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# A BILL FOR AN ACT

RELATING TO PUBLIC UTILITIES.

**BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:**

1           SECTION 1. The purpose of this Act is to enhance Hawaii's  
2 energy and economic security and reduce its vulnerability to  
3 wildly fluctuating fuel prices related to electricity generation  
4 by removing barriers to the development of solar electric  
5 resources and increasing the accessibility of net energy  
6 metering.

7           SECTION 2. Chapter 269, Hawaii Revised Statutes, is  
8 amended by adding a new section to be appropriately designated  
9 and to read as follows:

10           "§269-    Optional pricing program. (a) Each electric  
11 utility shall offer an optional pricing program that allows its  
12 customers to choose to purchase electricity derived from  
13 renewable energy sources in amounts equivalent to a portion or  
14 to all of the customer's electricity consumption.

15           (b) For each kilowatt-hour of electricity that a customer  
16 purchases under the optional pricing program, that customer  
17 shall receive a credit equal to the utility's average cost of



1 fuel used for the generation of electricity during that billing  
2 period.

3 (c) The renewable energy sources used in the optional  
4 pricing program shall include a minimum of fifty per cent that  
5 are derived from solar photovoltaic generation."

6 SECTION 3. Section 269-1, Hawaii Revised Statutes, is  
7 amended by amending the definition of "public utility" to read  
8 as follows:

9 "Public utility":

10 (1) Includes every person who may own, control, operate,  
11 or manage as owner, lessee, trustee, receiver, or  
12 otherwise, whether under a franchise, charter,  
13 license, articles of association, or otherwise, any  
14 plant or equipment, or any part thereof, directly or  
15 indirectly for public use, for the transportation of  
16 passengers or freight, or the conveyance or  
17 transmission of telecommunications messages, or the  
18 furnishing of facilities for the transmission of  
19 intelligence by electricity by land or water or air  
20 within the State, or between points within the State,  
21 or for the production, conveyance, transmission,  
22 delivery, or furnishing of light, power, heat, cold,



1 water, gas, or oil, or for the storage or warehousing  
2 of goods, or the disposal of sewage; provided that the  
3 term shall include:

4 (A) Any person insofar as that person owns or  
5 operates a private sewer company or sewer  
6 facility; and

7 (B) Any telecommunications carrier or  
8 telecommunications common carrier;

9 (2) Shall not include:

10 (A) Any person insofar as that person owns or  
11 operates an aerial transportation enterprise;

12 (B) Persons owning or operating taxicabs, as defined  
13 in this section;

14 (C) Common carriers transporting only freight on the  
15 public highways, unless operating within  
16 localities or along routes or between points that  
17 the public utilities commission finds to be  
18 inadequately serviced without regulation under  
19 this chapter;

20 (D) Persons engaged in the business of warehousing or  
21 storage unless the commission finds that



1 regulation thereof is necessary in the public  
2 interest;

3 (E) The business of any carrier by water to the  
4 extent that the carrier enters into private  
5 contracts for towage, salvage, hauling, or  
6 carriage between points within the State and the  
7 carriage is not pursuant to either an established  
8 schedule or an undertaking to perform carriage  
9 services on behalf of the public generally;

10 (F) The business of any carrier by water,  
11 substantially engaged in interstate or foreign  
12 commerce, transporting passengers on luxury  
13 cruises between points within the State or on  
14 luxury round-trip cruises returning to the point  
15 of departure;

16 (G) Any person who:  
17 (i) Controls, operates, or manages plants or  
18 facilities for the production, transmission,  
19 or furnishing of power primarily or entirely  
20 from nonfossil fuel sources; and  
21 (ii) Provides, sells, or transmits all of that  
22 power, except such power as is used in its



1                   own internal operations, directly to a  
2                   public utility for transmission to the  
3                   public;

4           (H) A telecommunications provider only to the extent  
5           determined by the commission pursuant to section  
6           269-16.9;

7           (I) Any person who controls, operates, or manages  
8           plants or facilities developed pursuant to  
9           chapter 167 for conveying, distributing, and  
10           transmitting water for irrigation and such other  
11           purposes that shall be held for public use and  
12           purpose;

13           (J) Any person who owns, controls, operates, or  
14           manages plants or facilities for the reclamation  
15           of wastewater; provided that:

16           (i) The services of the facility shall be  
17           provided pursuant to a service contract  
18           between the person and a state or county  
19           agency and at least ten per cent of the  
20           wastewater processed is used directly by the  
21           State or county which has entered into the  
22           service contract;



