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January 30, 2018

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

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PUBLIC UTILITIES  
COMMISSION

Dear Commissioners:

Subject: Docket No. 2014-0135 – GEMS Program Quarterly Report

The Hawaii Green Infrastructure Authority respectfully submits this Green Energy Market Securitization Program Quarterly Report for the period of October 1, 2017 to December 31, 2017. This report fulfills the requirement for Quarterly Reports as specified in Decision and Order No. 32318, filed on September 30, 2014 in Docket No. 2014-0135.

As always, should you have any questions or if I can be of assistance to you, please do not hesitate to contact me.

Sincerely,

Gwen S. Yamamoto Lau  
Executive Director

Attachment

cc: Service List



**State of Hawaii**

**Hawaii Green Infrastructure Authority**

**GREEN ENERGY MARKET SECURITIZATION PROGRAM**

**QUARTERLY REPORT:**

**October 1, 2017 – December 31, 2017**

REPORT TO THE  
STATE OF HAWAII  
PUBLIC UTILITIES COMMISSION

Pursuant to  
Decision and Order No. 32318 filed in Docket No. 2014-0135

**January 2018**

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# 1 Introduction and Context

The Green Infrastructure Loan Program (a.k.a. the “Green Energy Market Securitization Program,” “GEMS Program” or “Program”) leverages public-private capital to deploy clean energy infrastructure that will contribute towards Hawaii’s pursuit of its statutory 100% clean energy goals by 2045 while helping ratepayers lower their energy costs. The GEMS Program is the result of Act 211, Session Laws of Hawaii 2013 (“Act 211”), which created the framework for establishing the GEMS Program, including its oversight, governance, and reporting processes. The Program is governed by the Hawaii Green Infrastructure Authority which consists of five members: The Director of Business, Economic Development, and Tourism, the Director of Finance, the Energy Program Administrator, and two members appointed by the Governor with the advice and consent of the Hawaii State Senate.

## 1.1 Procedural History and Reporting Requirements

The State of Hawaii Public Utilities Commission (“Commission” or “PUC”) issued Decision and Order No. 32318<sup>1</sup> (the “Program Order”), which approved the “Application of the Department of Business, Economic Development, and Tourism for an Order Approving the Green Infrastructure Loan Program,”<sup>2</sup> (“Application”) for the Hawaii Green Infrastructure Authority (“Authority” or “HGIA”).<sup>3</sup> The Application requested, and the Program Order approved, the use of funds deposited in the Green Infrastructure Special Fund to establish and institute the GEMS Program, subject to the modifications described within the Program Order.<sup>4</sup> In addition to complying with reporting requirements mandated by Act 211, the Authority proposed providing the Commission with Quarterly Reports which offer a snapshot of program activities as a part of the Application.<sup>5</sup> The Commission approved the quarterly reporting proposal made by the Authority, adding additional requirements that arose during the docket process, including one from the Consumer Advocate<sup>6</sup> that included requirements concerning the financing of utility-scale projects, when applicable.<sup>7</sup>

The Commission’s approval of the Quarterly Report process, with modifications, stated that Quarterly Reports must provide information on the progress of the GEMS Program development and include, at a minimum:

- (1) All information proposed in [the] Application or as otherwise indicated by DBEDT in the course of this proceeding to be included in Quarterly Reports;

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<sup>1</sup> Filed on September 30, 2014 in Docket No. 2014-0135

<sup>2</sup> Filed on June 6, 2014 in Docket No. 2014-0135

<sup>3</sup> HRS §196-63 provides that until the Authority is duly constituted, the Department of Business, Economic Development, and Tourism of the State of Hawaii (DBEDT) may exercise all powers reserved to the Authority pursuant to HRS §196-64, and shall perform all responsibilities of the Authority. As the Authority has now been duly constituted, the Authority assumes in its own right, pursuant to statute, all of the functions, powers, and obligations, including responsive or informational submissions in this Docket, which had heretofore been assigned to DBEDT.

<sup>4</sup> See “Decision and Order No. 32318,” filed in Docket No. 2014-0135 on September 30, 2014, at p. 1.

