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PUBLIC UTILITIES  
COMMISSION

March 27, 2018

The Honorable Chair and Members of the  
Hawaii Public Utilities Commission  
465 South King Street  
Kekuanaoa Building, Room 103  
Honolulu, HI 96813

Re: Docket No. 2007-0008 – In the Matter of Public Utilities  
Commission Instituting a Proceeding to Examine Hawaii's  
Renewable Portfolio Standards Law, Hawaii Revised Statutes  
("HRS") §§ 269-91 – 269-95, as Amended by Act 162, Session  
Laws of Hawaii 2006: Kauai Island Utility Cooperative's ("KIUC's")  
2017 Annual Renewable Portfolio Standards ("RPS") Status Report

Dear Commissioners and Commission Staff:

Please find enclosed KIUC's Annual RPS Status Report for the year ending  
December 31, 2017 ("2017 RPS Report").

As shown in the attached 2017 RPS Report, renewable energy resources and  
energy savings supplied 44.36% of KIUC's net electricity sales during the 2017 calendar  
year. This exceeds the year 2017 RPS goal of 30.0% to be achieved by each electric  
utility as established by HRS § 269-92(a)(1), as amended.

The attached 2017 RPS Report also includes a breakdown of the renewable  
energy resources on Kauai comprising the 44.36% RPS for 2017 and the RPS reached  
in 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015 and 2016. Also  
included in said report is a discussion of KIUC's commitment to continue to increase the  
growth of renewable energy and energy savings on Kauai.

*The power of human connections.*  
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*KIUC is an equal opportunity provider and employer.*

We thank you for your consideration of this matter. If you should have any questions concerning this report, please call me at (808) 246-8208.

Very truly yours,



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

Enclosure

cc: Kent Morihara  
Consumer Advocate (3)  
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# Kauai Island Utility Cooperative Renewable Portfolio Standards (RPS) Status Report Year Ending December 31, 2017

## KIUC RPS Results for 2017

Kauai Island Utility Cooperative (KIUC or Company) achieved a Renewable Portfolio Standard (RPS) percentage of 44.36% for calendar year 2017. This exceeds the State of Hawaii's 2020 RPS requirement of meeting 30% of KIUC's net electricity sales with electrical energy generated and/or displaced by renewable resources.<sup>1</sup> All of KIUC's 2017 RPS of 44.36% was met by electrical energy generated using renewable energy as the source.<sup>2</sup>

KIUC met the electrical energy needs of its customers with a combination of Company-owned fossil fueled generation, Company-owned renewable generation, and both non-firm and firm renewable power purchases.<sup>3</sup> In addition to this generated electricity, Photovoltaic (PV) systems and Demand Side Management (DSM) measures, including Solar Water Heating (SWH), also supplied some of KIUC consumers' energy needs, while at the same time, displacing fossil-fuel generated power. As of January 1, 2015, these sources are no longer counted toward KIUC's RPS. The portion of the RPS met by electrical energy generated using renewable energy as the source was 197,444 megawatt-hours (MWh), which is greater than the 2020 30% RPS requirement of 133,529 MWh.<sup>4</sup> Exhibit A, attached hereto, illustrates how KIUC met the energy needs of its approximately 37,000 accounts.

KIUC's 2017 RPS percentage of 44.36% is 2.70% more than KIUC's 2016 RPS percentage of 41.66%. This is due to the following:

1. The addition of the 13.0 MWac SolarCity / Tesla Solar and Storage project, which achieved In-Service on May 26, 2017.
2. Significant addition of customer-sited solar systems.

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<sup>1</sup> Hawaii Revised Statutes (HRS) § 269-92(a)(3).

<sup>2</sup> See HRS § 269-92(b).

<sup>3</sup> KIUC has eleven non-firm power purchase contracts to purchase electrical power from: Gay & Robinson (G&R) (hydro), McBryde Resources (hydro), Kekaha Agriculture Association (KAA) (hydro), Green Energy Team (hydro), Pioneer Seed (solar), Kapaa Solar (solar), McBryde Resources (solar), MP2 Hawaii (solar), KRS2 Koloa (solar), KRS1 Anahola (solar), and SolarCity / Tesla (solar and storage). KIUC also has one firm purchase power contract, Green Energy Team (biomass).

<sup>4</sup> 133,529 MWh is 30% of KIUC's 2017 sales of 445,098 MWh.

## **KIUC Future RPS Activities**

While KIUC has already exceeded the 2020 and 2030 RPS goals of 30% and 40%, respectively, the Company is committed to even further increasing the growth of renewable energy and energy savings. To accomplish this, KIUC is undertaking the following:

