BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF HAWAII

----- In the Matter of ----- )
) PUBLIC UTILITIES COMMISSION ) DOCKET NO. 2011-0225
) Instituting a Proceeding )
) Related to a Competitive )
) Bidding Process for 200 MW or )
) More of Renewable Energy )
) Delivered to or on Oahu. )

ORDER NO. 31354

PROVIDING GUIDANCE FOR DEVELOPMENT OF
THE DRAFT FINAL OAHU 200 MW RENEWABLE ENERGY RFP
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PROVIDING GUIDANCE FOR DEVELOPMENT OF
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By this Order, the commission provides guidance prior
to the filing of the final proposed request for proposal ("RFP")
by HAWAIIAN ELECTRIC COMPANY, INC. ("HECO")¹ in connection
with its competitive bidding process to acquire approximately
200 megawatts ("MW") or more of new, renewable energy to be
delivered to or on the island of Oahu. Specifically, the
commission instructs HECO to amend its draft RFP to solely
solicit proposals for renewable energy to be delivered to or on

¹The Parties to this proceeding are HECO and the DIVISION OF
CONSUMER ADVOCACY OF THE DEPARTMENT OF COMMERCE AND CONSUMER
AFFAIRS ("Consumer Advocate"), ex officio, a party to this
docket proceeding, pursuant to Hawaii Revised Statutes ("HRS")
§ 269-51 and Hawaii Administrative Rules ("HAR") § 6-61-62(a).
There are other pending motions in this docket, which will be
taken up via separate order(s). The commission will provide
movants with courtesy copies of this Order.
the island of Oahu. References or preferences included in the existing draft RFP to or for the potential Lanai wind project should be eliminated from the draft RFP. Instead the potential Lanai wind project shall be reviewed in a new docket opened by the commission. In addition, solicitations for proposals for an undersea transmission cable shall similarly be removed from the existing draft RFP. In a separate order issued concurrently with this Order, the commission will open an investigative docket to: (1) determine whether an undersea cable system to interconnect the Oahu and Maui electric grids is in the public interest, and (2) if so, under what conditions such a grid-tie cable system should be developed, operated and regulated.

I.

Background

As originally conceived in 2008, large potential wind projects on Lanai and Molokai drove the necessity for considering an undersea transmission cable. Transmission system studies for routing, costs, configuration, and technical feasibility, among other things, were done to investigate this limited need. As will be discussed in greater detail in

2See generally Oahu Wind Integration and Transmission Study and Transmission/Cable Routing & Permitting Studies, Application of Hawaiian Electric Company, Inc.; Verification; and Certificate of Service, filed in Docket No. 2011-0112. See also
Section II., conditions have significantly changed since these first projects were introduced five years ago. Through this Order, the commission addresses the various changed circumstances to assist HECO as it determines an overall strategy for renewable energy project development.

The commission also instructs HECO to amend the current draft of the Oahu 200 MW RFP to also bring greater clarity and certainty to the process for HECO and the potential renewable energy developers. The current RFP draft has become overly complex, and involves greater elements of uncertainty. By giving each of the development segments - potential renewable generation projects, a potential Oahu-Maui interisland transmission system, and a potential Lanai Wind Project - a separate path for independent progress, the commission seeks to reduce the number of variables and complexity and thereby increase the likelihood of well-reasoned decisions that result in long-term beneficial impacts for the ratepayers.

After extensive review and deliberation, the commission seeks to facilitate the development of a wide range

of generation options through the RFP mechanism in this proceeding. The commission believes that requesting the development of robust and comprehensive renewable energy generation information, by those who are expert in such technologies, will elicit the best ideas to fully utilize potential new generation and maximize flexibility and efficient use of existing developer assets and utility grid infrastructure assets to benefit the Hawaii electric system\(^3\) and ultimately the ratepayers. Importantly, the generation information developed as a result of the RFP issued should also inform the commission and the State about the prudence and potential need for an Oahu-Maui Island grid interconnection.

A.

Docket Nos. 2007-0331, HECO’s First Competitive Bidding Process and 2009-0327, HECO’s Petition for Declaratory Order

The possibility for both a potential Lanai Wind Project and an undersea cable grew out of HECO’s 2007-2008 competitive bidding process.

\(^3\)Pursuant to HRS § 269-141, “Hawaii electric system” means all electric elements located within the State together with all interconnections located within the State that collectively provide for the generation, transmission, distribution, storage, regulation, or physical control of electricity over a geographic area; provided that this term shall not include any electric element operating without any interconnection to any other electric element located within the State.
On May 19, 2008, in Docket No. 2007-0331, HECO’s first competitive bidding process, HECO submitted its Proposed Final RFP for Non-Firm Renewable Energy Projects, Island of Oahu ("Final 2008 Oahu RFP") to the commission. The Final 2008 Oahu RFP solicited proposals for renewable energy contracts between 5 MW and 100 MW ("conforming bids"), but contained a clause that allowed bidders to submit alternate proposals ("non-conforming bids") for HECO’s consideration. The commission approved the issuance of the Final 2008 Oahu RFP by letter dated June 18, 2008 in Docket No. 2007-0331. In September 2008, HECO received a non-conforming bid from Castle and Cooke Resorts LLC ("Castle & Cooke") for a 400 MW wind project to be sited on the island of Lanai. HECO also received non-conforming bids from First Wind Hawaii, LLC ("First Wind") for construction of a 50 MW wind farm as well as a 350 MW wind farm on Molokai, with the projects to be known as “Ikaika Wind Power.”

4See Letter from HECO to the commission transmitting the Proposed Final RFP, dated May 19, 2008, filed in Docket No. 2007-0331.

5See Proposed Final RFP, dated May 19, 2008, filed in Docket No. 2007-0331, para. 2.7 at 11.


7Id.
On December 31, 2008, HECO, Castle & Cooke, and First Wind executed an agreement seeking to bifurcate the Castle & Cooke and First Wind wind farm proposals from the Final Oahu RFP ("HECO Wind Bifurcation Agreement"). Under the HECO Wind Bifurcation Agreement, the three stipulating parties agreed that HECO would seek commission approval for Castle & Cooke and First Wind to transfer their September 2008 project proposals, as submitted in response to the Final 2008 Oahu RFP, into a separate negotiation and evaluation process for the Lanai/Molokai wind projects.