<sup>5</sup> See “Application of Department of Business, Economic Development, and Tourism; Verification; Exhibits; and Certificate of Service,” filed in Docket No. 2014-0135 on June 6, 2014 at p. 17.

<sup>6</sup> “Consumer Advocate” refers to the Division of Consumer Advocacy of the Department of Commerce and Consumer Affairs of the State of Hawaii.

<sup>7</sup> See “Decision and Order No. 32318,” filed in Docket No. 2014-0135 on September 30, 2014, at p. 93.

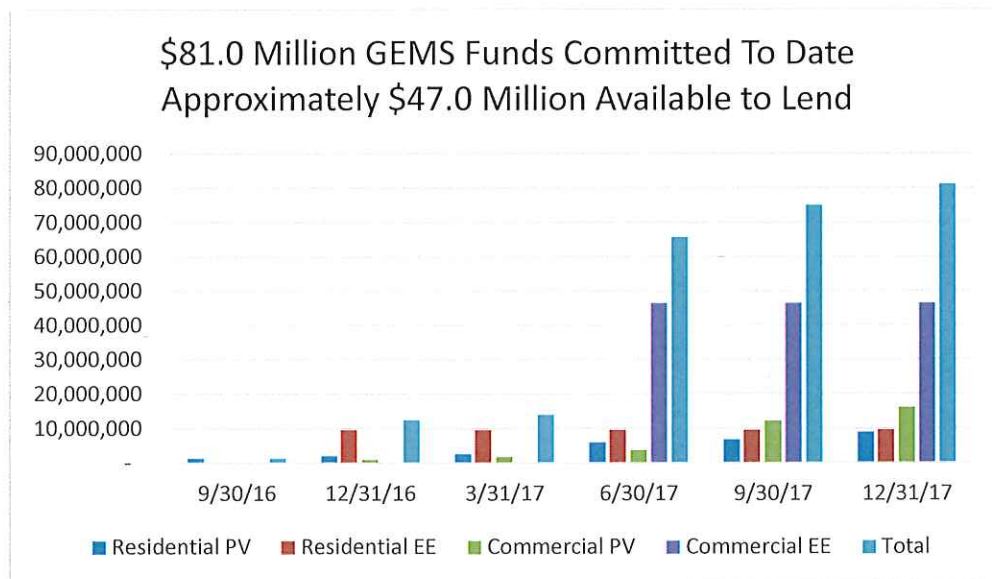


- (2) Summaries of all metrics approved pursuant to [the] Program Order, and as developed and approved through the metrics and data collection development process;
- (3) Accumulated year-to-date tallies of quantitative, and to the extent possible, non-quantitative metrics provided in preceding Quarterly Reports for the applicable annual reporting period;
- (4) Any additional information required by this Program Order to be included as part of one or more Quarterly Reports; and
- (5) Actuals to date as compared to the immediately preceding Annual Plan budget.<sup>8</sup>

In the Application, the Authority proposed Quarterly Reports include a snapshot of program activities, provide a financial summary, and address adjustments planned or made to the GEMS Program to accommodate market changes.<sup>9</sup> The Authority submitted its first Quarterly Report for the period of October 1, 2014 to December 31, 2014 on January 30, 2015. More information about the procedural background for the GEMS Program can be found in the various filings in Docket No. 2014-0135 on the Commission's website: <http://dms.puc.hawaii.gov/dms/>.

## 1.2 Overview of Program Status and Market Outlook

During the quarter, the Authority continued to approve, commit and deploy capital under its Residential PV, Consumer Lease, Commercial PV and Commercial Energy Efficiency (i.e. Department of Education) loan products. As of December 31, 2017, approximately \$81.0 million or 55.5% of GEMS funds have been committed, leaving approximately \$47.0 million available to lend. Please refer to sections 2.2, 2.3, 2.4 and 2.6 for additional information.



Another significant milestone achieved by the Authority as of December 31, 2017, is posting a \$705,000 Excess Revenues over Expenditures for the first six months in Fiscal 2018. Please refer to the Financial Summary in Section 4 for more details.