- 1           (ii) The primary function of the facility shall
- 2           be the processing of secondary treated
- 3           wastewater that has been produced by a
- 4           municipal wastewater treatment facility that
- 5           is owned by a state or county agency;
- 6           (iii) The facility shall not make sales of water
- 7           to residential customers;
- 8           (iv) The facility may distribute and sell
- 9           recycled or reclaimed water to entities not
- 10          covered by a state or county service
- 11          contract; provided that, in the absence of
- 12          regulatory oversight and direct competition,
- 13          the distribution and sale of recycled or
- 14          reclaimed water shall be voluntary and its
- 15          pricing fair and reasonable. For purposes
- 16          of this subparagraph, "recycled water" and
- 17          "reclaimed water" mean treated wastewater
- 18          that by design is intended or used for a
- 19          beneficial purpose; and
- 20          (v) The facility shall not be engaged, either
- 21          directly or indirectly, in the processing of
- 22          food wastes; [~~and~~]



1 (K) Any person who owns, controls, operates, or  
2 manages any seawater air conditioning district  
3 cooling project; provided that at least fifty per  
4 cent of the energy required for the seawater air  
5 conditioning district cooling system is provided  
6 by a renewable energy resource, such as cold,  
7 deep seawater[-]; and

8 (L) Any person who owns, operates, and maintains  
9 electricity generating equipment using solar,  
10 wind, biomass, or hydroelectric energy as the  
11 sole sources of energy for that person's own  
12 electrical consumption, and any person who owns,  
13 operates, and maintains electricity generating  
14 equipment using only solar, wind, biomass, or  
15 hydroelectric energy and sells or otherwise  
16 provides that electricity to one or more  
17 customers but not for general public use;  
18 provided that person does not hold a franchise or  
19 charter enacted or granted by the State or have a  
20 bona fide operation as a public utility  
21 heretofore recognized by the commission.



1           If the application of this chapter is ordered by the  
2 commission in any case provided in paragraphs (2)(C), (2)(D),  
3 (2)(H), and (2)(I), the business of any public utility that  
4 presents evidence of bona fide operation on the date of the  
5 commencement of the proceedings resulting in the order shall be  
6 presumed to be necessary to public convenience and necessity,  
7 but any certificate issued under this proviso shall nevertheless  
8 be subject to such terms and conditions as the commission may  
9 prescribe, as provided in sections 269-16.9 and 269-20."

10           SECTION 4. Section 269-101, Hawaii Revised Statutes, is  
11 amended by amending the definition of "net energy metering" to  
12 read as follows:

13           "Net energy metering" means measuring the difference  
14 between the electricity supplied through the electric grid and  
15 the electricity generated by an eligible customer-generator and  
16 fed back to the electric grid over a monthly billing period;  
17 provided that:

18           (1) Net energy metering shall be accomplished using a  
19           single meter capable of registering the flow of  
20           electricity in two directions;

21           (2) An additional meter or meters to monitor the flow of  
22           electricity in each direction may be installed with





1 the consent of the customer-generator, at the expense  
2 of the electric utility, and the additional metering  
3 shall be used only to provide the information  
4 necessary to accurately bill or credit the customer-  
5 generator, or to collect solar, wind turbine, biomass,  
6 or hydroelectric energy generating system performance  
7 information for research purposes;

8 (3) If the existing electrical meter of an eligible  
9 customer-generator is not capable of measuring the  
10 flow of electricity in two directions, the electric  
11 utility shall be responsible for all expenses involved  
12 in purchasing and installing a meter that is able to  
13 measure electricity flow in two directions;

14 (4) If an additional meter or meters are installed, the  
15 net energy metering calculation shall yield a result  
16 identical to that of a single meter; [~~and~~]

17 (5) An eligible customer-generator who already owns an  
18 existing solar, wind turbine, biomass, or  
19 hydroelectric energy generating facility, or a hybrid  
20 system consisting of two or more of these facilities,  
21 is eligible to receive net energy metering service in  
22 accordance with this part ~~[ ]~~; and



1        (6) The electric utility shall not unreasonably deny,  
 2        burden, or delay net energy metering services upon  
 3        request by an eligible customer-generator of the  
 4        electric utility."

5        SECTION 5. Section 269-101.5, Hawaii Revised Statutes, is  
 6        amended to read as follows:

7        "[+]§269-101.5[+] **Maximum capacity of eligible customer-**  
 8        **generator.** The eligible customer-generator shall have a  
 9        capacity of not more than [~~fifty~~] five hundred kilowatts[+] in  
 10       2008, one megawatt in 2009, and two megawatts thereafter;  
 11       provided that the public utilities commission may increase the  
 12       maximum allowable capacity that eligible customer-generators may  
 13       have to an amount greater than [~~fifty kilowatts~~] these amounts  
 14       by rule or order."