On November 16, 2009, in Docket No. 2009-0327, HECO filed a petition with the commission seeking a Declaratory Order that HECO’s bifurcation of Castle & Cooke’s and First Wind’s non-conforming proposals from the Final 2008 Oahu RFP was proper. On November 18, 2010, the commission issued its Decision and Order in Docket No. 2009-0327 ("Waiver D&O"), declaring that the proposed large wind farm projects, as described in HECO’s petition filed on November 16, 2009, were not properly submitted through the Competitive Bidding Framework. However, the commission found that, in light of the public interest and to achieve a stated governmental objective,

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8A copy of the HECO Wind Bifurcation Agreement was submitted to the commission by letter filed March 16, 2009 in Docket No. 2007-0331. The HECO Wind Bifurcation Agreement was filed under confidential seal, pursuant to Protective Order No. 23875, filed on December 6, 2007 in the same docket.
HECO was entitled to a waiver from the Competitive Bidding Framework, provided that: (1) fully executed term sheets for each of the Lanai/Molokai Wind Farm projects were filed within four months from the date of the Waiver D&O, unless otherwise ordered by the commission, and (2) documentation supporting the fairness of the price negotiated between HECO and the independent power producers was included in any application for approval of a power purchase agreement ("PPA").

With respect to the commission's first condition for waiver of the Competitive Bidding Framework, the term sheet required agreement on all material terms, including: (1) information on the scope of the project (i.e., technology, capacity, location); (2) the manner in which the energy will be delivered (i.e., as-available, scheduled); (3) the term of the agreement, projected in-service date, and key milestones, including, but not limited to proof of concept and any phases of the project; (4) performance standards; and (5) pricing. On March 21, 2011, a fully executed term sheet between HECO and Castle & Cooke was timely filed in Docket No. 2009-0327; however, no term sheet was executed between HECO and First Wind

\[\text{See Waiver D&O, filed November 18, 2010, in Docket No. 2009-0327, at 26.}\]

Id.
due to First Wind's inability to secure a suitable site for its proposed project.\textsuperscript{11}

According to HECO, on March 25, 2011, the utility notified Castle & Cooke that it had the option to develop a larger wind farm on Lanai, since a term sheet was not executed with First Wind by the March 18, 2011 deadline.\textsuperscript{12} The Castle & Cooke term sheet included an option for it to assign a portion of its larger project development opportunity to a project developer on Molokai, subject to the commission's acceptance of this option, as well as the development of acceptable terms and conditions for a Molokai wind farm including pricing and community benefits.\textsuperscript{13} By letter, dated April 7, 2011, Castle & Cooke informed HECO that it selected the "Second Option," which provided that Castle & Cooke would develop a 200 MW wind farm on Lanai and arranged for the

\textsuperscript{11}See Letter from HECO to the commission, dated and filed on March 21, 2011, in Docket No. 2009-0327, at 1; Letter from HECO to the commission, dated and filed on May 21, 2011, in Docket No. 2009-0327, at 1.

\textsuperscript{12}See id.

\textsuperscript{13}Id. Under the Castle & Cooke term sheet, if Castle & Cooke elects the "Second Option" (as defined in the Castle & Cooke term sheet), the developer of the Molokai wind farm shall propose comparable community benefits for Molokai and reach agreement on the community benefits and supplementation of the Castle & Cooke term sheet to include similar terms and conditions for a power purchase agreement for the Molokai wind farm project within specified time frames provided in the Castle & Cooke term sheet. Id.
development of a wind farm on Molokai, such that the capacity of the Lanai and Molokai Wind Farms total 400 MW.14

On May 23, 2011, in Docket No. 2009-0327, HECO filed its Assignment Request Letter, seeking confirmation from the commission that it is acceptable for HECO to submit a supplemented term sheet for a power purchase agreement with Castle & Cooke. Specifically, HECO requested commission confirmation that it is acceptable to supplement the existing term sheet with Castle & Cooke to reflect an assignment of a portion of the development rights associated with the Molokai portion of the Big Wind Project to a new party, namely Molokai Renewables, LLC. By Order Denying HECO’s Request and Directing HECO to Submit a Draft RFP Pursuant to Framework, filed on July 14, 2011, in Docket No. 2009-0327, the commission denied HECO’s request (“Order Denying Assignment Request”).

With respect to the non-conforming bids HECO received during its final 2008 Oahu RFP, as a result of HECO’s actions and the commission’s decisions on the non-conforming bids, just one project remained - a potential 200 MW wind project to be

14Id. at 1-2. The April 7 letter includes (1) a copy of the executed letter of intent between Castle & Cooke and Molokai Renewables LLC (an affiliate of Pattern Energy Group LP) relating to the transfer of Castle & Cooke’s rights to develop 200 MW of wind energy on Molokai and (2) a copy of the executed letter of intent between Molokai Renewables LLC and Molokai Properties Limited, evidencing site control on Molokai by Molokai Renewables for the project.
developed by Castle & Cooke on Lanai ("Castle & Cooke’s Lanai Wind Project"). First Wind, who proposed to develop the second 200 MW of renewable energy originally carved out by HECO, Castle & Cooke, and First Wind under the Bifurcation Agreement as a potential wind project to be developed on Molokai, failed to meet the requirements set forth by the commission under the Waiver D&O.\textsuperscript{15} By the commission’s Order Denying the Assignment Request, HECO and Castle & Cooke’s attempt to assign the development rights for the 200 MW project that First Wind intended to develop was rejected. Instead of approving the Assignment Request, the commission instructed HECO to solicit proposals for an additional 200 MW or more of renewable energy, which became the basis for the instant proceeding.

B.