<sup>8</sup> See "Decision and Order No. 32318," filed in Docket No. 2014-0135 on September 30, 2014, at p. 97.

<sup>9</sup> See "Application of Department of Business, Economic Development, and Tourism; Verification; Exhibits; and Certificate of Service," filed in Docket No. 2014-0135 on June 6, 2014 at p. 17.

With the Commission's Decision and Order No. 35137 filed on December 22, 2017 in Docket No. 2015-0389 adopting the Community-Based Renewable Energy: A Program Framework; as well as the Commission's Order No. 35185 filed on January 5, 2018 in Docket No. 2014-0135 providing clear guidance regarding the on-bill repayment mechanism, coupled with the significant progress the GEMS Program has made over the past year, as depicted by the graph above, the future market outlook looks positive.

## 2 Summary of Program Activities

The following is a summary of the activities that have occurred between October 1, 2017 and December 31, 2017.

### 2.1 Administration

The following activities pertain to the administration of the GEMS Program:

- **Motion for Modification.** On October 12, 2017, the Commission filed Order No. 34864 denying the Authority's Motion for Modification and declining to suspend the Program Notification/Modification process as requested by the Stipulation filed on August 31, 2017.
- **Board Meeting.** The Authority held a board meeting on October 23, 2017, at which it approved HGIA's Quarterly Report for the period ended September 30, 2017.
- **Quarterly Report.** The Quarterly Report covering the period of July 1, 2017 to September 30, 2017 was filed with the Commission on October 25, 2017 in Docket No. 2014-0135.
- **Changing the Priority of Uses of GEMS Program Loan Repayments.** On October 26, 2017, the Commission filed Order No. 34930 Amending Decision and Order No. 32318 By Changing the Priority of Uses of GEMS Program Loan Repayments in Docket No. 2014-0135. This Order amends the order of the loan repayments received to be applied first toward the replenishment of the reduced Public Benefits Fee collections before the payment of GEMS Program administrative costs. As the Authority is not supported by General Funds, and as loan administration and servicing will continue over the life of the loans, this Order requires the Authority to set aside and reserve a portion of the GEMS funds to ensure proper administration and servicing until all of the loans are paid in full.
- **Board Meeting.** The Authority held a board meeting on December 8, 2017, at which it approved HGIA's 2017 Report to the Governor and Legislature as well as enhancements to the Residential Loan Program and participating contractor eligibility criteria. The board also accepted HGIA's 2017 Audit report for the fiscal year ended June 30, 2017, and approved changes to the Residential PV Loan Product, including an enhanced underwriting option for system sizes larger than historical energy consumption, allowing progress payments with an interest only option for six months and a corresponding 19.5-year amortization, and revising the criteria to qualify as a GEMS Approved Installer to better match the requirements of Hawaii Energy's Participating Contractor program.



## 2.2 Status of Programs: Residential PV

At a glance (as of 12/31/17) from program inception:

<b>WECC Originated</b>	<b>Applications Received</b>	<b>In Process<sup>10</sup></b>	<b>Committed<sup>11</sup></b>	<b>Funded</b>
# of loans	427	18	40	98
\$ value of loans	n/a	n/a	\$1,615,290	\$3,200,989
<b>HGIA Originated (Effective 11/9/17)</b>	<b>Applications Received</b>	<b>In Process<sup>12</sup></b>	<b>Committed<sup>13</sup></b>	<b>Funded</b>
# of loans	12	11	0	0
\$ value of loans	n/a	n/a	\$0.00	\$0.00

In an effort to further control costs while providing more flexibility, improved customer service and increased marketing efforts with the Program's Approved Installers, the Authority terminated its contract with the Wisconsin Energy Conservation Corporation ("WECC"), its residential loan originator effective December 31, 2017 and began accepting direct loan applications on November 9, 2017. In 2015 when the Authority contracted with WECC, it expected to purchase \$50.0 million in residential PV loans from WECC. However, due to unforeseen challenges, including a significant time difference and circumstances unique to Hawaii, the partnership has not met initial expectations.

