

BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF HAWAII

---- In the Matter of ----)  
)  
PUBLIC UTILITIES COMMISSION )  
)  
Instituting a Proceeding )  
to Investigate Distributed )  
Energy Resource Policies. )  
\_\_\_\_\_)

DOCKET NO. 2014-0192

DECISION AND ORDER NO. 33791

**FILED**  
2016 JUL 11 A 9:24  
PUBLIC UTILITIES  
COMMISSION



and (2) directs the Companies to file a non-docketed, thirty-day notice transmittal, which incorporates the commission-approved revisions to Rule 14H and Rule 22.

I.

Background

In Decision and Order No. 33258 ("Order No. 33258"), filed on October 12, 2015 in this docket, the commission approved a Customer Self-Supply tariff option (i.e., Rule 22), which was intended to "enable customer choice in energy production and consumption using a limited- or non-export [distributed energy resources ("DER")] system that can also provide value-added grid service capabilities,"<sup>3</sup> and, among other things, addressed some of the technical specifications of self-supply system design.<sup>4</sup>

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Renewable Energy Action Coalition of Hawaii, Inc.; SunPower Corporation; The Alliance for Solar Choice; and Ron Hooson. Life of the Land did not sign the Stipulation, and Kauai Island Utility Cooperative was a non-participant with respect to the Stipulation.

The phrase "Docket Parties" refers to the parties to the subject docket, Docket No. 2014-0192.

<sup>3</sup>Order No. 33258 at 118 (quoting Docket No. 2014-0192, Order No. 32737, "Granting Motions to Intervene, Consolidating and Incorporating Related Dockets, and Establishing Statement of Issues and Procedural Schedule," Staff Report and Proposal, filed on March 15, 2015, at 23).

<sup>4</sup>Order No. 33258 at 79.

In October 2015, the Companies formed an advisory group called the Advanced Inverter Technical Working Group ("AITWG"), to provide a forum to discuss developing Advanced Inverter capabilities and Customer Self-Supply and Grid-Supply equipment technical requirements.<sup>5</sup> AITWG is comprised of industry representatives and other stakeholders, such as the Department of Business, Economic Development, and Tourism and the Consumer Advocate.<sup>6</sup> Among other things, AITWG facilitates development of the Companies' Advanced Inverter self-certification program and proposed Advanced Inverter Test Plan, provides insight and perspectives from the utility and industry on the technical requirements for interconnection of Advanced Inverters and DER systems, and facilitates AITWG member participation in the Advanced Inverter testing currently underway at the National Renewable Energy Laboratory.

AITWG holds regularly-scheduled semi-monthly conference calls and periodic special topic meetings, and the Companies have instituted an electronic polling process, which solicits input and

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<sup>5</sup>Stipulation at 2.

<sup>6</sup>The industry representatives include inverter manufacturers from the Manufacturing Alliance for Inverters Technical Assessment of Integration Issues ("MAITAI"). Stipulation at 2. The Companies state that the Consumer Advocate began attending AITWG meetings in January 2016. Id. at 2, note 3.

comments from AITWG members that can be shared with the Docket Parties.<sup>7</sup> The poll results are considered non-binding on the Docket Parties; however, the Stipulation states that the discussions among the AITWG members were designed to encourage a collaborative process as a way of identifying potential solutions to issues.<sup>8</sup>

As a result of the AITWG work group process and discussions between AITWG and the Docket Parties, the Stipulating Parties were able to reach agreement on and stipulate to the proposed revisions to Rules 14H and 22 contained in the Stipulation.

## II.

### Proposed Tariff Revisions

#### A.

#### Rule 22

The Stipulation proposes revisions to Rule 22, Customer Self-Supply, related to Option 5 - Advanced Inverter Functionality, and associated language addressing inadvertent

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<sup>7</sup>Stipulation at 3.

<sup>8</sup>Stipulation at 3.

export (the "Inadvertent Export language").<sup>9</sup> Specifically, the revisions respond to one of the AITWG members' primary concerns regarding Rule 22's existing requirement that the expected frequency of Inadvertent Export should be less than two occurrences per 24-hour period.<sup>10</sup> The Stipulation states that "[t]he AITWG members expressed that this requirement could negatively impact the production of Customer Self-Supply systems[,] as high frequency and short duration balancing requirements of a customer's internal loads could easily exceed the two (2) times per 24-hour requirement."<sup>11</sup>

Based on several discussions and polls, the AITWG "reached general consensus on the revisions to the Inadvertent Export language and recommended them to the [Docket] Parties for consideration."<sup>12</sup> The Stipulation includes

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<sup>9</sup>Stipulation at 4. The proposed Rule 22 revisions are set forth in Exhibit A of the Stipulation.

<sup>10</sup>Stipulation at 5.

<sup>11</sup>Stipulation at 5.