Docket No. 2012-0157, Indirect Sale of Lanai Public Utilities

By Decision and Order No. 30998, filed on February 8, 2013, the commission, subject to certain conditions: (1) approved, pursuant to HRS § 269-7(a), and to the extent

\textsuperscript{15}The commission is aware that a wind project on Molokai is less likely to be developed since Molokai Properties Inc. (commonly known as “Molokai Ranch”) in February issued a statement indicating that it did not ". . . renew the agreement for the proposed wind farm project on Molokai Ranch lands at this time.” See Catherine Cluett, Updated: Molokai Ranch Says No to Wind Project, The Molokai Dispatch, February 7, 2013; Catherine Cluett, Big Wind: Not as Big, The Molokai Dispatch, May 31, 2013.
applicable, HRS § 269-17.5, the indirect sale and transfer from Castle & Cooke, Inc. to Lanai Island Holdings, LLC, of all the membership interests of Castle & Cooke Resorts, Inc.'s wholly owned subsidiary, Manele Water Resources, LLC; (2) approved, pursuant to HRS § 269-7(a), and to the extent applicable, HRS § 269-17.5, the indirect sale and transfer from Castle & Cooke, Inc. to Lanai Island Holdings, LLC, of all the stock of Castle & Cooke Resorts, Inc.'s wholly owned subsidiary, Lanai Water Company, Inc.; and (3) approved, pursuant to HRS § 269-7(a), the indirect sale and transfer from Castle & Cooke, Inc. to Lanai Island Holdings, LLC, of all the stock of Castle & Cooke Resorts, Inc.'s wholly owned subsidiary, Lanai Transportation Company, Inc. The commission, consistent with the authority granted to it via chapter 269, HRS, reviewed only the indirect sale and transfer of the public utilities on Lanai, as described immediately above. However, a much larger sale and transfer occurred on Lanai, involving Lawrence J. Ellison's agreement to:

purchase the two resort hotels (the Four Seasons Resorts Lanai at Manele Bay, the Four Seasons Resorts Lanai, Lodge at Koele), two championship golf courses and club houses (The Experience at Koele and The Challenge at Manele), over 88,000 acres of land (including, without limitation, the Koele Project District (600 acres of residential development), the Manele Project District (800 acres of residential development), Lanai City properties (248 acres of various commercial and residential assets), Koele
Stables, Lanai Pines Sporting Clays, CCI's interest in La Ola Solar Farm that sells power to Maui Electric Company, Limited, administrative buildings and central support services assets, employee rental housing, parks and recreation facilities, Club Lanai site and the regulated utilities (Manele Water, Lanai Transportation, and Lanai Water) whose largest customers are the resorts and developments, and other assets. This unique opportunity will be consummated through a purchase and sale of all of the membership interests of CC Resorts, which includes all of CC Resorts' subsidiary entities (including the CCR Regulated Subsidiaries), two other CCI unregulated subsidiaries, and over 88,000 acres of land (including approximately 86,000 acres of land from CCI) (the "Lanai Transaction") 16.

A review of the redacted version of the Sale Agreement for the Lanai Transaction demonstrates that Castle & Cooke intends to retain for itself the right to develop the Castle & Cooke's Lanai Wind Project. Specifically, the exhibit to the Sale Agreement provides:

- Seller shall retain at closing the right to develop the "Big Wind" project, which is a planned wind farm on approximately 7,000 acres of land on the northwest corner of the island capable of producing a contemplated 200 to 400 megawatts of renewable energy ("Wind Project"), as well as all rights and interests in existing

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studies and contracts directly related to the Wind Project.17

C.

Interisland Transmission System Law

By Act 165, Session Laws of Hawaii ("SLH") 2012, the State Legislature provided guidance to the commission about the "regulatory structure under which interisland undersea transmission cables can be developed, financed, and constructed on commercially reasonable terms, such as those upon which successful cable projects have been undertaken in several locations around the world."18 HRS § 269-132 requires that a cable company "shall be selected through a request for proposals, or other process approved by the commission" prior to installation a high-voltage electric transmission cable system.19 This section of the Interisland Transmission System law further requires that a selected cable company "shall not commence commercial operations of the high-voltage electric transmission cable system until it is issued a certificate of public


18Senate Bill 2785, Senate Draft 2, House Draft 2, was passed by the State Legislature as Act 165, SLH 2012 and codified as HRS §§ 269-131 to -135, et seq.

19HRS § 269-132(a).
convenience and necessity by the commission pursuant to section 269-7.5."\textsuperscript{20}

D.

Hawaii Electricity Reliability Standards Law

The 2012 Hawaii Legislature also provided the commission with the authority to "perform necessary electric system reliability and grid access oversight functions, and to allow the commission to contract for the services of a Hawaii electricity reliability administrator to support the commission in carrying out those critical functions throughout the State."\textsuperscript{21}

E.

200 MW Renewable Energy RFP

By Order Opening Docket filed on September 26, 2011, the commission opened the instant proceeding as a repository to receive filings, review approval requests, and resolve disputes, if necessary, related to HECO's plan to proceed with a competitive bidding process to acquire approximately 200 MW or more of new, renewable energy to be delivered to or on the

\textsuperscript{20}Id.

\textsuperscript{21}Senate Bill 2787, Senate Draft 2, House Draft 1, Conference Draft 1, SLH 2012, at 4. Senate Bill 2787 was passed by the State Legislature as Act 166, SLH 2012 and codified as HRS §§ 269-141 to -149, et seq.
island of Oahu ("Oahu 200 MW RFP"). HECO’s first draft RFP was filed with the commission on October 14, 2011. After considering the comments of potential bidders, that of the public and the commission’s Independent Observer ("IO"), HECO reissued its draft RFP via its website, on September 28, 2012. The commission and its IO carefully scrutinized the voluminous draft RFPs, each more than 800 - 900 pages long and containing highly technical information and significant policy decisions embedded within the documents comprising the draft RFP.

II.
Discussion
A.

Review of the Significant Changes in Circumstances Since 2008

As evidenced by the record and summarized in Section I., above, HECO’s Oahu 200 MW RFP was initiated after a number of unusual events and at a time when, by necessity to meet the renewable portfolio standards mandate, any and all renewable projects were wholeheartedly supported. Accordingly, the purpose and structure of the current Oahu 200 MW RFP needs to be modified in light of technical, market, and public policy changes that have and continue to occur. The determination of what constitutes an optimal portfolio of as-available renewable energy resources for the Oahu grid is becoming more complex and

2011-0225

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challenging, given the numerous changes that have occurred over the last five years.\textsuperscript{22}

On one hand, a broader array of potentially cost-effective renewable energy resource technologies and geographic location options may now be available to serve the Oahu grid.\textsuperscript{23} At the same time, structural changes to the electric power systems of Oahu and Maui are occurring, which may potentially limit the ability of Oahu grid to accommodate significant, additional as-available renewable energy resources.

