



## HOUSE COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION

February 2, 2012, 10:00 A.M.

Room 325

**(Testimony is pages long)**

### TESTIMONY IN SUPPORTING INTENT OF HB 2400, COMMENTS AND AMENDMENTS

Chair Coffman and members of the Committee:

The Blue Planet Foundation supports the intent of HB 2400, a measure which seeks to, among other changes, bifurcate Hawai'i's main electric utility company into a transmission and distribution company and generating assets. The intent of this measure, we believe, is to establish a public utility that is solely in the business of transmitting and distributing electricity to customers (creating a "wires" company), thereby reducing or eliminating the inherent conflict of interest in owning both the means of generation (which are currently fossil fuel power plants) and the means of distribution (the powerlines and auxiliary infrastructure to convey electricity). Blue Planet supports this concept in theory as a way to transform Hawai'i's electricity landscape to enable clear economic alignment of clean energy goals. Our testimony contains three parts: the need for institutional restructuring, specific comments on HB 2400, and alternative approaches to address the structural problems that this measure is intended to correct.

#### *The need for institutional restructuring*

Achieving the preferred system of energy self-sufficiency for Hawaii—one where wind, solar, and geothermal energy are no longer considered "alternative" energy—requires intelligent, transformative policy. Fortunately, Hawai'i can model policy after solutions adopted elsewhere to help clear the myriad institutional, regulatory, and financial barriers blocking Hawaii's clean energy future. Eliminating the vertical monopoly and separating electricity generation and distribution (as HB 2400 contemplates), clearly aligning utility profitability with Hawaii's clean energy future, provide independent oversight of grid reliability and interconnection, and other changes are all potential policy tools to help accelerate the transition to Hawaii's clean energy future.

Hawaii's electricity today is largely produced by central station power plants that distribute power to customers. For example, currently, electricity flows in one direction: from the power plant to your home or business. This is much like television in the 1960s. When you turned on the TV, you watched whatever one of the three networks was broadcasting. You couldn't store the broadcast and you couldn't contribute your own content. That's roughly how our power grid operates today. This paradigm is changing, however, as more customers produce their own power from clean energy sources and distributed sources of power come online.

Today, however, access to the electricity grid is largely controlled by a single utility—and that utility receives scant financial benefit in plugging into clean energy sources, particularly if those sources are widely distributed. Blue Planet believes that the role of electric utilities in Hawai'i will shift from a centralized producer-distributor model to a mostly decentralized, distribution manager model—the utility will control and manage the wires of the new smart grid but much of the power will come from independent, clean energy sources. Our future power grid will resemble today's Internet—where distributed servers both send and receive packets of information—and less like yesterday's commercial television. The role of the utility will be similar to an Internet provider, moving the electrons in the most efficient and effective manner.

The current regulatory paradigm does not drive the utility to adopt renewable energy at the pace and scale that our energy crisis warrants. Hawaii's main electric utility is currently regulated such that its fiduciary responsibility to advance the interests of their shareholders puts their goals at odds with the public interest in moving as rapidly as possible toward energy self-sufficiency. Existing laws give the utility little economic incentive to pursue clean energy projects<sup>1</sup>. Long-term utility profits are tied mostly to capital investments that the utility makes, encouraging them to purchase expensive new plants or undertake major upgrades to existing facilities. Since third-party renewable energy projects displace the need for utility investments, and energy efficiency reduces electricity use, the utility does not profit directly from such clean energy initiatives.

Further, adding substantial amounts of renewable energy and energy efficiency will render existing fossil generation facilities useless (asset impairment), potentially leaving the utility with "stranded" investments on their books. Finally, when the utility purchases power from independent power producers, like large solar farms, the utility is exposed to additional financial risk. These institutional barriers—decreasing sales on top of increasing costs to enable a system that doesn't help their bottom line—makes change incredibly difficult for the utility.

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<sup>1</sup> Unless these projects require major upgrades and investments to grid infrastructure to enable them. Even so, the utility has not demonstrated a strong desire to allocate significant capital expenditure in this area (as opposed to power plant upgrades, biofuel infrastructure, environmental compliance, and plant maintenance).

Hawaii's electric utilities control the economic conditions and pace at which clean energy investments occur in Hawai'i. The following problems arise:

- *Market signals.* There is a lack of transparent market price signals in Hawai'i because renewable energy projects can sell power only to utilities. This slows and hampers clean energy investment.
- *Utility control.* Utilities manage the price, terms and conditions and pace at which renewable projects are developed through control of Power Purchase Agreement (PPA) negotiations and competitive bidding processes.
- *New technologies.* Utilities determine when, at what pace, and the terms and conditions new technologies can be utilized to accommodate additional renewable generation (e.g., Demand response and storage, which can be used to provide ancillary services and supply capacity).