<b>Consumer Leases (PN #10)</b>	<b>Applications Received</b>	<b>In Process<sup>14</sup></b>	<b>Committed<sup>15</sup></b>	<b>Funded</b>
# of loans	30	0	22	8
\$ value of loans	n/a	n/a	\$500,486	\$100,116
			2,399,398 <sup>16</sup>	

During the quarter, the Authority also began deploying capital under its Consumer Lease program (Program Notification No. 10).

While Authority continues to receive Residential PV loan applications, the long-term growth prospects of the program remain limited by the broader market environment without the ability to finance storage.

Delinquent Status as of December 31, 2017:

<b>Loan Balance</b>	<b>Current</b>	<b>%</b>	<b>31 – 60 Days*</b>	<b>%</b>	<b>61 – 90 Days*</b>	<b>%</b>	<b>91+ Days</b>	<b>%</b>
\$3,122,534	\$3,098,192	99.2%	\$206.12	0.1%	\$0.00	0.0%	\$24,136	0.7%
No.: 98	96	98.0%	1	1.0%	0	0.0%	1	1.0%

\* HGIA's Loan Servicer provides collection services.

<sup>10</sup> This category includes loan that being processed and/or pending additional information.

<sup>11</sup> Includes loans that have been approved with executed Loan Documents and solar systems in the process of being installed.

<sup>12</sup> This category includes loan that being processed and/or pending additional information.

<sup>13</sup> Includes loans that have been approved with executed Loan Documents and solar systems in the process of being installed.

<sup>14</sup> This category includes requests being processed and/or pending additional information.

<sup>15</sup> Includes loans that have been approved with executed Loan Documents and solar systems in the process of being installed.

<sup>16</sup> GEMS funds committed to three borrowers who are in the process of sourcing consumer PV leases.

## 2.3 Status of Programs: Commercial PV

At a glance (as of 12/31/17) from program inception:

	<b>Applications Received</b>	<b>In Process<sup>17</sup></b>	<b>Committed<sup>18</sup></b>	<b>Funded<sup>19</sup></b>
# of loans	24	2	15	13
\$ value of loans	n/a	n/a	\$11,077,440	\$5,082,136

The market continues to respond positively to the Program's commercial loan products. An important distinction between the Residential and Commercial loan portfolios is the commercial product leverages private investments (via conventional bank financing and/or borrower's equity). As of December 31, 2017, \$16.2 million in GEMS funds is facilitating almost \$33.8 million in total projects for nonprofits, small businesses and multi-family rental projects.

Kahauiki Village. On October 5, 2017, the Authority submitted a request for Commission approval to finance Kahauiki Village, an innovative solution to providing permanent housing for low-income families, upon proper underwriting and loan approvals, during the design, development and construction phase even though the project may not be grid-tied, with the understanding that the project will eventually be connected to the grid.

On October 10, 2017, the Commission filed Order No. 34861 allowing the Authority to finance said project, upon proper underwriting and loan approvals. The Order further requires the Authority to file, within sixty (60) days of the filing date of the Order, the final, executed Utility Connection Agreement ("Agreement") between HGIA, Kahauiki Village Development LLC, and the Borrower. Additionally, HGIA shall file a notification letter with the Commission when the Project is interconnected to HECO's grid. If HECO is unable to interconnect the Project by March 31, 2018, HGIA shall file a report with the Commission, detailing the Project's interconnection progress, starting on Monday, April 2, 2018, and continuing monthly, on the first Monday of the month, until such time as the Project is interconnected.

On December 8, 2017, the Authority filed a letter informing the Commission that the Borrower transferred its loan request to a different bank and the new bank was not able to meet the December 10<sup>th</sup> deadline to file the Agreement. With the Commission's leave, the Authority informed the Commission that it will file said Agreement by January 22, 2018.