\textsuperscript{22}Indeed, even HECO and its subsidiaries, Hawaii Electric Light Company, Inc. ("HECO"), which serves the Island of Hawaii, and Maui Electric Company, Limited ("MECO"), which serves the Islands of Maui, Molokai, and Lanai, (collectively, the "HECO Companies") in filing their Integrated Resource Plan ("IRP") Report and Action Plan ("IRP Report") in Docket No. 2012-0036 on June 28, 2013, indicate a greater awareness of changing circumstances, wherein they note:

\begin{quote}
[t]he composition, configuration, and operations within the electric power sector in Hawaii are changing dramatically. . . .
\end{quote}

The local and global energy environments are dynamic, changing rapidly and unpredictably. . . .


Note that references to MECO's IRP Report and Action Plan should not be read as an inference that the commission intends, at this juncture, to approve the Action Plan. The commission intends, in Docket No. 2012-0036, to review the Action Plan using commentary from the commission's Independent Facilitator, Advisory Group, and the docket parties and participants, if any, to determine whether the Action Plan is reasonable.

\textsuperscript{23}See, for example, Docket No. 2013-0156, HECO's Application for Waivers, filed on June 18, 2013.
without curtailment of existing or future renewable energy generation. In addition, the price level at which renewable energy projects would be economic as compared to future avoided fossil fuel costs could change in the future.

The more noteworthy technical and market changes are discussed below to provide a foundation and understanding for commission's decisions and guidance regarding restructuring of the Oahu 200 MW RFP.

1. The HECO Companies' annual electrical sales have been declining at an increasing rate, particularly on Oahu.\(^{24}\)

The structural decline in electric sales, if continued into the future, could have several implications relative to acquisition

\(^{24}\)HECO explains:

Due to high fuel costs, effective energy efficiency programs, customer self-generation of electricity and economic conditions, utility sales and peak loads have declined for several years and are expected to be relatively flat (Stuck in the Middle IRP Scenario) or continue to decline (Blazing a Bold Frontier IRP Scenario) in the future.

IRP Report at ES-4. The HECO Companies further elaborate by noting that the "changing economic conditions, incentives for energy efficiency, high electricity prices and substantial tax incentives for customer-sited PV systems, have combined on all islands to reduce system loads and sales..." Id. at ES-15 (emphasis added). The HECO Companies also suggest that "[o]verall usage has been declining for many years and is expected to continue to decline with the successful implementation of these clean energy strategies." Id. at ES-23 (referring to energy efficiency generally).
of as-available renewable energy for Oahu. First, large-scale neighbor island wind projects may not be required in order for the HECO Companies to meet their 2020 Renewable Portfolio Standards ("RPS") target.\textsuperscript{25} Second, the total amount of as-available renewable energy resources that the Oahu grid can accommodate utilizing existing generation technology but without significant curtailment may be declining.\textsuperscript{26} Finally, HECO will need to become more judicious in terms of the amount and type of renewable energy projects selected for development given that there may be less grid capacity for development to accommodate as available renewable energy resources.

2. The relative economic merits of solar PV continue to change rapidly. Solar PV installed costs have dropped

\textsuperscript{25}The HECO Companies advise that they met 13.9\% of energy needs from the renewable generation in 2012. RPS Status Report, filed on April 24, 2013 in Docket No. 2007-0008, at 1 of 4; IRP Report at ES 7. The HECO Companies further report that "[b]y the end of 2013, we expect to achieve 18\% renewable energy, twice the percentage of just five years ago and well ahead of the 2015 Renewable Portfolio Standard goal of 15\%." IRP Report at ES-8. Finally, the HECO Companies estimate that "[t]he sum of energy produced by renewable energy for projects in service in 2012 plus projects in progress is estimated to total more than 3,500,000 MWh/year, which based on current total sales would represent 38\% RPS, very nearly 40\% the requirement for 2030." IRP Report at ES-10.

\textsuperscript{26}For example, HECO has already begun to curtail existing on-Oahu wind generation during off-peak periods due to excess energy conditions. See Reliability Standards Working Group Monthly Report, Attachment 6, filed on May 30, 2013 in Docket No. 2011-0206, at 1 of 10.
substantially and appear to have narrowed the gap between on-Oahu, utility-scale solar and wind PPA prices.\textsuperscript{27} As a result, the delivered cost of energy from the Lanai Wind Project transmitted through a dedicated undersea generation-tie cable may no longer be economic compared to on-Oahu utility-scale solar PV and wind projects.\textsuperscript{28} Distributed solar PV installations are growing at exponential growth rate and are beginning to

\textsuperscript{27}See Docket No. 2013-0156, application by HECO for waiver of the Competitive Bidding Framework, wherein HECO explains that the total average levelized energy price for five selected projects requested for waiver from the Framework (one wind and four PV) is 15.934 cents per kilowatt-hour ("kWh"), which is approximately 29\% lower than the Company's June 2013 on-peak avoided cost of 22.491 cents per kWh. Hawaiian Electric Application for Waivers, filed on June 18, 2013, in Docket No. 2013-0156, at 10.

\textsuperscript{28}Compare the pricing noted in Docket No. 2013-0156, see supra n.25, with the pricing estimated for the Lanai Wind Project as:

about $130/MWh on a levelized basis over the term of the PPA for a 200 MW wind farm (and $110/MWh for a 400 MWh wind farm) . . . .

. . . .

Previously, it was estimated that the cost of interconnecting a 200 MW wind farm on Molokai to the Oahu grid would be about 8 cents per KWh (i.e., -$118,000,000 per year divided by the 1,480 GWh expected to be produced by the two wind farms). Assuming a cost of 13 cents per KWh for the wind farm energy, the all-in cost for the wind farm energy delivered to the Oahu grid was 21 cents per KWh. This is the estimated cost for the Lanai Wind Farm energy that was included in the IRP resource plan analyses for the various scenarios.

alter the net system load profile which could affect curtailment of existing and future utility-scale wind and solar PV projects on Oahu.\textsuperscript{29}

3. Potential exists for large-scale wind and solar projects to be developed on Maui Island for export to Oahu. If an associated undersea cable were utilized to interconnect the Oahu and Maui grids (grid-tie cable system), then potential exists to create economic benefits for Maui ratepayers through coordinated joint operation of the Oahu-Maui grids with ability to export cheaper-fuel-cost-Oahu-generation, if any, to displace higher-fuel-cost-Maui-generation. The potential integration benefits of a grid-tie cable system could be significant such that they would effectively offset a portion of the delivered cost of Maui Island renewable energy to Oahu due to the greater utilization of undersea cable asset investment\textsuperscript{30}. If this were

\textsuperscript{29}For example, HECO has seen exponential growth in its net energy metering program with 513 systems installed in 2009 (2,460 installed kilowatts ("kW")), 1,327 systems in 2010 (7,267 installed kW), 3,424 systems in 2011 (18,518 installed kW), and 8,623 systems installed in 2012 (52,504 installed kW). See Net Energy Metering Status Report, filed on January 31, 2013. The experience of HECO’s subsidiaries, Maui Electric Company, Limited, and Hawaii Electric Light Company, Inc. appear identical in net energy metering expansion over the same period. Installed kW reflects rated generating capacity installed in the year noted, and includes system expansions. See IRP Report at ES-11.

