

ORIGINAL

COM-T-1

Before the Hawaii Public Utilities Commission

**Direct Testimony of
Kalvin Kobayashi, Energy Coordinator**

**On Behalf of
County of Maui**

Docket No. 03-0371

PUBLIC UTILITIES
COMMISSION

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I. INTRODUCTION

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Q. What is your name and business address?

A. My name is Calvin Kobayashi and my business address is: Department of Management, Energy Office, 200 S. High Street, Wailuku, Hawaii, 96793.

Q. What is your relevant education and background?

A. I graduated from the University of Hawaii in 1979 with a Bachelors Degree in Business Administration. From 1982 to 1984, I managed the operations of two photographic processing labs. From 1984 to 1988, I was a planner for the County of Maui.

Q. What is your present position and what are your duties and responsibilities?

A. I am the Energy Coordinator for the County of Maui and I have held this position since 1988. I manage the County of Maui Energy Office and my responsibilities include managing energy programs, making policy recommendations, serving on governmental committees and advisory groups, serving on electric and gas utility integrated resource planning advisory groups, managing energy projects, coordinating energy workshops and conferences, making public speeches and presentations, participating on private sector committees, evaluating energy technologies, and serving as the energy emergency manager. Generally, I am involved in most matters

1 relating to energy for the County of Maui.

2

3 Q. Has the County of Maui authorized you to testify in this proceeding?

4 A. Yes, I have been authorized by my immediate supervisor, Mr. Kenneth Taira, Acting
5 Managing Director.

6

7 Q. Have you testified before the Hawaii Public Utilities Commission (“Commission”)?

8 A. Yes. I testified before the Commission in Docket No. Docket No. 6617, Instituting
9 a Proceeding to Require Energy Utilities in Hawaii to Implement Integrated Resource
10 Planning, on behalf of the County of Maui, the County of Hawaii, and the County of
11 Kauai. Also, in conjunction with Docket No. 96-0493, Instituting a Proceeding on
12 Electric Competition, Including an Investigation of the Electric Utility Infrastructure
13 in the State of Hawaii, I gave a presentation to the Commission on distributed
14 generation and distributed energy resources at an informational workshop arranged
15 by the Commission.

16

17 Q. Can you summarize your testimony?

18 A. I will present the County of Maui’s Statement of Position in section II, followed by
19 testimony in support of the Statement of Position. In section III, I will summarize the
20 testimony of Mr. Jim Lazar, our expert witness, in the context of the Commission’s
21 Statement of Issues in Prehearing Order No. 20922. I will conclude my testimony

1 in section IV. with summaries of the County of Maui's past positions and
2 recommendations relating to distributed generation, made in previous Commission
3 proceedings.

4
5 **II. STATEMENT OF POSITION**

6
7 Q. What is the County of Maui's statement of position?

8 A. The Statement of Position by the County of Maui is stated below.

9
10 **Introduction**

11 The positions and recommendations in this Statement of Position are consistent with,
12 and an evolution of, past positions made by the County of Maui ("COM") to the
13 Hawaii Public Utilities Commission ("Commission"). The COM has provided
14 positions and recommendations relating to distributed generation ("DG") and DG-
15 related matters in five preceding Commission dockets.¹ Our past positions and
16 recommendations related to the issues of: DG ownership, revisions to rates and fees,
17 the Integrated Resource Planning ("IRP") process, and DG demonstration programs.
18 In this statement, the COM will recommend follow-up actions to create a fair and
19 competitive DG marketplace and to accommodate a transition toward an electric grid
20 system with increasingly more customers generating their own power.

¹ See section IV of this testimony.

1 **What is Distributed Generation or DG?**

2 Distributed generation is generally referred to as the production of energy at or near
3 the point of use. DG is also known as decentralized energy and micropower.
4 Examples of DG in Maui County include the sugar company's biomass cogeneration
5 and hydroelectric systems; the pineapple company's diesel generation system;
6 propane, diesel and biodiesel fueled back-up generators; off-grid and/or grid
7 interconnected photovoltaic, wind, and micro-hydroelectric systems; and large
8 commercial combined heat and power ("CHP") systems.

9
10 **What are Distributed Energy Resources or DER?**

11 Distributed generation and other consumer energy products and services; such as
12 energy efficient products and services (i.e., compact fluorescent light bulbs, variable
13 speed motors, and light sensors) and load management services (i.e., ice storage, hot
14 water storage, and batteries) constitute what is commonly known as distributed
15 energy resources ("DER"). In docket no. 96-0493, relating to electric competition,
16 the COM referred to DER as retail energy services. In a broad context, DER can also
17 be referred to as demand-side management ("DSM") resources.

18
19 Studies of Vehicle-to-Grid² ("V2G") concepts indicate that it may become viable to
20 use vehicles to power the grid and consumer loads. Vehicles under consideration

² See http://www.acpropulsion.com/Veh_Grid_Power/V2G-Cal-2001.pdf.

1 include hybrid vehicles, plug-in hybrid vehicles³ (hybrid vehicles with enlarged
2 batteries and grid charging/discharging capabilities), fuel cell vehicles, and battery-
3 only vehicles. In the future, if plug-in hybrid vehicles become popular, significant
4 amounts grid-connected generation could come from mobile V2G DG.

5
6 Powerline communication⁴ (“PLC”) technologies are emerging technologies that
7 enable consumer appliances and equipment to communicate over building and grid
8 power lines. In the future, PLC appliances like air conditioners, water heaters, and
9 freezers could become “intelligent” DSM resources, interacting with consumers via
10 their personal computers and the electric utility via the grid.

11 12 **What is a Distributed Utility?**

13 Distributed energy resources are beginning to transition our central generation grid
14 structure into an integrated and interactive central and distributed generation grid
15 structure, originally referred to in the 1970's as a distributed utility. Today, a
16 distributed utility is referred to in several ways, including the “Energy Internet,” the
17 “Energy Web,” the “Intergrid,” and the “Virtual Grid.”

18 19 **The Benefits of DG and DER**

³ See <http://calcars.org/vehicles.html>.

⁴ See PLC Primer at <http://www.lonestarbroadband.org/technology/powerlines.htm>.

1 The COM supports the development of DG and other DER because:

- 2 • DG and DER further the objective of the COM General Plan to “make Maui
3 County more self-sufficient in its need for non-renewable energy and more
4 efficient in its use of energy.”
- 5 • DG and DER further the policy of the COM General Plan to ‘(m)aintain a
6 proper state of preparedness for man-made or natural disasters.”
- 7 • DG and DER can mitigate or eliminate the need for power lines along public
8 rights-of-way and through scenic vistas.
- 9 • DG and DER can mitigate or eliminate the need for costly new power plants.
- 10 • DG and DER can save the COM and other consumers money, more so than
11 from central generation options.
- 12 • DG and DER can provide more and better energy service to consumer than
13 from central generation options.

14

15 **The County of Maui’s Interests in DG**

16 **Consumer Interests:** New and emerging DG products and services, such as large
17 commercial-sector CHP systems, can provide the COM energy savings and improved
18 energy services.

19 **Emergency Management Interests:** DG provides vital back-up energy services and
20 improving the reliability of existing back-up generation resources can enhance
21 private and public energy security.