These issues are a fairly recent evolution for the electricity business in Hawai'i. Hawaii's current utility regulatory structure is a holdover from the 19<sup>th</sup> century. A vertically integrated monopoly that controls all aspects of electricity generation, transmission, and distribution no longer makes sense in a world where entrepreneurial independent power producers (including homeowners and business owners), enabled by technological advances, can develop Hawaii's renewable energy resources.

Changes in the regulatory structure and the state's electricity markets with the goals of removing complete utility control over electricity generation, interconnection, and distribution—while aligning utility economic goals with adoption of clean energy resources—would help to accelerate Hawaii's transition to energy self-sufficiency.

### *Comments on HB 2400*

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House Bill 2400 seeks to—among other changes—separate Hawai'i's main electric utility company into a transmission and distribution company and generating assets. Blue Planet offers the following specific questions and comments.

- House Bill 2400 changes the definition of a “public utility” but it is not clear how the main utility would divest itself of its generation assets (which are valued in the billions of dollars).
- Does the new entity or owner of the generation assets become a public utility and regulated under this act since many of the provisions remain that apply to generation?

Or does the new owner simply become an independent power producer and enter into a power purchase agreement with the new “wires” company?

- It is unclear in HB 2400 who has the responsibility to manage the electrical grid to maintain reliability and stability.
- Page 4, line 1: the definition may leave some gray areas that require further definition (perhaps in administrative rules) of the key phrase “own or operate both the methods of producing electricity and the means of conveying...” For example, where does battery storage fall?
- Page 4 - Line 9: We believe that power purchase agreements (PPAs) with affiliates should be allowed if through a competitive bidding process and found by the Commission to be just and reasonable.
- Page 4, line 13: The phrase “and not by any other means” should be added to the end of the sentence for the sake of clarity and to reaffirm the bill’s basic restriction around PPAs. We also want to ensure that PPAs, as contemplated here, include other agreements, such as feed-in tariff standard agreements.
- Page 5, line 2: The PUC sets rates based upon the record developed in a contested case proceeding.
- Page 24 - lines 1 - 10: Blue Planet takes no position on this provision (levelized rates), but it might be more defensible if the island transmission systems are interconnected.
- Page 25, lines 9 - 13: Prioritizing geothermal energy is in tension with the existing renewable portfolio standard definition of eligible resources. We would prefer this part to read “....development of firm, intermittent, distributed, dispatchable resources to replace or reduce the use of existing fossil....”
- Page 25 - Line 18: It is unclear what is meant by “grid safe.” We prefer “produced in a reliable manner with good utility practices.”
- Page 26 - Line 14: With the elimination of “production,” we assume an independent power producer or producers buy the existing generating assets and enter into a PPA with the new transmission and distribution (“wires”) company. The “wires” company must be required to operate the grid in a reliable, stable, and safe manner with good utility practices.

## *Alternative approaches to address existing structural problems*

House Bill 2400 seeks to eliminate the inherent conflict of interest in owning both the means of generation (which are currently fossil fuel power plants) and the means of distribution (the powerlines and auxiliary infrastructure to convey electricity). The intention is to create a new structure that reduces the use of fossil-based electricity generation and enables much greater use of stable, indigenous, renewable energy resources. Eliminating the vertical monopoly and bifurcating electricity generation and distribution (as HB 2400 contemplates) likely achieves these goals. Other policy tools are currently available—and modeled elsewhere—to achieve these goals. These include:

- Establishment of a formal independent process to establish reliability and interconnection standards for clean energy;
- Legislative policy direction supporting the recovery of costs for “stranded assets”;
- Creation of a “performance incentive mechanism” to reward the utility for achieving clean energy goals; and
- Unbundling ancillary services and perhaps electricity transmission and generation.

### ***Independent reliability and interconnection standards***

Ensuring reliable electricity while enabling private clean energy producers to access Hawaii’s power grids requires the establishment of formal, objective, and verifiable reliability and interconnection standards. This is best achieved by replacing utility control of grid access with control by a neutral entity tasked with establishing reliability and interconnection rules that encourage clean energy development in all appropriate forms. Such a third-party oversight model for grid access has succeeded elsewhere in democratizing power production. (House Bill 2525—the Hawaii Electricity Reliability Administrator measure—contains policy to do this.)