\textsuperscript{30}Greater asset utilization occurs because there would be two-way, additional power transmitted through the undersea cable, which in turn enables the fixed cost of the cable system
the case, then renewable energy projects located on Maui could be lower-cost resource options than perhaps either the Lanai Wind Project or on-Oahu wind and solar projects.

That said, the commission acknowledges that the benefits and costs of an Oahu-Maui grid-tie cable system are unknown at this time. The Oahu-Maui Island grid integration infrastructure option could provide significant potential ratepayer benefits and also could influence whether it is cost-effective to develop alternative as-available renewable resource options for Oahu. Consequently, it is important to investigate and determine as expeditiously as possible whether an Oahu-Maui grid-tie cable system would be in the public interest.

4. New technologies and operating practices are being considered and incorporated within HECO’s and its subsidiaries’ systems. These technologies include: battery energy storage systems ("BESS"), demand response, Smart Grid, and electric vehicles. It is possible that additional as-available renewable energy projects could potentially be accommodated by the Oahu grid if these new technologies and renewable energy projects were utilized to provide ancillary and
to be spread over greater quantity of electricity transmitted through the cable.
other essential grid support services.\textsuperscript{31} Renewable energy and BESS project developers could provide valuable technical information regarding how these technologies could be utilized to supply ancillary services and also the commercial terms and conditions under which these services could be provided.\textsuperscript{32}

5. HECO is currently investigating whether it is appropriate to convert its existing Oahu generators to alternative fossil fuels in order to comply with environmental regulations and potentially to lower energy costs.\textsuperscript{33} If


\textsuperscript{32}HECO's IRP Action Plan, which will be reviewed by the commission in Docket No. 2012-0036, includes the following energy storage plan:

1. Develop and deploy utility-owned and -operated energy storage project.
2. Assess and track energy storage technologies and applications.
3. Conduct energy storage research and demonstration projects.

IRP Report at 20-36.

\textsuperscript{33}HECO indicates its focus will be "on continuing to acquire renewable energy resources, while lowering the cost of electricity on Oahu in both the near term and the longer term by: . . . (3) acquiring liquefied natural gas (LNG) - a cheaper cleaner fuel to substantially reduce emissions from displaced oil while transitioning to a renewable energy future." IRP Report at ES-15. HECO further describes its intention to examine LNG at ES-19, noting:

. . . The IRP includes actions to equip existing facilities to safely transport and burn natural gas.
significant fossil fuel switching were to occur on Oahu, then the fossil fuel costs that would be avoided by development of new renewable energy projects could change substantially from current fuel-oil based avoided cost levels. Reductions in fossil-fuel avoided cost would reset the renewable energy price benchmark or ceiling price at which renewable energy projects would become economic.

The price point at which renewable energy projects would be at parity with future fossil fuel costs could potentially be significantly lower than current fuel-oil parity price if HECO is successful in fuel switching Oahu generators to lower cost fossil fuels. Achieving competitive pricing for new renewable energy projects is essential in order to ensure a “no regrets” economic development of renewable energy projects.

6. Renewable energy project development timing is potentially affected by project location (on-Oahu or Maui County) and influenced by renewable energy tax credit phase-out or expiration dates or disparate tax treatment between wind and

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The transition from oil to LNG will require new infrastructure in Hawaii for: (a) bulk receiving of LNG from ocean-going ships; (b) LNG storage; (c) regasification from liquefied to gaseous natural gas; and (d) distribution of the natural gas to generating facilities.

solar PV technologies. For example, the quickest, near-term tax efficient renewable energy projects that could potentially be developed after the expiration of wind production tax credit in 2013 are likely on-Oahu solar PV projects, which would be developed prior to the expiration of the 30% federal Investment Tax Credit at the end of 2016. However, reliance on a single renewable energy technology or island location may not produce the best long-term preferred portfolio of renewable energy projects that would be in the public interest.

Current federal and state tax laws and policies are subject to periodic changes, which could affect relative economic ranking of renewable technologies and thus need to be periodically monitored. Given the level of renewable penetration versus the relatively small demand loads of those island grid systems, Maui County projects will require the development of an inter-island undersea cable to transmit renewable energy to Oahu, and are likely to take longer to develop than similar renewable energy projects located on Oahu. It is important that the portfolio evaluation process analyze and rank renewable energy projects from a long-term public interest perspective in order to ensure inclusion of more economically beneficial projects that may take longer time to develop, and might be otherwise foreclosed if the utility project development queues are filled with only near-term
projects. Selection of shorter lead-time renewable projects could preclude development of alternative projects with greater overall ratepayer benefits, which results in a potential foregone economic benefit or an opportunity cost. These potential opportunity costs need to be recognized explicitly in the evaluation process for as-available renewable resources.

7. There is uncertainty as to whether the proposed Lanai Wind Project could be brought to fruition consistent with the terms of the Waiver D&O, in light of recent changes that have occurred on Lanai. Further, it is unclear whether the Project is a cost-effective renewable energy resource for Oahu given the potential for significantly lower utility-scale wind and solar PV prices for on-Oahu projects.