1 **Economic Development Interests:** Fair market competition for the DG industry is
2 important for attracting DG companies to conduct business in COM. New DG
3 companies will help to diversify COM's economy.

4 The development of renewable and energy efficient DG can also improve the COM's
5 balance of trade.

6 **Franchise Interests:** DG can mitigate or eliminate the need for new power lines
7 along COM roadways and through scenic areas, as is the case with MECO's DG
8 system in Hana.

9 **Community Planning and Zoning Interests:** DG has the potential to eliminate the
10 need to build new central station power plants on the island of Maui and this
11 potential may already be viable for the islands of Lanai and Molokai.

12 **Environmental Interests:** The development of renewable energy DG and energy
13 efficient DG support the COM's objectives to protect our ecological resources.

14 **Building Code Interests:** Emerging residential scale DG products could involve the
15 COM in interconnection matters through our building and electrical code processes.

16
17 **Authority to Grant MECO the Ability to Own and Operate**
18 **Non-monopoly, Privately Used DG and DER**

19 This is the County of Maui's threshold issue. This threshold issue is important
20 because it will set a precedent not only for CHP and other DG, but also for other
21 distributed energy resources (i.e., energy efficiency/DSM). The COM's position is
22 that MECO cannot own and operate consumers' DG/DER because MECO is not
23

1 authorized to do so under its franchise and statutory authorizations.

2
3 **Franchises:** MECO was granted franchises⁵ to own and operate power grid systems
4 (centrally generated electricity delivered over power lines) because power grid
5 systems were generally considered natural monopoly enterprises. However, the
6 ownership and operation of consumer DG and other DER are competitively viable
7 and are not natural monopoly enterprises. Accordingly, the ownership and operation
8 of consumer DG and DER appear inconsistent with MECO's franchises. Therefore,
9 it is the COM's position that MECO's franchises would need to be amended to
10 authorize MECO to own and operate consumer DG and/or other DER, before MECO
11 can seek the Commission's approval of its suspended CHP program and tariff
12 request, Docket No. 03-0366, or any other consumer DG and/or DER program and
13 tariff request. MECO has not applied for such an amendment. We recommend that
14 the Commission affirm this position.

15
16 **State Statutes:** The ownership and operation of consumer DG and DER for private
17 use does not appear to be public utility activity, as defined by Hawaii Revised
18 Statutes ("HRS") Chapter 269-1. This is appropriate because if it is considered a
19 public utility activity, then all energy companies owning and operating consumer DG

⁵ Act 12, Session Laws of Hawaii, 1991, MECO franchise for the island of Maui; Act 147, SLH, 1989, MECO franchise for the island of Molokai; Act 54, 1988, MECO franchise for the island of Lanai.

1 and DER for private use would be considered public utilities and their activities
2 would need to be regulated by the Commission. Accordingly, MECO does not
3 appear to have statutory authority to own and operate consumer DG and DER for
4 private use. Therefore, it is the COM's position that HRS Chapter 269 would need
5 to be amended to authorize public utilities to engage in the ownership and operation
6 of privately used consumer energy products and services, before MECO can seek the
7 Commission's approval of its suspended CHP program and tariff request, Docket No.
8 03-0366, or any other program and tariff request involving the ownership and
9 operation of privately used DG and/or DER. We recommend that the Commission
10 affirm this position.

11 **Recommendations and Positions on Fair Market Competition**

12 The COM supports fair market competition for DG because we feel that fair market
13 competition is the best approach for determining the optimal type and amount of DG
14 in Hawaii's various energy market sectors. Fair market competition is achieved by
15 preventing market power abuses, by sending proper market price signals to
16 consumers, by allowing DG to compete equally against electric utility central
17 generation and transmission and distribution ("T&D") markets, and by establishing
18 reasonable interconnection procedures and standards.
19

20
21 **Preventing Market Power:** Testimony by Mr. Lazar describes the "discriminating

1 monopoly” problems that could arise if electric utility companies or their affiliate
2 companies are allowed to compete in DG markets. DG market power abuses have
3 been suggested in Hawaii by the former intervenors in this proceeding, Pacific
4 Machinery and Johnson Controls, along with Noresco in their letter of concern to the
5 Commission dated July 1, 2003.

6
7 Additionally, an alleged case of market power was documented by the National
8 Renewable Energy Laboratory (“NREL”) in their study, “Making Connections: Case
9 Studies of Interconnection Barriers and their Impact on Distributed Power Projects.”⁶

10 This case study was not reported by Pacific Machinery, Johnson Controls, or
11 Noresco. This case study is anonymously identified in the publication as Case #14--
12 120-kW Propane Gas Reciprocating Engine for Base Load Service at Hospital. The
13 actual facility was not a hospital, but the identity of the facility was changed to help
14 protect the identity of the implicated electric utility company. Case #14 describes the
15 technical, regulatory, and business practice barriers reported at the case study site.

16
17 We feel that it is better to prevent market power abuses than it is to mitigate them
18 though resource-intensive regulatory oversight. Therefore, the COM recommends
19 that MECO should not be allowed to own and operate DG and other DER, except for
20 grid back-up generation systems. We maintain this long standing position for the

⁶ See <http://www.nrel.gov/docs/fy00osti/28053.pdf>.

1 following reasons:

- 2 • MECO's franchises do not allow for the ownership and operations of
- 3 consumer DG and other consumer energy products and services,
- 4 • State statutes do not authorize public utilities to provide consumer energy
- 5 products and services for private use,
- 6 • To prevent MECO from operating as a "discriminating monopolist," the
- 7 worst possible form of enterprise, and
- 8 • To prevent market power abuses.

9

10 **Sending Proper Market Price Signals:** Hook-up fees (i.e., generation impact fees)

11 or the lack thereof, standby rates, rate designs, and wheeling rates or the lack thereof,

12 affect the cost effectiveness of consumer DG and DER. The following are our

13 recommendations on reforms that need to be made to send the proper market price

14 signals to consumers, relative to DG and DER.

15

16 Hookup Fees and Credits: Electrical service to new customers is subsidized by

17 existing customers because new power plants are much more expensive than existing

18 units that form the basis of rates. Since DG has no comparable subsidy from electric

19 utilities, DG is at a competitive disadvantage to conventional electric utility services.

20 Additionally, since new electric facilities cost more than existing facilities, electric

21 rates rise as new customers are added to the grid system. Therefore, we recommend

1 that hook-up subsidies be discontinued. We feel that discontinuing impact fee
2 subsidies will result in new developments that are more energy efficient and more
3 likely to incorporate DG. Existing electric utility customers will see significantly less
4 rate increases and the new electric utility customers will experience lower operating
5 costs and long term savings.

6
7 Standby Rates: Appropriately priced standby rates are important for creating a level
8 playing field between DG and conventional electric utility services. Since MECO
9 does not have standby rates for its DG customers, the COM recommends firm and
10 “best efforts” standby rates. We feel that our recommended standby rates
11 appropriately address differing consumer needs and that they are reasonable for both
12 the electric utility and its DG customers.