1. On May 26, 2017, the SolarCity / Tesla solar and storage project achieved COD. This facility is expected to increase KIUC's annual RPS by about one percentage point in its first full year of production (i.e. to approximately 46% in 2018).
2. On July 3, 2014, KIUC signed a PPA with Gay & Robinson for the purchase of electricity generated from a new hydroelectric facility. The Commission approved the PPA on March 14, 2016. The project began construction in 2017 and is expected to be in service in late 2018 or early 2019. This facility, given a full year of production in 2019, is expected to increase KIUC's annual RPS by about five percentage points (i.e. to approximately 51% in 2019).
3. On December 30, 2016, KIUC signed a PPA with AES Distributed Energy for the purchase of electricity from a new solar and battery facility to be located in Lawai. The Commission approved the PPA on July 28, 2017 and the facility is expected to achieve COD before the end of 2018. This facility, given a full year of production in 2019, is expected to increase KIUC's annual RPS by about eleven percentage points (i.e. to approximately 62% in 2019).
4. On September 29, 2017, KIUC signed a PPA with AES Distributed Energy for the purchase of electricity from a new solar and battery facility to be located at Pacific Missile Range Facility (PMRF). If the Commission approves this PPA, the project is expected to achieve COD before the end of 2019. This facility, given a full year of production in 2020, is expected to increase KIUC's annual RPS by eight percentage points (i.e. to approximately 70% in 2020).
5. KIUC continues its efforts in securing a long-term water lease from the Department of Land and Natural Resources for the Waiahi hydro-electric facilities, to ensure that existing hydroelectric resources continue to contribute to KIUC's RPS.
6. KIUC continues its efforts in securing a long-term water lease from the Department of Land and Natural Resources and Department of Hawaiian Homelands for a new West Side hydro-electric facility that, if successful, could provide an additional ten to twenty percentage points toward KIUC's annual RPS when it comes online.
7. In addition to large utility-scale renewable energy projects, KIUC also recognizes the importance of small-scale PV, SWH, and DSM systems,

despite not being able to count these projects toward future RPS goals. To this end, KIUC is also continuing its residential energy efficiency programs, commercial retrofit program, and its SWH programs.

## **Conclusion**

KIUC's 2017 RPS percentage of 44.36% surpasses the 30% by 2020 RPS requirement by 14.36% and the 40% by 2030 RPS requirement by 4.36%. With current renewable energy sources and the future activities identified above, KIUC is on target to exceed the next RPS requirement of 70% by 2040. KIUC recognizes the benefits that renewable energy and energy savings provide to the visitors, residents, and commercial sectors of Kauai, as well as the positive impacts on global environmental, societal, and economic issues. As such, KIUC will continue to evaluate, promote, and incorporate renewable energy and energy savings to meet the needs of its members, the Kauai community, and the State.

**Exhibit A**

KIUC RPS Status Report	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	MWh	MWh	MWh	MWh	MWh	MWh	MWh	MWh	MWh	MWh	MWh	MWh	MWh
1. Net Fossil Generation	413,355	419,451	441,154	417,986	399,325	400,307	392,689	389,180	376,778	360,103	335,162	279,451	276,387
2. Net Renewable Generation / Electrical Energy Generated Using Renewable Energy As Source <sup>1</sup>													
KIUC Hydro	4,232	4,561	926	7,968	7,454	7,896	6,974	7,591	8,063	7,598	6,961	6,904	6,455
Gay & Robinson Hydro	3,501	3,921	2,845	2,385	3,574	3,450	4,871	4,142	3,355	2,878	3,051	4,183	3,547
Kauai Coffee Hydro	26,292	25,613	20,612	22,149	21,756	18,296	21,208	23,038	18,501	18,693	19,566	19,263	19,010
KAA Hydro	3,466	3,024	2,079	3,106	4,141	4,374	5,457	3,775	3,154	4,922	3,915	3,804	1,637
Green Energy Hydro					5	189	407	366	278	200	153	147	106
Pioneer Solar							21	23	22	372	434	435	435
Kapaa Solar							1,468	1,858	1,827	1,759	1,787	1,802	1,826
MP2 Kaneshiro Solar									530	535	547	550	547
McBryde Solar									11,945	11,393	10,772	10,260	10,612
KRS2 Koloa Solar										10,042	20,654	21,604	20,934
KRS1 Anahola Solar											6,456	20,275	20,662
Green Energy Biomass											5,465	49,656	46,192
SolarCity / Tesla Solar and Storage													14,486
NEM											1,256	1,247	1,245
NEM Pilot											3,601	5,595	5,909
Larger Systems (No Buyback)											6,912	6,970	8,438
Schedule Q											26,497	30,209	35,402
<b>Total</b>	<b>37,491</b>	<b>37,120</b>	<b>26,462</b>	<b>35,607</b>	<b>36,930</b>	<b>34,205</b>	<b>40,407</b>	<b>40,793</b>	<b>47,674</b>	<b>58,392</b>	<b>118,026</b>	<b>182,904</b>	<b>197,444</b>
3. Electrical Energy Savings <sup>2</sup>													
From Renewable Displacement or Off-Set Technologies <sup>3</sup>													
Customer Renewable Generation (own use)	121	153	268	1,712	3,316	4,499	5,176	6,925	11,710	16,810	0	0	0
From Use of Energy Efficiency Technologies <sup>4</sup>													
Demand Side Management (DSM)	20,855	21,349	21,361	19,233	19,217	16,911	18,264	24,368	22,441	21,370	19,947	33,549	34,900
<b>Total</b>	<b>20,976</b>	<b>21,502</b>	<b>21,629</b>	<b>20,945</b>	<b>22,533</b>	<b>21,410</b>	<b>23,440</b>	<b>31,293</b>	<b>34,151</b>	<b>38,180</b>	<b>19,947</b>	<b>33,549</b>	<b>34,900</b>
4 Total Sales / Total Electrical Energy Sales / Net Electricity Sales <sup>5</sup>	448,611	452,080	466,896	453,791	436,273	434,533	434,745	433,159	431,478	429,924	432,078	439,088	445,098
Total Renewable Electrical Energy (2015 & after: Item 2 Total; pre-2015: Item 2 Total + Item 3 Total)	58,467	58,622	48,091	56,552	59,463	55,615	63,847	72,086	81,825	96,572	118,026	182,904	197,444
<b>Total / RPS Percentage (Item 5 / Item 4)</b>	<b>13.03%</b>	<b>12.97%</b>	<b>10.30%</b>	<b>12.46%</b>	<b>13.63%</b>	<b>12.80%</b>	<b>14.69%</b>	<b>16.64%</b>	<b>18.96%</b>	<b>22.46%</b>	<b>27.32%</b>	<b>41.66%</b>	<b>44.36%</b>
<b>Percent of Net Electricity Sales supplied by Item 2 Above</b>	<b>8.36%</b>	<b>8.21%</b>	<b>5.67%</b>	<b>7.85%</b>	<b>8.46%</b>	<b>7.87%</b>	<b>9.29%</b>	<b>9.42%</b>	<b>11.05%</b>	<b>13.58%</b>	<b>27.32%</b>	<b>41.66%</b>	<b>44.36%</b>
<b>Percent of Net Electricity Sales supplied by Item 3 Above</b>	<b>4.68%</b>	<b>4.76%</b>	<b>4.63%</b>	<b>4.62%</b>	<b>5.16%</b>	<b>4.93%</b>	<b>5.39%</b>	<b>7.22%</b>	<b>7.91%</b>	<b>8.88%</b>	<b>4.62%</b>	<b>7.64%</b>	<b>7.84%</b>