8. The Interisland Transmission System law has been passed, which provides the commission with additional responsibilities and authority over matters pertaining to undersea cable systems. Heretofore, it was not necessary for the commission to develop regulatory policies and practices to govern separate transmission cable utilities in Hawaii, as none existed. Commission designation of an undersea cable system as a certified cable company, pursuant to Act 165, SLH 2012, conveys significant benefits to the entity and should be granted only with appropriate ratepayer protections and benefits.
9. An electricity reliability standards law has been passed, which provides the commission with additional responsibilities and authority over matters pertaining to interconnection of renewable energy projects. Several provisions of Act 166, SLH 2012, are pertinent to the Oahu 200 MW RFP. First, the commission has the authority to establish interconnection requirements which shall apply to any electric utility and any user of the Hawaii electric system.\textsuperscript{34} At present, there are no commission-approved interconnection requirements for the HECO Companies that are applicable to all utility-scale renewable energy projects that would be interconnected to the transmission or sub-transmission systems.\textsuperscript{35}

Interconnection performance requirements effectively define the extent to which renewable generators could displace fossil fuel generation without adversely affecting system reliability. The policy objective for Hawaii’s generator interconnection requirements should be the integration of as much renewable energy as is technically feasible and cost effective. Incorporating ancillary service capabilities into new generation projects is typically lower-cost and

\textsuperscript{34}HRS § 269-142(b).

\textsuperscript{35}Development of utility-scale interconnection and generator performance requirements was one of the recommendations submitted to the commission by the RSWG. See Report of the Technical Review Committee, filed on May 29, 2013, in Docket No. 2011-0206, at 27.
cost-effective option than subsequently retrofitting a generator. Incorporating the capability to supply ancillary services into the required design of a renewable energy generation project should be a condition of interconnection for utility-scale renewable generators; to the extent such capability is commercially available for utility-scale renewable energy projects.36

Based upon the foregoing, the commission finds it appropriate to make substantive modifications to the final Oahu 200 MW RFP. Each of these modifications will be discussed separately in the following sections.

The modifications to the draft RFP are offered in recognition of the technical, market, and public policy changes that have and are occurring for the purposes of ensuring the acquisition of a robust long-term portfolio of as-available renewable energy projects that are in the public interest. The foregoing discussion and proposed modifications to the RFP should not be construed in any way as the commission backing away from aggressive pursuit of additional renewable energy projects. On the contrary, the commission recognized the potential for significant cost savings and other benefits associated with renewable energy development and continues to support efforts to make these lower cost resources available to

36 See id. at 25 - 33.
customers. Also, the proposed modifications to the RFP should not be construed as the commission either favoring or not favoring specific renewable energy projects or grid infrastructure development options. Rather, the modifications are designed to enable a more informed and comprehensive assessment, with stakeholder input, of greater number of potential resource and grid infrastructure development options. More importantly, the evaluation of these options should consider an ever-evolving set of futures with significant uncertainties to ensure, as best as possible, a "no regrets" portfolio of as-available renewable energy resources for the Oahu grid. It is also important for prospective renewable energy developers to understand the potential implications of Hawaii’s evolving electricity landscape on the development of a project so that these developers have the opportunity to provide creative solutions in their bid submissions.

B.

Castle & Cooke’s Lanai Wind Project

As a result of the commission's Waiver D&O and Order Denying the Assignment Request, HECO has the opportunity to negotiate a PPA with Castle & Cooke. To be clear, the commission does not believe that any "development rights" have been extended to Castle & Cooke to complete its Lanai Wind
Project. By its Waiver D&O, the commission did, however, provide HECO and Castle & Cooke with an opportunity to negotiate a PPA without HECO's need to conduct a process in conformance with the commission's Competitive Bidding Framework. The commission's waiver should not be read to mean that a PPA, if and when submitted to the commission for decision making, will automatically be approved. Instead, the commission will evaluate any PPA at the time it is filed and on its merits. Whether the Castle & Cooke's Lanai Wind Project is in the public interest, and therefore should be developed, will be determined as part of the comprehensive evaluation of potential as-available renewable energy projects and grid infrastructure development options.

Given the Lanai Transaction and the resulting extent to which Castle & Cooke voluntarily relinquished its ability to control the assets it previously controlled, some uncertainty arises as to whether Castle & Cooke retains an equivalent ability to develop its Lanai Wind Project as it did when it submitted its non-conforming bid to HECO in 2008 and its term sheet in 2011.

As stated above, the current version of the draft RFP for the Oahu 200 MW RFP contains numerous references to and preferences for consideration of scenarios that facilitate the
development of Castle & Cooke’s Lanai Wind Project. The commission finds that such references and preferences hinder the commission’s goal of developing a broad and robust set of renewable generation information for project and utility grid infrastructure development in the State.

As a result, the commission concludes that it will, via separate order issued concurrently with this Order, open a proceeding to review the progress of Castle & Cooke’s Lanai Wind Project to ensure that the proposed Lanai project neither hampers the Oahu 200 MW RFP process nor is hampered by such process itself. Accordingly, HECO is instructed to remove all

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A. This Final RFP is soliciting Bids for a cable transmission capacity that would serve the Proposed Lana'i Wind Farm, as further described below. Furthermore, this Final RFP is soliciting Bids for cable transmission capacity that would serve renewable generators sited Off-O'ahu, provided that transmission cable capacity from Off-O'ahu will not be considered without either (1) with respect to a Cable Bid, a Lana'i Cable Bid or Lana'i Cable Option and with respect to a Combined Resource Bid, a Lana'i Spur, or (2) a statement of reasons as to why it is not commercially reasonable for the Bidder to include a Lana'i Cable Bid, Lana'i Cable Option or Lana'i Spur, as applicable. Such Cable Bids will have to specify how the transmission capacity costs to serve the Proposed Lana'i Wind Farm and generation projects on other islands will be reasonably allocated.
references to and preferences for the Lanai Wind Project from its draft Oahu 200 MW RFP.

In the separate docket opened by the commission to review whether the Lanai Wind Project is in the public interest, the commission intends to evaluate Castle & Cooke's project as a combined resources proposal (i.e., wind project and generation tie transmission cable), without regard to a request for a certificate of public convenience and necessity ("CPCN"), as required by chapter 269, Part VIII, the State's Interisland Transmission System law. In other words, the commission will not assume that a CPCN must be granted pursuant to HRS § 269-132 when evaluating a combined resources proposal.

B.