13
14 Rate Designs: Rate designs have an important impact on consumer usage patterns
15 and on consumer investment decisions for DG and DER. For example, if residential
16 customers had an inverted block rate design (i.e., the more you use the more you
17 incrementally pay), as is the practice with the COM’s water rates, then residential
18 customers would be financially encouraged to reduce excessive consumption and
19 incentivized to invest in DG and DER. Therefore, the COM recommends that the
20 Commission establish incremental cost pricing rate designs for residential and
21 commercial electric utility customers, and eliminate the current declining block rate

1 for schedules J and P in favor of time of use rates.

2
3 Contract Requirements for Large Customers: In order to provide reasonable
4 assurance to MECO that a will customer remain on the system long enough to
5 amortize MECO's customer-specific investments and prevent the risk of stranded
6 generation and transmission resources, we recommend that multi-year contracts be
7 made with large customers to provide advance notice requirements when significant
8 changes in demand are expected.

9
10 County Wheeling: The establishment of reasonable wheeling rates for the COM
11 would facilitate county investments in renewable and energy efficient DG systems.
12 County wheeling would allow the COM to optimize the development of DG to save
13 taxpayers money and to improve taxpayer services. Multi-year contracts with
14 renewal clauses could be executed to protect MECO and its ratepayers. Accordingly,
15 we recommend that wheeling rates be established for the county agencies.

16
17 Performance Based Ratemaking ("PBR"): The growth of DG would move MECO
18 away from its role as a monopoly provider of electricity service. Also, our proposal
19 to establish impact fees would reduce the growth of MECO's rate base. Therefore,
20 we recommend that performance based ratemaking be considered. PBR would allow
21 MECO to earn a fair return in an evolving distributed utility paradigm and allow

1 MECO to fairly compete against competitive DG/DER alternatives.

2
3 Recommendation for above rates and fees: In order to address all of the COM's
4 recommendations relating to rates and fees, the COM recommends that the
5 Commission open a generic rulemaking proceeding to address all of the rates and
6 fees issues recommended by all of the parties. One generic proceeding for all electric
7 utilities would facilitate the Commission's review of all rates and fees proposals in
8 an expedient manner. We feel that this is a better approach than addressing rates and
9 fees issues in individual electric utility rate case proceedings.

10
11 **Integrated Resource Planning:** A level playing field for DG against conventional
12 grid delivered electricity can be supported by properly including DG in the electric
13 utility IRP process. The COM maintains its past position relating to this issue, as
14 follows:

- 15 • DSM programs should be established for DG products and services.
16 MECO's successful solar water heating DSM program is a good example of
17 how MECO could facilitate the consumer DG market by providing accurate
18 product information, providing appropriate monetary incentives, providing
19 quality assurance programs, and providing marketing support to DG vendors.
- 20 • Transmission and distribution system planning should be integrated into the
21 IRP process and T&D system upgrades should consider all viable DG

1 options.

2 • DG market penetration estimates should be included in forecasting efforts.

3

4 The IRP process also needs to be revised to address issues relating to DSM and
5 competitive bidding for new supply resources. Therefore, the County of Maui
6 recommends that the Commission open a rulemaking proceeding to conduct a
7 comprehensive review of the IRP process and to establish rules that address DG,
8 DSM, and competitive bidding.

9

10 **DG Interconnection Standards:** The COM recommends the adoption of reasonable
11 interconnection standards and procedures of DG systems by the Commission. We
12 also recognize that we may have a role in establishing and enforcing interconnection
13 standards in the future, especially with regard to small consumer energy appliances.
14 For example, residential water heaters and air conditioners may someday be micro-
15 CHP (“mCHP”) units that produce electricity as a by-product of producing hot water
16 and/or air conditioning. Interconnection for these mCHP and other “plug-and-play”
17 energy appliances could be in the form of upgraded building codes, with inspection
18 being done by county building inspectors. The COM will continue to monitor
19 activities in this area and will work with the Commission and all concerned parties
20 if this option materializes.

21

1 **Recommendation for a DG Demonstration Project**

2 Virtual Power Plants (“VPP”) are generally considered to be a network of DG
3 systems, integrated together with computer monitoring and control equipment, to
4 allow a system operator to dispatch some or all of the networked DG systems as
5 though they were one or more central generation power plants.

6
7 Existing back-up generators are valuable and under-utilized DG resources, although
8 some may be old, undersized, and/or under-maintained. In order to optimize the
9 value of back-up generators and to improve the maintenance and capacities of back-
10 up generators, the COM recommends that the Commission direct MECO to modify
11 its planned Capacity Buy-back (“CBB”) program into an expanded virtual power
12 plant program. The COM recommends that the VPP program consist of a network
13 of large commercial back-up generators and the distributed back-up generators
14 owned by Maui Electric Company (“MECO”) in Hana. These networked back-up
15 generators would be dispatched by MECO to provide reserve capacity to MECO
16 during emergencies. MECO would also dispatch the VPP generators regularly to
17 exercise them and improve network reliability. This could be done during utility
18 system peak periods to increase benefits to the electric utility.

19
20 In concept, our recommended VPP is similar to MECO’s planned CBB DSM
21 program, except for two significant differences. First, customer back-up generators

1 are used in the VPP, instead of customer interruptible loads in the CBB program.
2 Second, MECO would manage the operations of the VPP, instead of the customer in
3 the CBB program. An added benefit of the VPP program is that the reliability, and
4 in some instances the capacity, of the customer's back-up generators would be
5 improved. MECO would oversee the maintenance of the units and upgrade or
6 replace the units if needed. The COM recommends that MECO should be allowed
7 to own and operate customer-sited DG systems for grid reserve capacity purposes
8 only, such as in the case of the VPP program demonstration, and in emergency
9 situations where the temporary deployment of DG could restore reliability and ensure
10 safe operation of the grid system. Our position is that MECO can conduct this
11 activity under its franchises because the provision of grid reserve capacity is
12 considered a monopoly activity that is consistent with MECO's franchise. Also, our
13 position is that MECO can conduct this activity as a public utility because the VPP
14 generators are providing electric services to the public.

16 **Conclusion**

17 The declining costs of DG/DER and the inclining costs of central generation and
18 T&D systems are making current electric utility industry practices obsolete. Growing
19 concerns over power outages, long term energy security, and environmental
20 protection contribute to the increasing popularity for DG/DER alternatives. The
21 structure of rates and fees, once designed to promote universal access to central

1 generation, are ill equipped to promote fair competition between central and
2 distributed generation. Consequently, the structure of the central generation grid
3 system is struggling to evolve into an integrated and interactive network of central
4 and distributed generation systems. The County of Maui's position and
5 recommendations in our Statement of Position respond to the need to: restructure
6 outdated electric utility systems into robust systems that can adapt to changing
7 markets, encourage fair and competitive energy markets, and promote the use of
8 energy efficient and renewable energy DG/DER.

9
10 **III. SUMMARY OF TESTIMONY BY MR. LAZAR**

11 Q. Can you summarize the testimony of the County of Maui's expert witness, Mr. Jim
12 Lazar, is included in COM-T-2?

13 A. Below is a summary of Mr. Lazar's testimony, cross referenced to the Commission's
14 Statement of Issues, pursuant to Prehearing Order No. 20922.

15
16 **Planning Issues:**

17 Q. 1. What forms of distributed generation (e.g. renewable energy facilities, hybrid
18 energy systems, generation, cogeneration) are feasible and viable for Hawaii?