Delinquent Status as of December 31, 2017:

<b>Loan Balance</b>	<b>Current</b>	<b>%</b>	<b>31 – 60 Days</b>	<b>%</b>	<b>61 – 90 Days</b>	<b>%</b>	<b>91+ Days</b>	<b>%</b>
\$5,082,136	\$5,082,136	100.0%	\$0.00	0.0%	\$0.00	0.0%	\$0.00	0.0%
No.: 13	13	100.0%	0	0.0%	0	0.0%	0	0.0%

<sup>17</sup> The Authority is currently awaiting additional information from the applicant and/or underwriting the loan requested.

<sup>18</sup> These loans have been approved and are currently in the documentation process and/or the projects are currently under development.

<sup>19</sup> May include loans that are partially funded. The remaining amount(s) to be funded are in the "Committed" category.



## 2.4 Status of Programs: Commercial Energy Efficiency

At a glance (as of 12/31/17) from program inception:

	<b>Applications Received</b>	<b>In Process</b>	<b>Committed<sup>20</sup></b>	<b>Funded<sup>21</sup></b>
# of loans	1	0	1	1
\$ value of loans	n/a	n/a	\$44,402,478	\$1,997,522

As approved by Act 057 (2017), a \$46.4 million loan was been made to finance energy efficiency measures for the state's Department of Education ("DOE"). Although the DOE initially planned to utilize the \$46.4 million to only retrofit LED lights throughout the 241 DOE facilities eligible for GEMS funding, by adopting innovative strategies, the DOE will be able to implement deeper retrofits to include other energy efficiency measures, such as replacing old, inefficient air conditioners. While the project initially estimated that the DOE would reduce electricity costs by \$8.0 million annually, new estimates indicate that the DOE's energy savings will exceed \$10.5 million per year.

Delinquent Status as of December 31, 2017:

<b>Loan Balance</b>	<b>Current</b>	<b>%</b>	<b>31 – 60 Days</b>	<b>%</b>	<b>61 – 90 Days</b>	<b>%</b>	<b>91+ Days</b>	<b>%</b>
\$1,997,522	\$1,997,522	100.0%	\$0.00	0.0%	\$0.00	0.0%	\$0.00	0.0%
No.: 1	1	100.0%	0	0.0%	0	0.0%	0	0.0%

Metrus Energy ("Metrus"), the Authority's approved capital partner for the Commercial Energy Efficiency Product, began marketing in July 2016. The sales cycle for these loans can be lengthy due to the considerable engineering work required on the part of the borrower and the size of the transaction(s). Additionally, while Metrus has been actively prospecting projects for GEMS financing, identifying eligible projects has been difficult due to a disconnect between Metrus' \$1.0 million minimum project size requirement and GEMS financing restrictions that only authorizes the funds to be used for nonprofit or small business<sup>22</sup> participants. Metrus continues to seek financing opportunities that meet GEMS program requirements.

In alignment with its 2018 Annual Plan<sup>23</sup>, the Authority will be submitting a Program Notification to request Commission approval for its Commercial Energy Efficiency Loan Product: Project Sponsor and Direct.

## 2.5 Status of Programs: Open Solicitation for Financing Arrangements

On July 14, 2016, the Authority established an Open Solicitation for Financing Arrangements process for proposals related to deployment of GEMS funds. This is consistent with best practice by Green Banks and

<sup>20</sup> Loan funds will be advanced based on achievement of milestone progress payment criteria by Contractors.

<sup>21</sup> Partially funded loan. The remaining amount(s) to be funded are in the "Committed" category.

<sup>22</sup> Small Businesses are defined by the U.S. Small Business Administration's Size Standards.

<sup>23</sup> See Hawaii Green Infrastructure Fiscal 2018 Annual Plan submitted in Docket No. 2014-0135 on March 30, 2017, Attachments D and E for details.

similar State entities and provides a consistent, transparent approach to sourcing opportunities for capital deployment. HGIA did not receive any requests during the quarter.

## **2.6 Status of Programs: Other Programs Under Development**

### On Bill Repayment

On-Bill Repayment (“OBR”) is a critical tool to enable green infrastructure financing for the underserved (i.e. renters and low to moderate-income households) to truly democratize clean energy.