15       SECTION 6. Section 269-102, Hawaii Revised Statutes, is  
 16       amended to read as follows:

17       "**§269-102 Standard contract or tariff; rate structure.**

18       (a) Every electric utility shall develop a standard contract or  
 19       tariff providing for net energy metering and shall make this  
 20       contract available to eligible customer-generators, upon  
 21       request, on a first-come-first-served basis until the time that  
 22       the total rated generating capacity produced by eligible



1 customer-generators equals [~~.5~~] one per cent of the electric  
2 utility's system peak demand[~~+~~] in 2008, two per cent of the  
3 electric utility's system peak demand in 2009, five per cent of  
4 the electric utility's system peak demand in 2010, and without  
5 limitation thereafter; provided that the public utilities  
6 commission may increase, by rule or order, the total rated  
7 generating capacity produced by eligible customer-generators to  
8 an amount above [~~.5 per cent of the electric utility's system~~  
9 ~~peak demand.~~] the limitations specified in this section.

10 (b) Each net energy metering contract or tariff shall be  
11 identical, with respect to rate structure, to the contract or  
12 tariff to which the same customer would be assigned if the  
13 customer was not an eligible customer-generator. The charges  
14 for all retail rate components for eligible customer-generators  
15 shall be based exclusively on the eligible customer-generator's  
16 net kilowatt-hour consumption over a monthly billing period.  
17 Any new or additional demand charge, standby charge, customer  
18 charge, minimum monthly charge, interconnection charge, or other  
19 charge that would increase an eligible customer-generator's  
20 costs beyond those of other customers in the rate class to which  
21 the eligible customer-generator would otherwise be assigned are



1 contrary to the intent of this section, and shall not form a  
2 part of net energy metering contracts or tariffs.

3 ~~[(c) The public utilities commission may amend the rate  
4 structure or standard contract or tariff by rule or order.]"~~

5 SECTION 7. Section 269-104, Hawaii Revised Statutes, is  
6 amended to read as follows:

7 **"§269-104 Additional customer-generators.** Notwithstanding  
8 section 269-102, an electric utility ~~[is not obligated]~~ may  
9 choose to provide net energy metering to additional customer-  
10 generators in its service area when the combined total peak  
11 generating capacity of all eligible customer-generators served  
12 by all the electric utilities in that service area furnishing  
13 net energy metering to eligible customer-generators equals ~~[.5~~  
14 ~~per cent of the system peak demand of those electric utilities;]~~  
15 the limitations specified in section 269-102(a); provided that  
16 the public utilities commission may increase, by rule or order,  
17 the allowable percentage of the electric utility's system peak  
18 demand produced from eligible customer-generators in the  
19 electric utility's service area, whereupon the electric utility  
20 will be obligated to provide net energy metering to additional  
21 eligible customer-generators in that service area up to the  
22 increased percentage amount."



1 SECTION 8. Section 269-105, Hawaii Revised Statutes, is  
2 amended to read as follows:

3 **"§269-105 Calculation.** The net energy metering  
4 calculation shall be made by measuring the difference between  
5 the electricity supplied to the eligible customer-generator and:

6 (1) The electricity generated by the eligible customer-  
7 generator and fed back to the electric grid over a  
8 monthly billing period; and

9 (2) Any unused kilowatt-hour credits for excess  
10 electricity from the eligible customer-generator  
11 carried over from previous months since the last  
12 twelve-month reconciliation period."

13 SECTION 9. Section 269-106, Hawaii Revised Statutes, is  
14 amended to read as follows:

15 **"§269-106 Billing periods; twelve-month reconciliation.**

16 (a) Billing of net energy metering customers shall be on a  
17 monthly basis; provided that the last monthly bill for each  
18 twelve-month period shall reconcile for that twelve-month period  
19 the net electricity provided by the electric utility with:

20 (1) The electricity generated by the eligible customer-  
21 generator and fed back to the electric grid over the  
22 monthly billing period; and



1           (2) Any unused kilowatt-hour credits for excess  
2           electricity from the eligible customer-generator  
3           carried over from prior months since the last twelve-  
4           month reconciliation period.

5           (b) Kilowatt-hour credits for excess electricity from the  
6           eligible customer-generator that remain unused after each  
7           twelve-month reconciliation period [~~may not be carried over to~~  
8           ~~the next twelve-month period.~~] shall be compensated at the  
9           average fuel cost for the prior twelve-month period."