19 A. Mr. Lazar's testimony focuses on cogeneration (combined heat and power, or CHP)
20 and renewable energy facilities (solar, wind, biomass). This does not exclude other
21 forms of DG systems from future development, and we believe our recommended
22 policies will facilitate all types of DG development.

1 Q. 2. Who should own and operate distributed generation projects?

2 A. Mr. Lazar's testimony demonstrates that it is not in the public interest for regulated
3 utilities or their affiliates to own or operate DG systems. These utilities should focus
4 on their core mission, providing safe, reliable, and efficient service to utility
5 customers. The utility franchises do not permit them to own or operate DG systems.

6

7 Q. 3. What is the role of the regulated electric utility companies and the commission in
8 the deployment of distributed generation in Hawaii?

9 A. Mr. Lazar discusses this in detail, and recommends that the regulated utilities provide
10 standby service and provide technical assistance in the form of education and quality
11 assurance to DG owners. The Commission should establish reasonable standby
12 charges and reasonable interconnection charges. Finally, the utilities should
13 aggregate networks of customer-site generators together into "virtual power plants"
14 to provide grid reliability services.

15

16 **Impact Issues:**

17 Q. 4. What impacts, if any, will distributed generation have on Hawaii's electric
18 transmission and distribution systems and market?

19 A. Mr. Lazar's testimony demonstrates that the effect will be to reduce costs and
20 improve reliability if reasonable interconnection rules and reasonable standby rates
21 are offered.

22

1 Q. 5. What are the impacts of distributed generation on power quality and reliability?

2 A. Mr. Lazar's testimony demonstrates that reliability will be enhanced. Power quality
3 must be regulated to ensure that customers obtain quality equipment, and that other
4 customers are not adversely affected. Reasonable interconnection rules can achieve
5 this.

6

7 Q. 6. What utility costs can be avoided by distributed generation?

8 A. Mr. Lazar discusses savings in generation, transmission, and distribution costs that
9 can be avoided. In particular, if best-efforts standby service is offered, transmission
10 and distribution costs can be significantly offset.

11

12 Q. 7. What are the externalities costs and benefits of distributed generation?

13 A. Mr. Lazar identifies a number of benefits, including lower reliance on imported fuel,
14 local economic development benefits by using more labor-intensive sources of supply
15 and indigenous resources, and land use and visual benefits. There are potential air
16 quality issues if DG is not subject to the same emission rules as central station
17 generation, and there may be fuel transportation impacts.

18

19 Q. 8. What is the potential for distributed generation to reduce the use of fossil fuels?

20 A. Mr. Lazar demonstrates that the fuel efficiency of DG can be much greater than that
21 of central station generation. In addition, to the extent that progressive DG policies
22 encourage efficiency or on-site renewable energy development, the fossil fuel use can

1 be significantly reduced. We believe that the impact fees we propose would have
2 that effect.

3
4 **Implementation Issues:**

5 Q. 9. What must be considered to allow a distributed generating facility to interconnect
6 with the electric utility's grid?

7 A. Mr. Lazar discusses safety and reliability issues that need to be addressed in
8 reasonable interconnection standards.

9
10 Q. 10. What is the appropriate rate design and cost allocation issues that must be
11 considered with the deployment of distributed generation facilities?

12 A. Mr. Lazar discusses a number of rate design issues. First, reasonable standby rates
13 must be structured with low demand charges, with most capital recovery built into
14 energy charges, so that standby service is not a barrier to DG development. Standby
15 demand charges must recognize the fact that multiple standby customers can use the
16 same utility reserve capacity. Restructuring utility declining block rates into time-of-
17 use rates is an important tool to ensure that DG equipment is operated during peak
18 periods for the benefit of the system. The Commission should establish wheeling
19 rates for the Counties, in order to avoid the possible expense of duplicative facilities.
20 The Commission should consider performance-based ratemaking options to remove
21 the "throughput incentive" that current regulatory principles provide.

22

- 1 Q. 11. What revisions should be made to the integrated resource planning process?
- 2 A. Mr. Lazar identifies the potential for significant deferral of generation, transmission,
3 and distribution capacity costs by utilities with DG potential in their service
4 territories. The Commission should require full consideration of DG potential in the
5 IRP process, and examine appropriate incentives for development of DG systems in
6 particular locations or at particular times when the benefits are greatest.
7
- 8 Q. 12. What forms of distributed generation (e.g. renewable energy facilities, hybrid
9 energy systems, generation, cogeneration) are feasible and viable for Hawaii?
- 10 A. Mr. Lazar's testimony focuses on cogeneration (combined heat and power, or CHP)
11 and renewable energy facilities (solar, wind, biomass). This does not exclude other
12 forms of DG systems from future development, and we believe our recommended
13 policies will facilitate all types of DG development.
14
- 15 Q. 13. What revisions should be made to state administrative rules and utility rules and
16 practices to facilitate the successful deployment of distributed generation?
- 17 A. Mr. Lazar's testimony suggests that state administrative rules should clearly preclude
18 utility investment, directly or through affiliates, in DG systems. Utility rules should
19 provide for reasonable interconnection policies.
20
- 21 Q. 14. The Parties and Participants may also address general issues regarding
22 distributed generation raised in informal complaint file by Pacific Machinery, Inc.,

1 Johnson Controls, Inc., and Noresco, Inc. against HECO, MECO and HELCO on
2 July 2, 2003, but not specific claims made against any of the Parties named in the
3 complaint.

4 A. Mr. Lazar's testimony touches on some of the anticompetitive issues and the standby
5 service issues raised in the complaint, but does not address specific claims made
6 against any of the Parties named in the complaint.

7
8 **IV. PAST COUNTY OF MAUI ACTIVITIES BEFORE THE COMMISSION**

9
10 Q. What are the County of Maui's past activities relating to distributed generation before
11 the commission and what was your role in those activities?

12 A. The COM has brought up the issue of distributed generation and issues relating to
13 DG in five past Commission proceedings:

- 14
15 • 1990-1992: Docket No. 6617, Instituting a Proceeding to Require Energy
16 Utilities in Hawaii to Implement Integrated Resource Planning;
17
18 • 1992-1993: Docket No. 7258, Regarding Integrated Resource Planning;
19
20 • 1994-1995: Docket No. 94-0226, Instituting a Proceeding on Renewable
21 Energy Resources, Including the Development and Use of Renewable Energy
22 Resources in the State of Hawaii;
23
24 • 1996-1998: Docket No. 96-0493, Instituting a Proceeding on Electric
25 Competition, Including an Investigation of the Electric Utility Infrastructure
26 in the State of Hawaii; and
27
28 • 1997-2000: Docket No. 99-0004, Regarding Integrated Resource Planning;
29 including,
30

- 1 • 1995-1997: Hawaii Externalities Workbook. This Workbook was
2 filed with the Commission as part of the HECO IRP-2, Docket No.
3 95-0347; incorporated in the MECO IRP-2, Docket No. 99-0004,
4 above; and also incorporated in the HELCO (Hawaii Electric Light
5 Company) IRP-2 filing, Docket No. 97-0349.
6

7 **Docket No. 6617, Instituting a Proceeding to Require Energy Utilities in Hawaii**
8 **to Implement Integrated Resource Planning**
9

10 Q. What were the COM's activities in docket no. 6617, relative to DG?

11 A. The COM was an intervenor in Docket No. 6617 and I testified before the
12 Commission on behalf of the COM, the County of Hawaii, and the County of Kauai.
13 The COM helped to create Hawaii's IRP process by actively participating in the
14 collaborative process that was facilitated by the Commission for this docket.

