN<br>Haiku Design & Analysis<br>4234 Hana HWY<br>Haiku, HI 96708  | 1 copy   |   |          |

DATED: Honolulu, Hawaii, October 10, 2006.

  
 Warren S. Bollmeier II  
 President, HREA