10           SECTION 10. Section 269-107, Hawaii Revised Statutes, is  
11           amended to read as follows:

12           "**§269-107 Net electricity consumers.** At the end of each  
13           monthly billing period, where the electricity supplied during  
14           the period by the electric utility exceeds:

15           (1) The electricity generated by the eligible customer-  
16           generator during that same period; and

17           (2) Any unused kilowatt-hour credits for excess  
18           electricity from the eligible customer-generator  
19           carried over from prior months since the last twelve-  
20           month reconciliation period,

21           the eligible customer-generator is a net electricity consumer  
22           and the electric utility shall be owed compensation for the



1 eligible customer-generator's net kilowatt-hour consumption over  
2 that same period. The compensation owed for the eligible  
3 customer-generator's net monthly kilowatt-hour consumption shall  
4 be calculated at the retail rate of the rate class the customer  
5 is normally assigned to."

6 SECTION 11. Section 269-108, Hawaii Revised Statutes, is  
7 amended to read as follows:

8 **"§269-108 Net electricity producers; excess electricity**  
9 **credits and credit carry over.** (a) At the end of each monthly  
10 billing period, where the electricity generated by the eligible  
11 customer-generator during the month exceeds the electricity  
12 supplied by the electric utility during that same period, the  
13 eligible customer-generator is a net electricity producer and  
14 the electric utility shall retain any excess kilowatt-hours  
15 generated during the prior monthly billing period; provided that  
16 the excess electricity generated by the customer-generator, if  
17 any, in each monthly billing period shall be carried over to the  
18 next month as a [~~monetary~~] kilowatt-hour value to the credit of  
19 the eligible customer-generator, which credit may accumulate and  
20 be used to offset the compensation owed the electric utility for  
21 the eligible customer-generator's net kilowatt-hour consumption  
22 for succeeding months within each twelve-month period; provided



1 further that the electric utility shall reconcile the eligible  
2 customer-generator's electricity production and consumption for  
3 each twelve-month period as set forth in section 269-106. [~~The  
4 eligible customer-generator shall not be owed any compensation  
5 for excess kilowatt-hours unless the electric utility enters  
6 into a purchase agreement with the eligible customer-generator  
7 for those excess kilowatt-hours.~~]

8 (b) Subject to the limitations of subsection (a) and  
9 section 269-106, an eligible customer-generator shall have a  
10 transferable ownership interest in any excess electricity  
11 credits that the customer-generator may accumulate pursuant to  
12 this section."

13 SECTION 12. Section 269-111, Hawaii Revised Statutes, is  
14 amended to read as follows:

15 **"§269-111 Safety and performance standards[-];**  
16 **interconnection standards.** (a) A solar, wind turbine, biomass,  
17 or hydroelectric energy generating system, or a hybrid system  
18 consisting of two or more of these facilities, used by an  
19 eligible customer-generator shall meet all applicable safety and  
20 performance standards established by the National Electrical  
21 Code, the Institute of Electrical and Electronics Engineers, and  
22 accredited testing laboratories such as the Underwriters





1 Laboratories and, where applicable, rules of the public  
2 utilities commission regarding safety and reliability.

3 (b) For systems of ten kilowatts or less, an eligible  
4 customer-generator whose solar, wind turbine, biomass, or  
5 hydroelectric energy generating system, or whose hybrid system  
6 consisting of two or more of these facilities, meets the  
7 standards and rules under subsection (a) shall not be required  
8 to install additional controls, perform or pay for additional  
9 tests, or purchase additional liability insurance.

10 ~~[(c) For eligible customer-generator systems of greater  
11 than ten kilowatts, the commission, either through decision and  
12 order, by tariff adoption, or by rule, shall:~~

- 13 ~~(1) Set forth safety, performance, and reliability~~
- 14 ~~standards and requirements; and~~
- 15 ~~(2) Establish the qualifications for exemption from a~~
- 16 ~~requirement to install additional controls, perform or~~
- 17 ~~pay for additional tests, or purchase additional~~
- 18 ~~liability insurance.]~~

19 (c) No later than September 1, 2009, the commission shall  
20 adopt rules pursuant to chapter 91 that incorporate best  
21 practices interconnection standards. Upon adoption, the  
22 standards shall become the interconnection requirements of each



1 utility subject to the authority of the commission. As part of  
2 the rulemaking process, the commission shall consider  
3 interconnection standards adopted within the previous thirty-six  
4 months by other states, standards promulgated by the United  
5 States Federal Energy Regulatory Commission, and model standards  
6 developed by nonprofit organizations with the primary purpose of  
7 promoting renewable energy."