15
16 The COM was initially interested in the IRP process because it provided the
17 opportunity to look at impact fees⁷ as a means to encourage energy efficiency and
18 renewable energy, of which, DG is a subset of each. Accordingly, the COM funded
19 its intervention with money from a COM budget appropriation for an investigation
20 into impact fees (also referred to as hook-up fees) and has advocated for the use of
21 additional impact fees in the two IRP proceedings and the proceeding on electric
22 competition, listed below.

23

24 **Docket No. 7258, Regarding Integrated Resource Planning**

⁷ This item correlates to the Commission's Prehearing Order (CPO) issue #10, relating to DG rate designs and cost allocation issues.

1 Q. What were the COM's DG-related activities in docket no. 7258?

2 A. I represented the County of Maui as a member on Maui Electric Company's
3 ("MECO's") IRP Advisory Group and as a member, the COM's verbal and written
4 comments and recommendations were included in MECO's IRP-1 Docket No. 7258
5 filing to the Commission. The following is a summary of our comments and
6 recommendations.

7 1992-93: During IRP Advisory Group meetings, the COM requested that DG
8 resources be included in the IRP plan.⁸ MECO's response to this request was that
9 there was not enough time to do such an assessment and that MECO would instead
10 conduct a dispersed generation (aka distributed generation) study as a part of its
11 Supply-Side Resource Options Five-Year Action Plan.

12 Small power producing units for dispersed generation is a new
13 concept over the typical large central station power producing units.
14 Electric Power Research Institute is currently developing different
15 strategies and methodologies to identify the benefits of dispersed
16 generation. In addition, Pacific Gas & Electric with National
17 Renewable Energy Laboratory are examining a different approach to
18 this type of generation.

19
20 To this end, MECO will conduct studies to : (1) evaluate
21 opportunities for dispersed generation, co-generation, and remote or
22 off-line generation facilities on Maui, and (2) gather and analyze
23 additional information to permit a more thorough assessment of
24 several of the supply side options identified in the IRP Supply-Side
25 Resource Report.

26
27 Potential cycles applicable include simple cycle combustion turbine,
28 combined cycle combustion turbine, fuel cell, wind energy,
29 photovoltaics, pumped storage hydroelectric, hydroelectric, battery

⁸ This recommendation correlates to the CPO issue #11, relating to IRP revisions.

1 storage, and other generating technologies.

2
3 Schedule: 18 months

4 Cost estimate: \$175,000⁹

5
6 July 16, 1992: During the first MECO IRP Advisory Group meeting, I
7 requested that hook-up fees¹⁰ be considered as a demand-side management (“DSM”)
8 resource option.¹¹ The COM raised the issue of hook-up fees because the
9 establishment of additional hook-up fees could significantly impact DG markets and
10 other consumer energy technology markets/DSM programs.

11 August 19, 1992: During an IRP Advisory Group meeting, the COM
12 recommended consideration of photovoltaic (“PV”) DG resources for isolated areas
13 like Hana.¹²

14 September 2, 1992: During an IRP Advisory Group meeting, the COM
15 recommended consideration of photovoltaic (“PV”) DG resources for remote
16 communities, such as Hawaiian Home Land developments.¹³

17 October 25, 1993: Commenting in writing on the Draft Integration Report, the
18 COM recommended that instead of considering three megawatts (“MW”) of central
19 generation PV, MECO should consider three MW of off-grid, PV DG resources as

⁹ Page 23 of Appendix A.3 of MECO IRP-1, Docket No. 7258

¹⁰ This recommendation correlates to the CPO issue #10, relating to rate design and cost allocation.

¹¹ This DSM recommendation correlates to the CPO issue #11, relating to IRP revisions.

¹² Page 3-19, Book 7 of MECO IRP-1, Docket No. 7258

¹³ Page 3-21, Book 7 of MECO IRP-1, Docket No. 7258.

1 an alternative to power line extensions. The COM also recommended that MECO
2 need not develop wind resources on its own, but should instead solicit bids for wind
3 energy, based upon MECO's cost and operational requirements.^{14, 15}

4 October 13, 1994: In a letter to Chairman Yukio Naito and the members of the
5 Commission, the COM provided comments on the testimony submitted by the State
6 Department of Business, Economic Development and Tourism ("DBEDT") in the
7 contested case proceeding for Docket No. 7258. DBEDT adopted in their
8 testimony¹⁶, some of the comments from the October 25, 1993 COM letter to MECO
9 referred to above. However, with regard to the COM recommendation to acquire
10 wind energy from a competitive bidding process, DBEDT instead supported electric
11 utility ownership of wind energy. The COM argued against DBEDT
12 recommendation as follow:¹⁷

13 At this time, we feel that MECO should not be required to develop
14 renewable energy resources, like the wind energy resource in the
15 SUP-1 plan. From our perspective, MECO should only be required
16 to proactively support the acquisition of wind energy. We see several
17 issues which would need to be resolved if MECO is required to
18 develop renewables. Accordingly, we suggest that this matter be
19 further explored in your upcoming docket on the development and
20 use of renewable energy resources.¹⁸
21

¹⁴ Page 8-188, Book 7 of MECO IRP-1, Docket No. 7258.

¹⁵ This recommendation correlates to the CPO issue #2, relating to DG ownership.

¹⁶ Exhibit DBEDT-101, Docket No. 7258.

¹⁷ This recommendation correlates to the CPO issue #2, relating to DG ownership.

¹⁸ Page 2, letter to Commission Chair Naito, Docket No. 7258, October 25, 1994.

1 **Docket No. 94-0226, Instituting a Proceeding on Renewable Energy Resources,**
2 **Including the Development and Use of Renewable Energy Resources in the State**
3 **of Hawaii**

4
5 Q. What were the COM's DG-related activities in docket no. 94-0226?

6 A. The COM was an intervenor in this proceeding and I participated in the collaborative
7 sessions which produced the "Collaborative Document," which was transmitted to
8 the Commission and included in the Commission's report to the Legislature,
9 "Strategies to Facilitate the Development and Use of Renewable Energy Resources
10 in the State of Hawaii," dated February 1996.

11 November 3, 1995: The Statement of Position by the County of Maui¹⁹ included
12 the two following recommendations relating to the development of renewable energy
13 distributed generation.

14 *Net Metering:*²⁰ The COM recommended net metering (aka net billing) to encourage
15 utility customers to demonstrate the viability of small scale renewable energy in
16 distributed applications.

17 We recommend Net Billing because government funds for
18 demonstration projects are becoming very limited and because NBS
19 would create near term opportunities for customers to develop and
20 demonstrate the use of renewables without creating unreasonable rate
21 impacts. Additionally, NBS are desirable because: 1) it would
22 stimulate market demand for renewable technologies, thereby helping
23 to reduce market costs: 2) it would lower the utility's cost of
24 demonstrating the performance of distributed systems by utilizing
25 non-utility investments, and 3) it would help support the state's

¹⁹ Pages E-19-23, Appendix E of the Collaborative Document, Docket No. 94-0226.