Undersea Transmission Cable

By separate Order, the commission will commence an investigative proceeding to solicit information and determine if an interisland transmission system interconnecting the Oahu and Maui Island electric grids ("Oahu-Maui Island grid interconnection") is in the public interest. The commission will establish the investigative docket because additional information and analysis is required to comprehensively evaluate whether and under what conditions such an Oahu-Maui Island grid interconnection would provide benefits to the State of Hawaii,
Maui and Oahu ratepayers, and be in the public interest. If the commission determines that an Oahu-Maui Island grid interconnection is in the public interest, then a request for proposals will be issued to solicit bids from potential cable companies to develop, own and operate a high-voltage electric transmission cable system interconnecting the Oahu and Maui Island grids.

Specifically, the docket will complete the following steps and will address a number of issues that remain highly uncertain at this time:

- Seek input from potential cable companies, HECO Companies, and other stakeholders on potential costs and benefits of an Oahu-Maui Island grid interconnection to determine under what circumstances and conditions such a potential system would be in the public interest;

- Seek input on appropriate regulatory policies and practices governing development and on-going regulation of a certified cable company in Hawaii;

- Seek input from potential cable companies, HECO, and other stakeholders on the best way to proceed with developing a high-voltage electric transmission cable system interconnecting Oahu and Maui Island if the commission were to determine such a system is in the public interest; and

- Facilitate public input and dissemination of information on an Oahu-Maui Island grid interconnection.

The commission makes a number of findings and conclusions with respect to solicitation of proposals for an undersea transmission cable.
First, the technical information and analysis required to determine if an Oahu-Maui Island grid interconnection is in the public interest is incomplete and characterized by significant uncertainty. HECO has worked with many stakeholders to prepare "Stage 1" interisland transmission studies, but "Stage 2" studies (evaluating grid-tie options between Oahu and Maui County) were only recently completed in May 2013.\textsuperscript{38}

The purpose of the Oahu-Maui Island grid interconnection investigation is to solicit comprehensive information pertaining to the economic benefits and costs as well as potential technical issues associated with an Oahu-Maui grid-tie transmission system from prospective cable developers, renewable energy project developers, HECO Companies, and other stakeholders. The determination of how Maui Island should be interconnected with Oahu, including high-voltage electric transmission cable configurations, route(s), and capacities, has not been fully investigated and is not well vetted at this time. Permitting and infrastructure requirements for an Oahu-Maui Island grid interconnection, including on-island transmission upgrades and converter station locations, are not well

\textsuperscript{38}Castle & Cooke's Lanai Wind Farm provided the impetus driving the initial studies done for wind integration, routing, cost, and feasibility. As a result, the initial studies have a somewhat limited focus - on Lanai and / or Molokai and upon use of a transmission cable as a generation tie between the islands, instead of also using an electrical grid-to-grid approach.
developed. Routing, infrastructure, and other requirements for an Oahu-Maui island grid interconnection should also be informed by the responses to the Oahu 200 MW RFP competitive bidding process. Therefore, innovative and thoughtful responses from these prospective cable and renewable energy developers, HECO Companies, and other stakeholders should provide the commission with a sound evidentiary basis from which to determine how and whether an Oahu-Maui Island grid interconnection could deliver cost-competitive renewable energy resources from Maui to Oahu, offer lower-cost fossil energy supply to Oahu and Maui ratepayers, and provide an option for subsequent potential interconnection of the Hawaii Island and Oahu electric grids.39

Second, additional information relating to ratemaking policies and practices for a certified cable company need to be further developed. At this time, many regulatory questions are unresolved, including, for example, the appropriate ratemaking formula and process to be used. Specifically, the commission will need to determine appropriate return on common equity levels that should be utilized for such companies. Input from

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39The amount of potential renewable energy projects located on Oahu as compared to Maui County, and whether the total supply of Oahu renewable projects are, in fact, cost-competitive, need additional investigation. The Oahu 200 MW RFP will provide this information and will contribute to the determination of whether renewable energy resources in Maui County would be required in order for the HECO Companies to meet RPS targets in a cost-effective manner or otherwise be in the public interest.
potential cable companies on these and other ratemaking policies, such as obligations to serve or provision of non-discriminatory or preferential transmission access, should be solicited and considered as part of determining if an Oahu-Maui Island grid interconnection is in the public interest. Increasing certainty of the regulatory and ratemaking policies should help to minimize risk resulting in lower overall development costs and future transmission utility rate levels.

Third, the commission requires additional information regarding the optimal path forward for solicitation, procurement, and development of an Oahu-Maui Island grid interconnection, should such a system be found to be in the public interest. Consistent with HRS § 269-132 (a), an undersea transmission cable should be developed, owned, and operated by a regulated cable company operating under authority provided by the commission. However, a number of questions remain unsettled on the procurement and development process. The Order opening the investigation on the Oahu-Maui Island grid interconnection provides additional detail on input the commission seeks at this time.

Fourth, the public and community stakeholders have had limited information and few opportunities to provide input on the broad spectrum of issues related to an Oahu-Maui Island grid interconnection. The investigative docket on this issue will
provide a forum to better facilitate public input and disseminate information.

Finally, as a matter of policy, potential undersea transmission infrastructure should be developed using a "no regrets" strategy that minimizes risk and maximizes use of the transmission infrastructure while preserving future options as the needs of Hawaii's electric systems evolve. If, after reviewing the information presented in the investigative docket, the commission determines that an Oahu-Maui Island grid interconnection is in the public interest, then a request for proposals will be issued to expeditiously develop this interisland transmission system.

As a result of these findings and conclusions, the commission determines that solicitation for a transmission cable by HECO in its Oahu 200 MW RFP is premature. Consequently, in a separate order to be issued concurrently with this Order, the commission will open an investigative proceeding to solicit additional information and determine if an interisland transmission system interconnecting the Oahu and Maui Island electric grids is in the public interest. HECO is instructed to remove all references soliciting for an undersea cable included in the current draft of the Oahu 200 MW RFP prior to filing the final proposed version for commission review.
The commission clarifies that at present its position on an Oahu-Maui Island grid interconnection is neutral. The commission's instructions to HECO to separate the transmission cable RFP from the 200 MW renewable energy RFP should not be read to imply that the commission has a preference for or against an Oahu-Maui Island grid interconnection. Instead, the decision to bifurcate the transmission cable RFP from the 200 MW renewable energy RFP is being done, among other reasons, to allow generation bids to proceed more expeditiously and to be used to inform transmission infrastructure planning efforts and other related actions. The commission's intention in opening an investigative docket is to obtain input from knowledgeable stakeholders on the selection process, policy issues, and overall objectives with respect to how, where, and at what cost a cable may be developed. Through these actions, the commission seeks potential solutions to develop an interisland transmission infrastructure that can minimize risk, maximize utilization of new and existing infrastructure, and achieve greater efficiencies and cost effectiveness to augment and complement the Hawaii electric system, and ultimately, serves the public interest.
C.

