

EXECUTIVE CHAMBERS
HONOLULU

LINDA LINGLE
GOVERNOR

January 10, 2003

The Honorable Robert Bunda, President
and Members of the Senate
Twenty-Second State Legislature
State Capitol, Room 003
Honolulu, Hawaii 96813

Dear Mr. President and Members of the Senate:

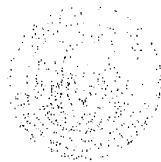
For your information and consideration, I am transmitting herewith two (2) copies of the Public Utilities Commission's report pursuant to S.R. No. 105, S.D. 1, Regular Session of 2002, Requesting the Formation of the Power Quality Task Force to Study Issues Relating to Responsibility Over Power Quality in Hawaii.

Pursuant to Act 231, Session Laws of Hawaii 2001, I am also informing you that the report may be viewed electronically at www.hawaii.gov/budget/LegReports/reportslist.htm.

Sincerely,

LINDA LINGLE

Enclosures



EXECUTIVE CHAMBERS

HONOLULU

LINDA LINGLE
GOVERNOR

January 10, 2003

The Honorable Calvin K. Y. Say, Speaker
and Members of the House
Twenty-Second State Legislature
State Capitol, Room 431
Honolulu, Hawaii 96813

Dear Mr. Speaker and Members of the House:

For your information and consideration, I am transmitting herewith two (2) copies of the Public Utilities Commission's report pursuant to S.R. No. 105, S.D. 1, Regular Session of 2002, Requesting the Formation of the Power Quality Task Force to Study Issues Relating to Responsibility Over Power Quality in Hawaii.

Pursuant to Act 231, Session Laws of Hawaii 2001, I am also informing you that the report may be viewed electronically at www.hawaii.gov/budget/LegReports/reportslist.htm.

Sincerely,

LINDA LINGLE

Enclosures

**STATE OF HAWAII
PUBLIC UTILITIES COMMISSION**

**Report Submitted to the Legislature Pursuant to S.R. No. 105, S.D. 1
Requesting the Formation of the Power Quality Task Force to Study Issues
Relating to Responsibility Over Power Quality in Hawaii**

January 2003

Background

During the Regular Session of 2002, the Senate adopted S.R. No. 105, S.D. 1 (SR105 SD1), which asks the Public Utilities Commission (Commission) to establish a Power Quality Task Force (Task Force) to investigate and study power quality in Hawaii. The purpose of the task force is to provide information, which should assist the State in determining whether further action should be taken to ensure that the quality of electrical power is adequate to satisfy the future needs of the State.

The resolution asks the Task Force to determine:

- (1) "Who is currently measuring power quality;
- (2) "Whether power quality should be increased;
- (3) "Which agency or agencies have regulatory authority over power quality;
- (4) "What are the root causes of poor power quality;
- (5) "Whether legislation is needed to improve power quality;
- (6) "Whether equipment should be added to the electric grid to strengthen power quality;
- (7) "What agency should handle poor power quality grievances;
- (8) "Whether interconnection nodes should have monitoring devices to obtain power quality measurements; and
- (9) "Whether such measurements can be used to determine whether non-utility generators increase or decrease power quality."

SR105 SD1 asks the Commission to include various parties from the energy industry and state and local government as members of the Task Force. The

Commission is also asked to file interim reports of the Task Force with the Legislature, and a final report prior to the convening of the Regular Session of 2005. No resources were provided to the Commission to undertake and support the Task Force effort.

Discussion

Power quality generally relates to the level and frequency of near-instantaneous disruptions in electrical power supplied to the consumer (e.g. voltage flicker, frequency swings, harmonic distortion). Pursuant to Chapter §269, Hawaii Revised Statutes, the Public Utilities Commission has certain duties related to assuring the quality of electric service provided by the public utilities, including those aspects related to power quality.

Under this statute, the Commission presently has jurisdiction over regulated power providers, covering quality, safety, and reliability of service. Power quality standards are already in place, including those pertaining to standard frequency, voltage limits, and voltage variation. The Commission has various means of addressing power quality issues, including but not limited to collaborative methods, complaint handling, and contested case proceedings.

SR105 SD1 asks the Commission to initiate a task force, consisting of various members of the community, to identify and address existing power quality issues. In responding to the legislative request, the Commission has sent out a questionnaire, addressing the various power quality issues identified by the resolution, to each of the following parties named by SR105 SD1:

- Department of Commerce and Consumer Affairs, Division of Consumer Advocacy
- Department of Business, Economic Development and Tourism (DBEDT)
- Hawaiian Electric Company (HECO)
- Kauai Island Utility Co-op (KIUC)
- Life of the Land
- Hawaii Renewable Energy Alliance (HREA)
- Hawaii Solar Energy Association
- Puna Geothermal Ventures (PGV)
- County of Kauai
- County of Maui
- County of Hawaii

In addition to addressing generic issues, the questionnaire asks for detailed information related to existing power quality problems, as well as criteria, methods, standards and measurements to be used in evaluating the problems and solutions.

At this point, responses to the questionnaire have been received from all parties except the Kauai Island Utility Co-op and the Hawaii Solar Energy Association. The Commission appreciates the efforts of the parties and the information provided should prove to be valuable in the continuing efforts to identify and improve on power quality in the State. Copies of the responses to the questionnaire are attached, and are also being forwarded to each of the responding parties.

Summary of Survey Responses

- The Consumer Advocate has not received any power quality complaints in the past two years. Prior to that period, the Consumer Advocate received one informal complaint.
- Since January 2001, HECO has received thirty-nine complaints on Oahu attributed to power quality. Of those, thirty-two were related to problems on the customer's side of the electric meter (i.e. not related to utility operations).
- The Counties of Kauai and Hawaii identified power quality problems that were reported by their operating divisions (e.g. Dept. of Water).
- The general consensus was that the utilities, and entities with particularly critical power quality requirements are measuring power quality.
- HECO reported that it will measure power quality for an individual customer, when requested.
- The general consensus was that the Public Utilities Commission has existing authority over power quality issues and should handle grievances related to power quality problems.
- Generally, respondents believed that power quality should be increased if it was shown to be cost effective to do so.
- Various parties noted that consumers with higher power quality requirements can install equipment to raise the quality of the power they utilize.
- HECO asserted that the power quality on the utility grid meets national standards, and is sufficient for a large majority of electric customers.
- HECO cautioned that raising the power quality of the entire utility grid for those consumers with higher power quality requirements would increase the electric bills for all consumers.
- HECO stated that the root cause of power quality problems is usually found on the customer side of the meter.
- HECO noted that utility operations, such as circuit switching, reclosing, and capacitor bank switching may contribute to power quality problems, but are also required for system maintenance and protection.
- HREA asserted that the root causes of power quality problems are related to utility facilities and operations.
- The respondents did not believe that legislation is needed at this time.

- HECO reported that power purchase agreements have provisions that specify interconnection requirements and allow for basic power quality measurements at interconnection nodes.
- Life of the Land commented that power quality devices should be placed along the utility grid, including at distributed generation nodes.