²⁰ This recommendation correlates to the CPO issue #10, relating to rate design and cost allocation.

1 renewable energy service companies.²¹

2
3 *County-Specific Wheeling Rates.*²² The COM recommended county-specific
4 wheeling to encourage the county government to develop distributed renewable
5 energy systems.

6 We feel that reasonable, county-only wheeling rates would allow the
7 counties to pursue cost effective, joint venture arrangements with
8 renewable energy power producers. Also, county-only wheeling
9 would allow the counties to match the development of intermittent
10 renewable energy resources with loads that do not require firm power,
11 thus maximizing the effectiveness of the renewable energy resource.
12 For example, the energy from remote wind turbine generators could
13 be matched with the demands of some of the Counties' water
14 pumping facilities, particularly those with excess reservoir capacity
15 and/or back-up generation.

16
17 We currently do not support general wholesale or retail wheeling,
18 only wheeling for the counties. Therefore, we feel that most of the
19 concerns expressed about wheeling in general do not apply to
20 situations involving county-only wheeling, and that any remaining
21 concerns can be accommodated in the design of a county-specific
22 wheeling rate.²³

23
24 **Docket No. 96-0493, Instituting a Proceeding on Electric Competition, Including**
25 **an Investigation of the Electric Utility Infrastructure in the State of Hawaii**

26
27 Q. What were the COM's DG-related activities in docket no. 96-0493?

28 A. The COM intervened in this proceeding and I represented the COM in all meetings
29 and collaborative group sessions. The following is a summary of our

²¹ Page E-21, Appendix E of the Collaborative Document, Docket No. 94-0226.

²² This recommendation correlates to the CPO issue #10, relating to rate design and cost allocation.

²³ Page E-22, Appendix E of the Collaborative Document, Docket No. 94-0226.

1 recommendations relating to DG.

2 October 9, 1998: The Statement of Position of the Counties of Maui and
3 Kauai²⁴, joined by the County of Hawaii (collectively referred to as the “Counties”),
4 recommended that a proceeding be opened to investigate ways to increase the
5 competitiveness of the consumer energy products and services (aka retail energy
6 services) market. This recommendation was made because:

7 The unique characteristics of our island energy systems: separate and
8 small grids, high electricity prices, abundant renewable energy
9 resources, vulnerability to energy emergencies, oil dependent energy
10 economy, and rigorous land use and environmental permitting
11 processes, make Hawaii ideally suited to benefit from the increased
12 development of retail energy services. The Counties envision that the
13 benefits from a fully competitive retail energy services market will
14 outweigh the benefits from a fully competitive grid services market.
15 Therefore, we recommend that Hawaii’s restructuring efforts initially
16 focus on increasing competition in the marketplace for retail energy
17 services.²⁵

18 This recommendation is consistent with the opening of the instant docket and it was
19 based in large part upon the recognition by the Counties that DG products and
20 services could provide significant benefits to Hawaii. These benefits include:

- 21 • Increased consumer savings,
22 • Increased consumer choice, and
23 • Increased public benefits, such as increased job creation, decreased pollution,
24 enhanced energy security, and enhanced energy emergency capabilities.

²⁴ The COM Statement of Position and a separate Executive Summary are contained in the Collaborative Report for Docket No. 96-0493, dated October 19, 1998.

²⁵ Pages 6-7, Statement of Position of the Counties of Maui and Kauai, Docket No. 96-0493.

1
2 The Counties further recommended that the competitiveness of the consumer energy
3 products and services market should be increased by addressing market deficiencies
4 first, then if need be, to treat market deficiencies with market support mechanisms.

5 Making the retail energy services market fully competitive by
6 correcting market deficiencies would save taxpayers' and ratepayers'
7 money by minimizing or eliminating the need for market support
8 mechanisms. The adage here is that it is generally cheaper to correct
9 market deficiencies than it is to treat the symptoms of market
10 deficiencies with market support mechanisms. These market support
11 mechanisms include:

- 12 a) Tax subsidies like the State energy conservation tax credits
13 and the Counties' real property tax exemptions for alternative
14 energy improvements,
15 b) Ratepayer subsidized demand-side management incentives
16 like lost revenue recovery and shareholder incentives, and
17 c) Government mandates like energy codes, public benefit
18 charges, and renewable energy portfolio standards.

19 While nothing is inherently wrong with these market support
20 mechanisms, we recommend that these measures be considered as
21 actions of last resort, rather than actions of first preference.²⁶
22

23 The market deficiencies referred to above were related to the structure of the electric
24 utilities' rates and fees, which are designed to promote the use of central generation,
25 as opposed to being designed to promote the use of DG and other consumer energy
26 products and services.

27
28 **Docket No. 99-0004, Regarding Integrated Resource Planning**

29 Q. What were the COM's DG-related activities in docket no. 99-0004?

²⁶ Pages 9-10, Statement of Position of the Counties of Maui and Kauai, Docket No. 96-0493.

1 A. I represented the County of Maui as a member on Maui Electric Company's IRP
2 Advisory Group and as a member, the COM's verbal and written comments and
3 recommendations were included in MECO's IRP-2 Docket No. 99-0004 filing to the
4 Commission. The following is a summary of our comments and recommendations.

5 November 18, 1997: During an IRP-2 Advisory Group meeting, the COM
6 recommended consideration of photovoltaic ("PV") DG resources.²⁷

7 June 16, 1998: During an IRP-2 Advisory Group meeting, the COM explained
8 that micro DG systems for small commercial customers are emerging in the
9 marketplace and that in the future, these small scale DG applications will become
10 more relevant to the utility.²⁸

11 Also during that meeting, the COM submitted a PV DG report titled, "Photovoltaics
12 For Demand-Side Management Utility Markets: A Utility/Customer Partnership
13 Approach".²⁹ The conclusion of that report stated:

14 The use of PV as a dispatchable peak shaving technology appears to
15 provide higher value in utility DSM applications compared to supply-
16 side or non-dispatchable DSM applications of PV. Our analysis
17 indicates that PV-DSM is closer to commercial viability than
18 previously thought and may be currently cost-effective for certain
19 utilities with above-average commercial rates. An innovative
20 utility/customer partnership is proposed in which benefits are pooled
21 for the purpose of purchasing PV-DSM systems. Under this
22 arrangement, the opportunity of PV to play a role in the utility DSM

²⁷ Page F-32, Appendix F of MECO IRP-2 Plan, Docket No. 99-0004

²⁸ Page F-129, Appendix F of MECO IRP-2 Plan, Docket No. 99-0004

²⁹ Pages F-135-138, Appendix F of MECO IRP-2 Plan, Docket No. 99-0004

1 market is enhanced.³⁰

2
3 Additionally, the COM submitted product information on hardware and software
4 products by Encorp, Inc. that can be used to aggregate DG resources and thereby
5 allow a utility to dispatch the aggregated DG systems as one “virtual” power plant.³¹

6 July 15, 1998: During an IRP-2 Advisory Group meeting, the COM submitted
7 an article on DG titled, “Unleashing Innovation in Electricity Generation.”³²

8 December 9, 1998: During an IRP-2 Advisory Group meeting, the COM
9 recommended that MECO consider a PV DG DSM³³ project on Lanai,³⁴ similar in
10 scale to the PV system developed at the Mauna Lani Hotel on the Big Island.