Oahu 200 MW RFP

Having determined that the current draft of the Oahu 200 MW RFP should be updated to eliminate references to Castle & Cooke’s Lanai Wind Project and solicitations for an undersea transmission cable, the commission makes the following findings and conclusions about the Oahu 200 MW RFP to provide HECO with further guidance as it finalizes its draft for submission for the commission’s consideration.

1. Renewable energy project developers should be required to submit binding generator bus bar price bids to facilitate a more accurate comparison of project costs. The requirement to exclude interconnection costs from bid price is predicated upon the fact that HECO, not project developers, possess the requisite information to determine grid interconnection and are better equipped to develop binding upgrade cost estimates for utility-scale projects. Moreover, by removing the uncertainty associated with unknown grid interconnection and upgrade costs that are beyond developers’ control, project development risks would be reduced such that lower bid prices could potentially be realized. HECO is in a better position than renewable energy developers to manage and control grid interconnection and upgrade project scope and costs.

2011-0225  38
However, lower generation bus bar prices may not necessarily equate to the lowest total installed project costs, depending upon grid interconnection and upgrade costs. Accordingly, HECO is encouraged to utilize a more streamlined and consolidated process to identify grid interconnection upgrade requirements and develop binding cost estimates. The goals should be to reduce both the length of time required to complete interconnection requirement studies and the cumulative costs of grid upgrades by applying a regional approach where potential projects that are in relatively close proximity to each other from an electrical grid topology perspective are analyzed collectively. The cumulative effect of interconnecting multiple projects in certain areas could create a need for major and costly grid upgrades. The additional costs should be factored into overall project interconnection costs.\textsuperscript{40}

2. Recent experience from HECO's waiver solicitation process suggests that bid price caps are important in establishing competitive price expectations. Accordingly, the RFP should contain price caps or benchmarks, which reflect changing renewable project market dynamics and HECO's fuel switching strategy for Oahu's fossil generators. The purpose of

\textsuperscript{40}Creation of renewable energy development zones has been used on the mainland by RTOs/ISOs and electric utilities to minimize the cost of transmission grid upgrades associated with interconnection of large numbers of renewable energy projects in desirable renewable energy development areas.
the price cap / benchmark is to establish price levels below which "no regrets" acquisition of renewable energy projects would occur from ratepayers' perspective.

3. The evaluation process used by HECO should explicitly consider major future uncertainties and the opportunity cost of foregone resource and grid improvement options to further ensure "no regrets" outcomes. The evaluation process should also balance ratepayer risk exposures due to electric sales uncertainties (how much renewable energy to acquire), energy cost uncertainties (renewable energy costs versus uncertain fossil fuel avoided costs), project development uncertainties and benefits of on-Oahu project compared with off-Oahu projects that could provide potential additional ratepayer benefits if island grids were interconnected. The commission intends to have the commission's IO take a more proactive role in the oversight of the evaluation process.

4. Projects short listed or selected as a result of the evaluation process should not remain in development and interconnection queues indefinitely such that seemingly low cost but low probability projects potentially foreclose development of other more viable projects.

5. Additional information relating to expected curtailment of potential projects under alternative future scenarios should be provided by HECO to bidders to ensure that
bidders can appropriately calculate and assess the risk of curtailment.

6. HECO is further directed to seek proposals from renewable energy developers regarding optional curtailment compensation contract provisions in order to ascertain whether reductions in curtailment uncertainty would translate into equivalent bid price reductions. This information would establish the economic cost of curtailment or alternatively, the economic benefits of renewable energy curtailment reduction.41

7. Further in this regard, the RFP should request optional proposals from renewable energy and BESS project developers to provide technical information as to how their projects could supply ancillary services and other essential grid support services and the commercial terms under which these services would be provided.

8. Given the commission’s authority via the electricity reliability standards law at HRS § 269-142,42 HECO

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41This information could also then inform whether the costs of fossil generator upgrades and new grid control technologies would be justified in part by reduced renewable energy curtailment levels.

42HRS §269-142, the commission’s law relating to electricity reliability standards, provides, in part:

(a) The commission may adopt, by rule or order, reliability standards and interconnection requirements. Reliability standards and interconnection requirements adopted by the commission
should not incorporate independent power producer interconnection performance standards in its draft PPAs, but instead should be separate documents subject to amendment by commission standards promulgated consistent with this new law. RFP should set forth in the separate interconnection and generator performance requirements a provision that utility-scale renewable energy projects are required to install technical capabilities to provide ancillary and other grid support services to the extent that technology to provide these services that is commercially available for utility-scale renewable energy projects.

Based on its careful review of the current draft Oahu 200 MW RFP, the commission instructs HECO to: (1) remove references to Castle & Cooke's Lanai Wind Project; (2) separate the undersea transmission cable from the Oahu 200 MW RFP; and (3) amend the draft Oahu 200 MW RFP to reflect the guidance provided herein.

shall apply to any electric utility and any user, owner, or operator of the Hawaii electric system. The commission shall not contract for the performance of the functions under this subsection to any other entity as provided under section 269-147.
III.

Order

THE COMMISSION ORDERS that HECO shall amend its current draft of the Oahu 200 MW RFP to: (1) remove references to Castle & Cooke's Lanai Wind Project; (2) eliminate solicitations for an undersea transmission cable; and (3) amend the draft Oahu 200 MW RFP to reflect the guidance provided herein. As soon as reasonably practicable, HECO shall submit the amended Oahu 200 MW RFP for the commission's review in this proceeding.

DONE at Honolulu, Hawaii JUL 11 2013.

PUBLIC UTILITIES COMMISSION
OF THE STATE OF HAWAII

By Hermina Morita, Chair

By Michael E. Champlain, Commissioner

APPROVED AS TO FORM:

By Lorraine H. Akiba, Commissioner

Catherine P. Awakuni
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CERTIFICATE OF SERVICE

The foregoing order was served on the date of filing by mail, postage prepaid, and properly addressed to the following parties:

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