<sup>12</sup>Stipulation at 5. The Stipulation states that fifteen AITWG members responded to the final poll regarding the proposed revisions to Rule No. 22, issued on March 9, 2016, which represents 75% of AITWG member organizations. Nine of the respondents agreed with the Companies' modified proposal for the Inadvertent Export language, four disagreed, and one took no position. Those in disagreement with the proposed language revisions had "concerns [] related to the behavior of the Customer Self-Supply system in the event of a Control System Failure, and the future definition and enforcement

these proposed revisions, which would reduce the inadvertent export duration from sixty (60) to thirty (30) seconds by changing Rule 22's "Non-Export Requirements" to state:

Under no circumstances, except during emergency conditions where Advanced Inverter functions, including functions that result in energy export, may be provided pursuant to Rule 14H and this Agreement, shall the Generating Facility Inadvertently Export electrical energy across the Point of Interconnection. Inadvertent Export is the unscheduled and uncompensated export of real power from the Generating Facility for a duration exceeding 30 seconds.<sup>13</sup>

The Stipulation states that the proposed revisions were designed to "generally address[] the technical concerns," and meet the following objectives: (1) minimize excessive operation of the Companies' load tap changers by setting the export duration to less than thirty (30) seconds; and (2) utilize American National Standards Institute ("ANSI") certified meters or similar devices, rather than an Advanced Metering Infrastructure ("AMI") meter by aggregating the

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of contingency, grid supportive functions that export energy." Id. at 6.

<sup>13</sup>Stipulation, Exhibit A, Sheet 44B-1 (addressing "Technical Specifications for Customer Self-Supply Systems"). Exhibit A of the Stipulation contains additional changes to the language in Option 5 to address the change in the duration of power export from a Generating Facility on Sheets 44B-2 and -3.

two occurrences of less than 60 seconds daily to 1 hour per month of the gross kW of the photovoltaic ("PV") system.<sup>14</sup>

The Stipulation also states that the AITWG members and the Companies believe that the proposed revised language is sufficient in addressing concerns related to the primary components of the Option 5 requirements," and that the proposed changes "are not contrary to the [c]ommission's intent when it approved Rule 22 that "[a]ny non-export functionality of a self-supply system shall be subordinate to the ability to provide grid support when needed.'" <sup>15</sup>

B.

Rule 14H

The Stipulation states that the proposed amendments to Rule 14H Appendices I and III "are intended to correct inconsistencies in the tariff sheets filed on October 19, 2015[,] in this docket, to clarify certain parts of the Rule, and to resolve potential conflicts between the proposed revisions to Rule 22 and Rule 14H."<sup>16</sup> The major changes were made to:

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<sup>14</sup>Stipulation at 5.

<sup>15</sup>Stipulation at 6-7.

<sup>16</sup>Stipulation at 7. The entirety of the proposed Rule 14H revisions are set forth in Exhibits B and C of the Stipulation.



(1) Appendix I, Section 4A, to clarify that Advanced Inverter standards are now in effect, and further implementation of additional functions are subject to commission approval;

(2) Appendix III, to clarify that Screen 1 is to determine whether an Interconnection Application meets the requirements of Rule 22, and therefore, is afforded expedited review;<sup>17</sup> and

(3) Appendix III, to clarify the Technical Review Process flow chart to be consistent with the description of the screens provided thereafter.<sup>18</sup>

### III.

#### Findings and Conclusions

1. In light of the ever-evolving technical challenges associated with Hawaii's DER, the commission appreciates the proactive efforts to evaluate the need for, and reach agreement on, the proposed revisions to Rule 22 and Rule 14H.

2. After a review of the Stipulation and associated documents, the commission approves as just and reasonable the

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<sup>17</sup>The Stipulation notes that "[t]o avoid conflicts between Rule 14H and Rule 22, the five non-export options will reside solely in Rule 22, and are struck from Rule 14H, Screen 1." Stipulation at 8.

<sup>18</sup>Stipulation at 7-8.

proposed revisions to Rule 22, set forth in Exhibit A of the Stipulation, subject to the following modifications:<sup>19</sup>

- a. Rule 22, Appendix II ("Technical Specifications for Customer Self-Supply Systems") technical specifications regarding "Non-Export Requirements," set forth on Sheet No. 44B-1, shall include the following modifications:

The Generating Facility shall be designed to minimize the transfer of electrical energy from the Generating Facility to the utility. ~~Under no circumstances, except during emergency conditions where Advanced Inverter functions, including functions that result in energy export, may be provided pursuant to Rule 14H and this Agreement, shall~~ The Generating Facility shall not Inadvertently Export electrical energy across the Point of Interconnection, except during emergency conditions where Advanced Inverter functions, including functions that result in energy export, shall be provided pursuant to Rule 14H and this Agreement. In any situation in which Rule 22 conflicts with Rule 14H regarding energy export, Rule 14H controls. Inadvertent Export is the unscheduled and uncompensated export of real power from the Generating Facility for a duration exceeding 30 seconds. In order to qualify as a Self-Supply System under the Company's Customer Self-Supply tariff, the Generating Facility must utilize one or more of the following options:

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<sup>19</sup>Language that has been removed by the commission is indicated with a strikeout, and language that the commission has added is underlined. The commission's modifications in this Order alter the Parties' proposed, updated Rule 22 and Rule 14H language, as set forth in the Stipulation.