11 March 8, 1999: Commenting in writing on MECO IRP-2 finalist plans, the
12 COM recommended that photovoltaic resources should be considered as a demand-side
13 management resource³⁵, instead of a supply-side resource.

14 We recommend that the 4 MW photovoltaic resource be changed
15 from a supply-side resource to a demand-side management resource
16 because customer owned systems are more economically viable than
17 utility owned systems. This approach would represent the most
18 conceivable planning scenario. For planning purposes, we would
19 further recommend that the resource cost be based upon the avoided

³⁰ This correlates to the CPO issue #1, relating to the feasibility and viability of DG.

³¹ Pages F-139-155, Appendix F of MECO IRP-2 Plan, Docket No. 99-0004

³² Pages F-177-184, Appendix F of MECO IRP-2 Plan, Docket No. 99-0004. Note: In the meeting minutes, the submittal of this article was attributed to a wrong person.

³³ This recommendation correlates to the CPO issue #2, relating to DG ownership.

³⁴ Page F-234, Appendix F of MECO IRP-2 Plan, Docket No. 99-0004

³⁵ This recommendation correlates to the CPO issue #2, relating to DG ownership.

1 cost value of the energy produced by the systems over a 20 year
2 system life. We also recommend that an action plan item be
3 established to determine specific program designs, unless we can
4 reach an earlier agreement based upon the discussions that are
5 currently in progress between MECO and the County.³⁶
6

7 April 9, 1999: During an IRP-2 Advisory Group meeting, the COM
8 recommended³⁷ that finalist plan F9 change its four MW supply-side PV resource to
9 a demand-side management resource.³⁸

10 June 30, 1999: During an IRP-2 Technical Advisory Group meeting, the COM
11 inquired about utilizing customer owned DG³⁹ units in MECO's proposed Capacity
12 Buyback program. The MECO/HECO response was "...with the improvements in
13 technology, it may be feasible at a later time to use customer owned units for daily
14 dispatch. This can be addressed in a later IRP."⁴⁰

15 August 18, 1999: During an IRP-2 Advisory Group meeting, the COM
16 recommended that MECO look at adopting the interconnection standards⁴¹ for small
17 scale PV DG systems developed by Texas and New York.⁴²

18 January 19, 2000: During an IRP-2 Advisory Group meeting, MECO and the

³⁶ Page F-281, Appendix F of MECO IRP-2 Plan, Docket No. 99-0004

³⁷ Page F-318, Appendix F of MECO IRP-2 Plan, Docket No. 99-0004

³⁸ This recommendation correlates to the CPO issue #2, relating to DG ownership.

³⁹ This recommendation correlates to the CPO issue #2, relating to DG ownership.

⁴⁰ Page F-334, Appendix F of MECO IRP-2 Plan, Docket No. 99-0004

⁴¹ This recommendation correlates to the CPO issue #3, relating to the role of the utility.

⁴² Page F-342, Appendix F of MECO IRP-2 Plan, Docket No. 99-0004

1 COM discussed MECO's assessment of a DG proposal made by the COM called the
2 "Iniki Plan".⁴³

3 K. Kobayashi calls this the "Iniki Plan," in response to the need for
4 useful backup after a devastating hurricane like Iniki. Under this
5 scenario, emergency generators will be run and maintained regularly,
6 which improves energy emergency preparedness and mitigation
7 capabilities. Other benefits include:

- 8 • generation would be available from other sources at different
9 locations around the island. This additional generation can be
10 used to improve MECO's reliability.
- 11 • the addition of new MECO generation can be deferred.
- 12 • DSM rebates and incentives may be applicable, as customer
13 use of commercial power is reduced.

14
15 The Iniki Plan consists of two main components:

16 1- A "Virtual Power Plant," where power from many small units
17 at different locations is centrally dispatched. This power
18 would be available no more than 416 hours per year roughly
19 based on 8 hours of operation per week, and operational in
20 2002. K. Kobayashi added that he earlier reported to the
21 County Energy Subcommittee that the amount of available
22 generation from existing emergency generators on Maui was
23 estimated to be 20 MW, however, to be conservative, he
24 asked MECO to look at 10.5 MW firm capacity from existing
25 County government emergency generators only.

26
27 2- Micro Cogeneration, where both public and private entities
28 would have cogeneration systems. K. Kobayashi estimated
29 there could be up to 40 MW of firm capacity, starting with 1
30 MW in 2001 and up to an additional 8 MW in each year
31 thereafter depending upon the amount needed to match load
32 growth demands.⁴⁴

33
34 February 15, 2000: Commenting in writing on MECO IRP-2 finalist plans⁴⁵, the

⁴³ This recommendation correlates to the CPO issue #3, relating to the role of the utility.

⁴⁴ Page F-358, Appendix F of MECO IRP-2 Plan, Docket No. 99-0004

⁴⁵ Pages F-399-401, Appendix F of MECO IRP-2 Plan, Docket No. 99-0004

1 COM's recommendations included the following:

- 2 • That plan F29 be modified to change the 4 mW of PV from a supply-
3 side resource to a demand-side resource.⁴⁶
- 4 • That the micro cogeneration component of the COM's proposed
5 "Iniki Plan" be modeled as proposed by the COM.
- 6 • That MECO should include a discussion of the results of its
7 Dispersed Generation Study (previously identified in this testimony
8 in footnote number 1).
- 9 • That the modeling of the virtual power plant component of the
10 COM's proposed "Iniki Plan" be adjusted to reflect flexibility in
11 dispatch scenarios.
- 12 • To encourage energy efficiency and renewable energy, of which DG
13 can be a subset of each, that MECO include a demand-side
14 management action plan that includes an assessment of rate designs
15 such as inclining block rates, infrastructure assessments such as
16 impact/hook-up fees, and nonprofit delivery mechanisms to provide
17 full technology and fuel choices and other services to consumers.

18
19 The COM ended the letter with the following general recommendation:

20
21 In conclusion, the IRP plan will be used in unprecedented ways and
22 under dynamic circumstances. For the first time, the Maui County
23 Council will use the IRP plan in their power plant zoning
24 deliberations and the PUC will likely explore using the IRP plan with
25 a competitive bidding process. Moreover, the market paradigm is
26 changing from a monopoly service to a more competitive
27 environment and the infrastructure paradigm is evolving from central
28 station power plants to customer-sited distributed generation systems.
29 (emphasis added)

30
31 These unparalleled changes were not foreseen at the inception of the
32 IRP process and long range situations have never been in more doubt.
33 Consequently, efforts should focus on near term plans that can
34 respond to new regulatory needs, transition MECO through industry
35 transformations, and protect ratepayers and stockholders from
36 stranded costs. Please look beyond past planning conventions and
37 reflect a forward-thinking perspective in your IRP plan and action

⁴⁶ This recommendation correlates to the CPO issue #2, relating to DG ownership.