On November 24, 2017, the Hawaiian Electric Companies (“Companies”) filed a Status Update and Request for Guidance on the On-Bill Repayment Mechanism in Docket No. 2014-0135, to seek Commission guidance on the Companies’ last four remaining issues. On December 4, 2017, the Authority filed its Response to the Companies’ Status Update and Request for Guidance<sup>24</sup>. On January 5, 2018, the Commission issued Order 35185<sup>25</sup> providing clear guidance to the Companies’ concerns.

The Authority continues to work closely with the Hawaiian Electric Companies and its Loan Servicer on this project and plans to submit a filing, joint with the HECO Companies, of the Program Manual no later than February 28, 2018, for the Commission’s approval of the Green Energy Money Saver (“GEM\$”) On-Bill Program.

### PV plus Storage Financing

The Authority filed Program Notification No. 7 with the Commission on July 22, 2016 regarding deployment of capital for consumer PV with battery. On August 2, 2016, the Consumer Advocate filed comments requesting the Authority to provide further information regarding (1) modifications made to the existing Consumer PV program and their impact on the types of customers likely to receive GEMS Program financing; (2) the “public benefit” associated with the proposed Consumer PV with Battery program and who is likely to benefit; and (3) how the proposed Consumer PV product will expand access to financing for customers, particularly those who are underserved. On August 12, 2016, the Commission suspended Program Notification No. 7 pending the Authority’s response to comments from the Consumer Advocate (“CA”).

The Authority believes that its ability to finance storage is critical, especially given the remaining interconnection options offered by the Hawaiian Electric Companies requiring energy storage. In alignment with its 2018 Annual Plan, the Authority will be submitting a Program Notification to request Commission approval to finance PV + Storage.

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<sup>24</sup> See Hawaii Green Infrastructure Authority’s Response to the Hawaiian Electric Companies Status Update and Request for Guidance on the On-Bill Repayment Mechanism for the Green Infrastructure Loan Program filed in Docket No. 2014-0135 on December 4, 2017.

<sup>25</sup> See Order No. 35185 Providing Guidance Regarding the On-Bill Repayment Mechanism filed on January 5, 2018 in Docket No. 2014-0135.



### Residential Energy Efficiency

At a glance (as of 12/31/17) from program inception:

	Applications Received	In Process	Committed <sup>26</sup>	Funded
# of loans	0	0	0	0
\$ value of loans	n/a	n/a	\$9,600,000	\$0.00

\$9.6 million in GEMS funds have been committed to finance \$9.6 million in residential solar hot water (energy efficiency) projects for Molokai residents. Actual funding is pending Hawaii Public Utilities Commission ("PUC") approval for GEMS funds to be used for residential energy efficiency projects as well as PUC approval of the Green Energy Money Saver ("GEM\$") On-Bill Program.

In alignment with its 2018 Annual Plan, the Authority will be submitting a Program Notification to request Commission approval of a Residential Energy Efficiency Loan Product.

### 2.7 Additional Activities

The following are some of the activities that have occurred since the end of the quarter (December 31, 2017) and will be reported as activities in the next Quarterly Report:

- Loans Funded. As of January 22, 2018, the Authority funded six additional Residential PV Loans aggregating \$219,952; funded progress payments for five Commercial PV loans aggregating \$2,713,227 and funded progress payments for the DOE loan aggregating \$700,850.
- Loan Approvals. As of January 22, 2018, the Authority approved an additional Residential PV Loan for \$37,260; two Consumer Leases aggregating \$34,316 and a Commercial PV loan for \$118,535, which will facilitate the financing of a \$223,650 project for a nonprofit.
- Utility Connection Agreement. On January 22, 2018, the Authority filed the executed Utility Connection Agreement for the Kahauiki Village project with the Commission in Docket No. 2014-0135.

## 3 Program Metrics

As required by the Program Order, the following Program Metrics are being provided for the current quarter, fiscal year-to-date and since program inception.