- b. Rule 22, Appendix II ("Technical Specifications for Customer Self-Supply Systems") technical specifications regarding "Non-Export Requirements: Option 5 (Advanced Inverter Functionality) - 2) Cease to Energize," continued from Sheet No. 44B-2, shall include the following language, underlined below:

Any amount of export of real power across the Point of Interconnection lasting longer than 30 seconds for any single event shall result in a trip of the Customer's Generating Facility within two (2) seconds of exceeding the 30 second duration limit, except during emergency conditions where Advanced Inverter functions, including functions that result in energy export, shall be provided pursuant to Rule 14H and this Agreement. In any situation in which Rule 22 conflicts with Rule 14H regarding energy export, Rule 14H controls. The event reconnection time limit will be a minimum of five (5) minutes, unless otherwise directed by the Company, pursuant to Rule 14, Paragraph H, Appendix I, Required Delay on Reconnection.

- c. Rule 22, Appendix II ("Technical Specifications for Customer Self-Supply Systems") technical specifications regarding "Advanced Inverter Requirements to Provide Grid Support," continued from Sheet No. 44B-2, shall include the following language, underlined below:

The Generating Facility shall comply with the Advanced Inverter requirements set forth in Rule 14, Paragraph H, Appendix I (Advanced Inverter Generating Facility Design and Operating Requirements). In any situation in which Rule 22 conflicts with Rule 14H regarding energy export, Rule 14H controls.

3. The aforementioned modifications reflect the commission's intention that "[t]he self-supply option [] not [] limit export of power when such export would provide grid-supportive benefits."<sup>20</sup>

4. The commission approves as just and reasonable the Parties' proposed revisions to Rule 14H, as set forth in Stipulation Exhibit B.

5. The commission approves as just and reasonable the Parties' proposed revisions to Rule 14H, as set forth in Stipulation Exhibit C, with the following modification:

- a. Rule 14H, Appendix III ("Interconnection Process Overview") regarding "(1) Expedited Review for Self-Supply Systems," on Revised Sheet No. 34D-4, shall be modified to include the following language, underlined below:

Interconnection Applications for Customer Self-Supply Systems under Company's Rule 22 (Customer Self-Supply) that will not export power across the Point of Interconnection, except as allowed under Rule 22 and as

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<sup>20</sup>Order No. 33258, at 123.

required under this Rule 14H, shall qualify for expedited interconnection.

III.

Orders

THE COMMISSION ORDERS:

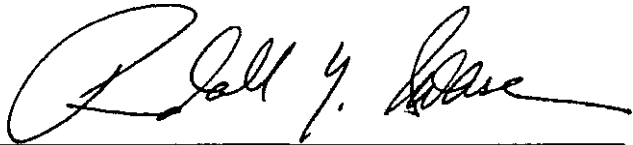
1. The stipulated revisions to Rule 22 and Rule 14H, as reflected in the Stipulation for Proposed Revisions to Rule No. 14H Interconnection of Distributed Generation Facilities, and Rule No. 22 Customer Self-Supply, filed on May 2, 2016, are approved, subject to the commission's modifications set forth in Section III, Findings and Conclusions, above.

2. By July 18, 2016, the Companies shall file a non-docketed, thirty-day notice transmittal, which incorporates the commission-approved revisions to Rule 22 and Rule 14H: (A) in black-lined and clean formats; and (B) with the applicable issued and effective dates. Unless instructed otherwise by the commission, the commission-approved revisions to Rule 22 and Rule 14H shall take effect upon the expiration of the thirty-day notice period set forth in Hawaii Revised Statutes § 269-16(b) and Hawaii Administrative Rules § 6-61-111.

3. The failure to comply with the requirement noted in Ordering Paragraph No. 2, above, may constitute cause to void this Decision and Order, and may result in further regulatory action as authorized by State law.

DONE at Honolulu, Hawaii JUL 11 2016.


PUBLIC UTILITIES COMMISSION  
OF THE STATE OF HAWAII

By   
Randall Y. Iwase, Chair

By   
Lorraine H. Akiba, Commissioner

By   
Thomas C. Gorak, Commissioner

APPROVED AS TO FORM:

  
Caroline C. Ishida  
Commission Counsel

2014-0192.ljk

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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