1 plans.⁴⁷

2
3 May 4, 2000: Commenting in writing on the draft MECO IRP 2000 report,
4 the COM included the following recommendations:

5 Distributed Generation: Please include the 1997 Dispersed
6 Generation Assessment as an appendix to the IRP-2000 report.
7 Where appropriate, either delete customer names/sites or include
8 customer names/sites with the consent of the customer.

9
10 Distributed Generation: Please consider conducting a distributed
11 generation action plan for Lanai. The focus of the action plan would
12 be to evaluate and support the installation of customer generation
13 systems that would eliminate or defer the need for a new utility
14 generation unit in 2007. The action plan should be conducted before
15 expenditures are made for the new unit, Miki Basin LL-9, which I
16 understand will begin on or around 2002 for air permitting.

17
18 Elements of the action plan should include, but not be limited to, an
19 assessment of all viable technology options and portfolios, an
20 assessment of the total utility system benefits of the distributed
21 generation systems, and an assessment of all utility actions that can
22 be taken to support the development of customer generation systems.
23 We further suggest that you consider some of the actions taken by
24 Kauai Electric to support customer distributed generation systems,
25 such as working with a micro-cogeneration company to jointly
26 present accurate information to potential customer-generators. The
27 summer 1999 HECO publication *Powerlines* should not be used
28 because it contains old and inaccurate information about micro-
29 cogeneration systems.

30
31 Distributed Generation: The draft distributed generation action plan
32 does not contain any specific implementation projects. We recognize
33 that the development of standby generators in Hana is a step in the
34 right direction. However, please consider building upon the 1997
35 dispersed generation study and following up on all cost effective
36 distributed generation opportunities. Instead of the general statement,
37 "MECO will examine and, if prudent, develop DG technology
38 through small-scale demonstration and pilot projects in situations

⁴⁷ Page F-401, Appendix F of MECO IRP-2 Plan, Docket No. 99-0004

1 where knowledge can be gained through hands-on experience,” please
2 consider replacing it with the following:
3

4 MECO will examine distributed generation
5 alternatives for all planned transmission and
6 distribution system improvements. MECO will also
7 develop, or facilitate the development of, all
8 distributed generation alternatives determined to be
9 cost effective. The examination of distributed
10 generation alternatives will consider all utility system
11 benefits, all non-utility ownership options, and all
12 clean energy alternatives, such as propane fuel
13 systems and renewable energy systems.
14

15 Demand-side Management: Please reconsider your position for item
16 6.a) in your April 20, 2000 letter to the County. You stated,
17 “Consideration of inclining block rates is beyond the scope of IRP
18 and more appropriate for general rate proceedings.” This statement
19 is inconsistent with past MECO positions. In testimony before the
20 PUC in the docket instituting IRP, dated February 5, 1991, Ms.
21 Estrella Seese, Director of Rates and Load Research for HECO, stated
22 in T-5, page 37, “Rate design or the pricing of the utility’s service
23 complements the technology-based demand-side options for load
24 shifting, load management, or peak clipping purposes. Appropriate
25 pricing or rate design is one of the key determinants of the cost-
26 effectiveness to customers of demand-side options which require
27 initial customer investments. Rate design could be used in the IRP as
28 a valuable tool to increase customer participation in demand-side
29 management programs. Rate design could also offer a valuable and
30 cost-effective alternative to technology-based demand-side programs
31 for achieving the same DSM objectives.” Further, on pages 46 and
32 47, Ms. Seese states, “The following changes may be evaluated and
33 implemented to support the IRP:...6) Assess the feasibility of
34 replacing the declining demand charge rate form in the Company’s
35 Schedule P with time-of-use demand charge.”
36

37 As I recall, I raised the request to study rate design as a demand-side
38 management action in the first cycle of IRP. However, due to time
39 constraints, this request was deferred. I raise this issue again because
40 it is still relevant and especially pertinent to the emerging distributed
41 generation market. (emphasis added)
42

43 Demand-side Management: Please reconsider your answers for items

1 6.b) and 6.c) in your April 20, 2000 letter. Integrated Resource
2 Planning creates the opportunity for MECO to be proactive on issues
3 affecting demand-side management. Section IV.F.3. of the PUC's
4 Framework for Integrated Resource Planning states, "The utility shall
5 further identify any technological limitations, infrastructural
6 constraints, legal and government policy requirements, and other
7 constraints that impact on any option or the utility's analysis." The
8 request to assess actions that would encourage customer investments
9 in energy efficiency and renewable energy appear to be within the
10 scope of the aforementioned provision of the IRP Framework.⁴⁸
11

12
13 **HECO Utilities Hawaii Externalities Workbook**

14 Q. What is the Hawaii Externalities Workbook and how does it relate to docket no. 99-
15 0004, above?

16 A. The Hawaii Externalities Workbook was the HECO Utilities effort to assess
17 externalities and was incorporated in the HECO Utilities' IRP-2 plans. The
18 Externalities Advisory Group was formed to provide the HECO Utilities advice and
19 recommendations and I represented the COM on the Externalities Advisory Group.
20 The comments and recommendations submitted by the COM were included in the
21 Hawaii Externalities Workbook dated July 1997, and submitted to the Commission
22 in Docket No. 95-0347, relating to HECO's IRP-2 filing, incorporated in the MECO
23 IRP-2, Docket No. 99-0004, and also incorporated in the HELCO (Hawaii Electric
24 Light Company) IRP-2 filing, Docket No. 97-0349.⁴⁹

25 Q. What were the COM's general recommendations?

⁴⁸ Pages F-420-422, Appendix F of MECO IRP-2 Plan, Docket No. 99-0004

⁴⁹ This item correlates to the CPO issue # 7, relating to DG externalities.

1 A. The COM's general concerns, as stated in the "Joint Statement of Position By The
2 Counties of Hawaii and Maui" were:

3 In general, the process for this work effort was flawed. As stated in
4 the County of Maui's letter dated February 12, 1996, "It seems that
5 the current strategy of ERG is to gather existing data first, then to
6 decide which methodology is viable based upon the quality of the
7 available data. This approach seems to contrast with a normal
8 appraisal approach, which would call for a determination of the
9 problem first, then the methodology is selected and the appropriate
10 data gathered." As a result of this flawed process, the Counties' main
11 concerns about economic, quality of life, and site specific
12 externalities were not adequately studied.

13
14 Another general concern about this work effort is that it is still
15 unclear how the results will improve the IRP process and help to
16 identify the optimum resource plan. Until this is demonstrated, the
17 recovery of the costs associated with the development of this
18 Workbook is not justified.⁵⁰

19
20 **Summary**

21 Q. Can you summarize the com's past activities and recommendations relating to DG?

22 A. The COM's past activities relating to the instant proceeding began in 1990
23 when the COM was accepted as an intervenor in the Commission's proceeding
24 investigating Integrated Resource Planning, Docket No. 6617. The COM's primary
25 interests were to help design an open IRP process with county government
26 participation and to create a level playing field for competition between consumer
27 energy products and services and traditional electric utility grid services.

28 The COM has continually advocated for the fair treatment of consumer DG

⁵⁰ Page 34, Attachment III, Hawaii Externalities Workbook, July 1997.

1 products and services, including such market reforms as the addition of new hook-up
2 fees, revised rate designs, and including DG in the IRP process as customer-owned,
3 DSM program measures. Our Statement of Position, above, builds upon these
4 recommendations.