3.1 Energy and Environment Impact			
	This Quarter: 10/1 -12/31/17	FY 2018 To Date	Since Program Inception
<b>Clean Energy Production of Projects Financed</b>			
Installed Capacity (Actual kW)	1,342.6	2,152.4	3,919.9
Total Yr 1 Production (Estimated kWh)	1,912,003.3	3,299,337.3	5,975,001.3
Total Project Production Over Lifetime of Installed PV (Projected kWh) (including 0.50% degradation)	36,477,014.6	62,944,438.6	113,990,500.6

<sup>26</sup> This is a commitment to finance solar thermal installations on Molokai leveraging the On-Bill mechanism.



<b>Electricity Reductions from Energy Efficiency Projects Financed</b>			
Total Yr 1 kWh Reduction (Energy Efficiency)*	35,312,352	35,314,352	35,314,352
Total kWh Reduction Over Lifetime of Installed EE*	529,715,280	529,715,280	529,715,280
<b>Petroleum Displaced by Clean Energy and Energy Efficiency Projects</b>			
Total Petroleum Displaced/Saved Over Lifetime (Clean Energy and Energy Efficiency Projects (1)) (Estimated barrels)	347,741.2	363,996.9	395,348.1
Petroleum Displaced/Saved based on Yr 1 Clean Energy Generation (Estimated barrels)	1,174.3	2,026.3	3,669.7
Petroleum Displaced Over Lifetime of Installed PV (Projected barrels)	22,403.3	38,659.0	70,010.1
Cumulative Annual Petroleum saved from Yr 1 Efficiency Projects*	21,689.2	21,689.2	21,689.2
Petroleum Saved over Lifetime of Efficiency Projects*	325,338.0	325,338.0	325,338.0
<b>Greenhouse Gas Avoided</b>			
Total Greenhouse Gas Avoided (2) Over Lifetime (Clean Energy and Energy Efficiency Projects) (Est. metric tons CO <sub>2</sub> )	170,382.8	178,347.6	193,708.7
Greenhouse Gas Avoided from Clean Energy Yr 1 Production (Estimated metric tons CO <sub>2</sub> )	575.4	992.8	1,798.0
Greenhouse Gas Avoided Over Lifetime of Installed PV (Projected metric tons CO <sub>2</sub> )	10,976.9	18,941.7	34,302.9
Greenhouse Gas Avoided from Yr 1 Energy Efficiency*	10,627.1	10,627.1	10,627.1
Greenhouse Gas Avoided over Lifetime of Energy Efficiency Project*	159,405.9	159,405.9	159,405.9
(1) Reference unitjuggler.com for conversion metric.			
(2) Reference eia.gov for conversion metrics.			

<b>3.2 Economic Development Impact</b>			
<b>GEMS Capital</b> (Cash Basis)	<b>This Quarter: 10/1 -12/31/17</b>	<b>FY 2018 To Date</b>	<b>Since Program Inception</b>
GEMS Revenues	\$ 645,652	\$ 1,014,661	\$ 2,014,104
GEMS Administrative & Program Costs	\$ 153,641	\$ 309,251	\$ 3,083,542
GEMS Loans Funded	\$ 3,423,174	\$ 5,313,200	\$ 10,380,763
Indirect Economic Impact - Jobs Created/Retained (1)*	541.9	595.8	675.3
State of Hawaii Tax Revenues Generated*	\$ 839,937	\$ 7,351,440	\$ 8,332,553

(1) Jobs created or retained was previously calculated utilizing the SBA's metric of \$65,000/job. However, as a state program, we will be utilizing the State's metric of \$97,922/job for 2018.

<b>Projects Financed According to Technology Type/Category</b>			
Solar Photovoltaic Systems (1)	267	305	420
Energy Storage	0	0	0
Lighting Upgrades (2)*	725,000	725,000	725,000
HVAC Upgrades*	324	324	324
Mechanical Upgrades	0	0	0
Controls and Monitoring Devices	273	307	434
Energy/Water Nexus	0	0	0
Total No. of Projects	26	45	121
(1) Including advanced inverters and smart modules.			
(2) DOE Project: 700,000 Interior LEDs and 25,000 Exterior LEDs			