8 SECTION 13. Section 205-4.5, Hawaii Revised Statutes, is  
9 amended by amending subsection (c) to read as follows:

10 "(c) Within the agricultural district, all lands with soil  
11 classified by the land study bureau's detailed land  
12 classification as overall (master) productivity rating class C,  
13 D, E, or U shall be restricted to the uses permitted for  
14 agricultural districts as set forth in section 205-5(b) [-];  
15 provided that it shall be a permissible use of all lands with  
16 soil classified by the land study bureau's detailed land  
17 classification as overall (master) productivity rating class C  
18 and D for photovoltaic energy facilities, including the  
19 appurtenances associated with the production and transmission of  
20 solar generated energy."

21 SECTION 14. (a) The public utilities commission shall  
22 engage an independent consultant to perform an analytical review



1 of increasing penetration levels of distributed solar electric  
2 generation in Hawaii; provided that funding for the consultant  
3 shall not exceed \$85,000; provided further that funding shall be  
4 derived from the existing integrated resource planning surcharge  
5 that is collected from all electric ratepayers.

6 (b) The public utilities commission shall establish the  
7 following criteria for competitive selection of the consultant:

8 (1) The consultant shall have extensive experience in  
9 performing utility photovoltaic value analyses;

10 (2) The consultant shall have been published in the area  
11 of photovoltaic value analysis, included capacity  
12 credit calculations, and other distributed generation  
13 valuation methodologies;

14 (3) The consultant shall demonstrate solid experience in  
15 working with utility personnel on value analysis  
16 studies; and

17 (4) The consultant shall have access to site and time-  
18 specific solar resource data for Hawaii.

19 (c) The consultant shall analyze and report on the following  
20 values and costs of distributed photovoltaic generation on the  
21 islands of Hawaii, Kauai, Maui, and Oahu at penetration levels



1 of two per cent, five per cent, ten per cent, and twenty per  
2 cent:

3 (1) The values including, but not limited to, fuel and  
4 maintenance cost reduction value, capacity value, grid  
5 support (including voltage and voltage amp reactive  
6 support), mitigation of new transmission and  
7 distribution facilities and upgrades, and  
8 environmental and carbon benefits; and

9 (2) The incremental costs to the utility grid including,  
10 but not limited to, additional capital investment in  
11 utility infrastructure, fuel and maintenance costs  
12 associated with spinning reserves, and costs of  
13 equipment and resources required to follow changes in  
14 load patterns that result from the deployment of the  
15 distributed photovoltaic generation.

16 These analyses shall assume photovoltaic penetration equivalence  
17 by major customer type: residential, commercial, and  
18 industrial.

19 (d) The public utility companies, Hawaiian Electric  
20 Company, Inc., Maui Electric Company, Ltd., Hawaii Electric  
21 Light Company, and Kauai Island Utility Co-op, shall provide all



1 data requested by the consultant necessary for the purposes of  
2 performing its analyses.

3 (e) The commission shall submit a report of the  
4 consultant's findings to the legislature no later than twenty  
5 days prior to the convening of the regular session of 2009.

6 SECTION 15. This Act does not affect rights and duties  
7 that matured, penalties that were incurred, and proceedings that  
8 were begun, before its effective date.

9 SECTION 16. If any provision of this Act, or the  
10 application thereof to any person or circumstance is held  
11 invalid, the invalidity does not affect other provisions or  
12 applications of the Act, which can be given effect without the  
13 invalid provision or application, and to this end the provisions  
14 of this Act are severable.

15 SECTION 17. Statutory material to be repealed is bracketed  
16 and stricken. New statutory material is underscored.

17 SECTION 18. This Act shall take effect upon its approval.

18

INTRODUCED BY: *Numina Duarte*

JAN 14 2008



**Report Title:**

Public Utilities; Net Energy Metering

**Description:**

Requires electric utilities to create an optional pricing program based on a percentage of renewable energy sources used to generate electricity. Increases the total rated generating capacity produced by eligible customer-generators. Establishes a transferable ownership interest in excess electricity credits. Increases the maximum capacity of an eligible customer-generator. Directs the public utilities commission to hire a consultant to perform a review of solar electric generation in the State. Clarifies that development of solar electric resources are an acceptable use of category C and D agricultural lands. Clarifies that persons who generate electricity from renewable sources for their own consumption are not public utilities.