<sup>1</sup> Renewable electrical energy generated via power purchase agreements with independent power producers is based on recorded data of the energy generated from the power producer facility, which is typically the net electricity energy sold to the utility, adjusted downward for system losses. Pursuant to the definition of "renewable electrical energy" under HRS Section 269-91, beginning January 1, 2015, this includes customer-sited, grid-connected renewable energy generation (e.g., net energy metering, Schedule Q).

<sup>2</sup> Pursuant to HRS Section 269-92(b)(2), beginning January 1, 2015, electrical energy savings shall not count toward the RPS.

<sup>3</sup> Pursuant to HRS Section 269-91, under the definition of "Renewable electrical energy," these types of technologies include solar water heating, sea-water air-conditioning district cooling systems, solar air-conditioning, and (up until, but not on or after January 1, 2015) customer-sited, grid-connected renewable energy systems.

Pursuant to Section III.A.3. of the RPS Framework: "Electrical energy savings brought about by the use of renewable displacement or off-set technologies shall be determined using actual recorded energy produced by the displacement or off-set technologies, if that information is available to the utility, and the corresponding estimated electrical savings. Where the recorded energy produced by the displacement or off-set technologies is not available to the utility, as in the case of customer-sited renewable energy systems, the utility may make reasonable estimates of the energy produced by such systems, and provide an explanation of the calculation of the estimates. The electrical energy savings shall be expressed at a comparable level to the electrical energy generated using renewable energy sources (i.e., at the net generation level)."

<sup>4</sup> Pursuant to HRS Section 269-91, under the definition of "Renewable electrical energy," energy efficiency technologies include heat pump water heating, ice storage, ratepayer-funded energy efficiency programs, and use of rejected heat from co-generation and combined heat and power systems, excluding fossil-fueled qualifying facilities that sell electricity to electric utility companies and central station power projects.

Pursuant to Section III.A.4. of the RPS Framework: "Electrical energy savings brought about by the use of energy efficiency technologies shall be determined using the actual gross energy savings (i.e., gross of (including) free-riders) reported by the utility or third-party DSM administrator in its annual DSM program report to the Commission excluding any electrical energy savings brought about by the use of renewable displacement or off-set technologies. The electrical energy savings shall be expressed at a comparable level to the electrical energy generated using renewable energy sources (i.e., at the net generation level)."

<sup>5</sup> Pursuant to Section I of the RPS Framework "total electrical energy sales" or "net electricity sales" means the total MWhs of electrical energy sold by a utility to its customers during a given year. KIUC notes that Item 1 (Net Fossil Generation) plus Item 2 (Net Renewable Generation) does not equal Item 4 (Net Electricity Sales). This is because prior to January 1, 2015, and as required by HRS § 269-91, Item 2 (Net Renewable Generation) did not include customer-sited, grid-connected renewable energy generation. Beginning January 1, 2015, Item 2 (Net Renewable Generation) includes customer-sited, grid-connected renewable energy generation, including exported energy and behind-the-meter energy. KIUC's sales of such customer-sited, grid-connected renewable energy generation (i.e. only the exported portion) are included in Item 4 (Net Electricity Sales).