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PUBLIC UTILITIES
COMMISSION

December 26, 2018

Mr. Randall Y. Iwase
Chair
The Hawaii Public Utilities Commission
Kekuanao'a Building, Room 103
465 South King Street
Honolulu, HI 96813

Re: Kauai Island Utility Cooperative 2018 Annual Report Pursuant to Hawaii Public Utilities Commission General Order No. 7, Decision and Order No. 10687 in Docket No. 6606, and Decision and Order No. 21001 in Docket No. 03-0256.

Dear Mr. Iwase:

Please find enclosed an original and eight (8) copies of the following reports pursuant to Hawaii Public Utilities Commission General Order No. 7, Decision and Order No. 10687 in Docket No. 6606, and Decision and Order No. 21001 in Docket No. 03-0256:

1. Capital Improvements Program for Ensuing Five Years
2. Adequacy of Supply Statement
3. Personnel To Be Contacted
4. Power System Map

Very truly yours,

A handwritten signature in black ink, appearing to read "Michael V. Yamane".

Michael V. Yamane, P.E.
Chief of Operations

Enclosures

cc: Division of Consumer Advocacy (3)
Kent Morihara

2019 Adequacy of Supply Statement

Kaua'i Island Utility Cooperative

2019 Adequacy of Supply Statement

Background

As footnoted by Kauai Island Utility Cooperative (KIUC) in its 2008 Adequacy of Supply Statement, KIUC filed a Petition with the Commission on December 20, 2007 in Docket No. 2007-0418 seeking a declaratory order clarifying and/or authorizing KIUC's adequacy of supply/reserve margin requirement/criteria.

By Decision and Order No. 24078 issued on March 6, 2008, on page 13, the Commission ordered and declared that:

KIUC's adequacy of supply/reserve margin, on a going forward basis, should be based on KIUC having sufficient reserve capacity available to meet its: (1) evening peak load with its largest generator unit out for any reason; and (2) morning peak load with its largest generator unit out for any reason plus its third largest generator unit out for scheduled maintenance.

Pursuant to the above, KIUC has included in this annual filing a statement for both criteria (i.e., evening peak load and morning peak load). In doing so, instead of utilizing the generating unit's nameplate rating, KIUC has determined each generation unit's ability to contribute generation capacity to KIUC's system by the unit's net output (i.e., input to KIUC's system), which includes compensation for ancillary or station power loads, and the actual achievable output of the unit.¹

¹ The actual achievable output of a generating unit may materially differ from the unit's nameplate rating depending on many factors including age, operational constraints, etc. As such, in order to determine KIUC's ability to provide sufficient generation to meet its loads, KIUC believes it is more appropriate to conduct its analysis based on the net output of its generating units instead of the nameplate ratings of the units.

KIUC's Available Generating Capacity for 2019

KIUC's 2019 available generating capacity is as follows:

<u>Generating Unit</u>	<u>Net Peak Capacity (kW)</u>
Gas Turbine No. 1	17,500 @80 F
Gas Turbine No. 2	22,600 @80 F
Steam No. 1	9,000
Diesel #1	1,750
Diesel #2	1,750
Diesel #3	2,500
Diesel #4	1,750
Diesel #5	2,500
Diesel #6	7,600
Diesel #7	7,600
Diesel #8	7,600
Diesel #9	7,600
Kapaia Power Station	26,600 @80 F
Green Energy Team Biomass	6,700
Kapaia Solar and Storage	13,000
AES Lawai Solar and Storage	20,000
TOTAL	<u>156,050</u>

Adequacy of Supply Statement – Criteria One
Evening Peak Criteria

KIUC's 2019 system generating capacity and total firm peak system demand are estimated as follows:

<u>Generating Unit</u>	<u>Net Peak Capacity (kW)</u>
Gas Turbine No. 1	17,500
Gas Turbine No. 2	22,600
Steam No. 1	9,000
Diesel #1	1,750
Diesel #2	1,750
Diesel #3	2,500
Diesel #4	1,750
Diesel #5	2,500
Diesel #6	7,600
Diesel #7	7,600
Diesel #8	7,600
Diesel #9	7,600
Kapaia Power Station	26,600
Green Energy Team Biomass	6,700
Kapaia Solar and Storage	13,000
AES Lawai Solar and Storage	20,000
System Total KW	156,050
Less largest unit (Kapaia Power Station)	<u>(26,600)</u>
Capacity, largest unit out of service	129,450 kW
2019 estimated total firm evening peak	76,190 kW
Capacity Less Evening Peak (i.e. evening criteria met)	53,260 kW

Adequacy of Supply Statement – Criteria Two
Morning Peak Criteria

KIUC's 2019 system generating capacity and morning firm peak system demand are estimated as follows:

	<u>Net Peak Capacity, kW</u>
Gas Turbine No. 1	17,500
Gas Turbine No. 2	22,600
Steam No. 1	9,000
Diesel #1	1,750
Diesel #2	1,750
Diesel #3	2,500
Diesel #4	1,750
Diesel #5	2,500
Diesel #6	7,600
Diesel #7	7,600
Diesel #8	7,600
Diesel #9	7,600
Kapaia Power Station	26,600
Green Energy Team Biomass	6,700
Kapaia Solar and Storage	13,000
AES Lawai Solar and Storage	20,000
System Total KW	156,050
Less largest unit (Kapaia Power Station)	(26,600)
Less 3 rd largest unit (GT-1)	<u>(17,500)</u> kW
Capacity, 1 st and 3 rd largest units out	111,950 kW
2019 estimated off-season morning peak ²	65,650 kW
Capacity Less Morning Peak (i.e., morning criteria met)	46,300 kW

² As noted above, the morning peak criteria requires KIUC to meet its morning peak load with its largest generator unit out for any reason plus its third largest generator unit out for scheduled maintenance (emphasis added). Because this criteria assumes KIUC's ability to take its third largest generating unit out on a scheduled maintenance basis (as compared to an unexpected maintenance or repair situation), KIUC has applied its off-season morning peak amounts to correspond to when KIUC would take down a unit down for scheduled maintenance.