Hawaii’s main utility is the only major electric utility system in the United States that is not subject to any formal and transparent bulk power electric reliability standards. Hawaii was exempted from federal mandatory electric reliability standards applicable to all mainland electric utilities established by the North American Electric Reliability Corporation (NERC) and approved by the Federal Energy Regulatory Commission (FERC). Today there are no reliability standards upon which to objectively assess impact of additional renewable energy projects, such as new distributed solar projects.

Hawaii’s main utility’s systems are not currently planned and operated according to NERC-equivalent reliability standards. Virtually all electric systems in the continental United States operate under NERC reliability standards. Hawaii’s utility’s systems are basically the same as other United States systems operating under NERC reliability standards insofar as all systems must maintain adequate voltage, balance supply and demand in real time, and maintain system

stability. The experience of the Electricity Reliability Council of Texas and New Zealand demonstrates that formal reliability standards are appropriate and utilized not only in North America, but on isolated electric grids similar to those in Hawai'i.

Historically, a compelling need did not exist for formal bulk power electric reliability standards in Hawai'i, as Hawai'i was not electrically interconnected with the mainland, nor were individual island grids interconnected to each other. But with the increase in distributed power systems, the need for reliability and interconnection standards is clear.

Formal bulk power electric reliability standards and measures are essential to objectively assess grid reliability impacts for any electric utility and to insure reliable grid operation. Standards will:

- Provide an objective basis by which to measure the level of and trend in system reliability in general; and
- Provide an objective basis to measure the reliability impacts, if any, of incorporating increasing quantities of intermittent renewable energy resources.

Due to the absence of formal reliability standards, the Hawaii's main utility is at present under no requirement to publish official reports concerning compliance with standards. Reporting on compliance with formal reliability standards will allow verification and increased knowledge and understanding about reliability issues by the PUC and stakeholders.

Hawaii's clean energy transformation requires formal and transparent bulk power electric reliability standards. Since the potential exists for trade-offs between system reliability and greater utilization of renewable energy, it is essential to have bulk power electric reliability standards in place to provide a benchmark to measure over time the impacts of additional renewable energy integration. Further, formal and transparent electric reliability standards provide the reliability and operational rules of the road for various stakeholders: utilities, independent power producers, renewable energy developers, regulators, and others.

The process used by NERC to establish and maintain bulk power reliability standards is open, transparent and utilizes significant stakeholder involvement to develop and modify the standards. The hallmark of the NERC standard-setting process is that an entity other than the local utility manages the process and maintains an open and transparent process with substantial stakeholder participation. This also ensures that interested parties that may make important substantive contributions to the standards and capacity determinations are not excluded from the process.

Reliability standards could be established by an independent council attached to the PUC, through a contract administered similar to the Public Benefits Fund for efficiency, or some other arrangement—as long as the standards are developed in a formal, objective, and independent

manner. These standards for grid interconnection should then apply to all producers of clean energy who wish to access the electricity grid.

### ***Aligning utility incentives with clean energy***

To encourage greater utility support for integrating non-fuel renewable energy onto Hawaii's electricity grids, a policy should be established to allow for the recovery of the utility's "stranded assets"—existing power plants and other fossil facilities—preventing these facilities from becoming anchors that restrain clean energy progress. Further, the PUC should be required to consider a "performance incentive mechanism" to reward the utility for achieving clean energy goals. This will align the financial decision making within the organization with achievement of Hawaii's aggressive clean energy goals. It will also give Wall Street reasons to invest in the utility and help fund Hawaii's clean energy transition.

### ***Unbundling ancillary services***

Finally, the PUC should be required to direct the electric utilities to "unbundle" or separate ancillary services and procure those services from non-fossil fuel sources. The Federal Energy Regulatory Commission defines ancillary services as those "necessary to support the transmission of electric power from seller to purchaser given the obligations of control areas and transmitting utilities within those control areas to maintain reliable operations of the interconnected transmission system." Unbundling of such ancillary services is commonplace in other utility markets. Such a policy would create competitive markets that will most efficiently determine the suppliers and prices for many ancillary services. It would also help foster Hawaii's clean energy future by requiring electric utilities to purchase ancillary services derived from sources other than fossil fuel (including but not limited to energy storage and demand response measures)—if feasible and reasonably economical.

Of course, none of the important PUC policy and regulatory work will be complete without proper funding and resources. Blue Planet fully supports allocating 100% of the Public Utilities Commission special fund to the PUC.

Thank you for considering this measure. We respectfully ask that the Committee move HB 2400 forward for further discussion and refinement.

Thank you for the opportunity to testify.