<b>3.3 Market Expansion Impact</b>			
<b>Residential PV Loan Program</b>	<b>This Quarter: 10/1 -12/31/17</b>	<b>FY 2018 To Date</b>	<b>Since Program Inception</b>
Total No. of GEMS Loans	15	29	98
Total No. of GEMS Leases	8	8	8
No. Loans Serving Underserved Market (1)	20	31	88
% Loans Serving Underserved Market	87.0%	83.8%	83.0%
(1) See AMI Distribution			
<b>Status of Applications:</b>			
No. of Residential PV Applications Received	32	111	439
No. of Residential PV Applications In Process	29	N/A	N/A
No. of Residential PV Applications Declined	14	35	161
No. Residential PV Applications Withdrawn	15	22	111
No. of Residential PV Applications Loan Docs Accepted	40	N/A	N/A
<b>Geographic Location</b>			
No. of Loans on Oahu	21	34	89
No. of Loans on Maui	0	0	9
No. of Loans on Molokai	0	0	0
No. of Loans on Lanai	0	0	0
No. of Loans on Hawaii	2	3	8
<b>Profile of Customers</b>			
<b>Number of Customers By Customer FICO Credit Score</b>			
700 and above	11	15	41
675-699	6	10	27
650-674	3	6	17
620-649	2	3	14
600-619	1	3	7
<b>Number of Customers By Income Distribution (self-reported by customers)</b>			
Under \$15,000	0	0	0
\$15,000-\$24,999	0	0	1
\$25,000-\$34,999	0	0	1
\$35,000-\$49,999	4	4	7
\$50,000-\$74,999	2	6	15
\$75,000-\$99,999	3	6	26
\$100,000 and Above	14	21	56
<b>Number of Customers by Area Median Income (1)</b>			
<30% AMI (Extremely Low Income)	1	1	1
30% to <50% AMI (Very Low Income)	2	4	10
50% to <80% AMI (Low Income)	2	5	19
80% to <140% AMI (Moderate Income)	15	21	57
> 140% AMI	3	6	19
(1) Area Median Income as provided by the U.S. Department of Housing & Urban Development (HUD). <30% AMI - Extremely Low Income; 30% to <50% AMI = Very Low Income; 50% to <80% AMI - Low Income; 80% to <140% AMI = Moderate Income.			

<b>Commercial Loan Program</b>	<b>This Quarter: 10/1 -12/31/17</b>	<b>FY 2018 To Date</b>	<b>Since Program Inception</b>
Total Number of GEMS PV Loans	3	7	13
Total Number of GEMS EE Loans	0	1	1
No. of Nonprofits Participating in GEMS	1	5	8

<b>Status of Applications:</b>			
No. of Commercial PV Applications Received	5	14	24
No. of Commercial PV Applications Approved	6	15	21
No. of Commercial PV Applications Declined	0	0	0
No. of Commercial PV Applications Withdrawn	1	1	1
No. of Commercial PV Applications Under Review	2	N/A	N/A
No. of Commercial EE Applications Received	0	0	1
No. of Commercial EE Applications Approved	0	0	1
No. of Commercial EE Applications Declined	0	0	0
No. of Commercial EE Applications Withdrawn	0	0	0
No. of Commercial EE Applications Under Review	0	0	0
<b>Geographic Location (1)</b>			
No. of Loans on Oahu	2	5	10
No. of Loans on Maui	0	2	2
No. of Loans on Molokai	0	0	0
No. of Loans on Lanai	0	0	0
No. of Loans on Hawaii	1	1	2
(1) DOE loan benefits 241 public schools statewide (except Kauai)			
<b>No. Small Businesses Participating in GEMS</b>	<b>1</b>	<b>1</b>	<b>1</b>
<b>No. Small Businesses by Gross Receipts</b>			
Up to \$9,999	0	0	0
\$10,000-\$24,999	0	0	0
\$25,000-\$99,999	0	0	0
\$100,000-\$499,999	0	0	0
\$500,000-\$999,999	1	1	1
\$1,000,000-\$4,999,999	0	0	0
Above \$5,000,000	0	0	0
<b>Number of Small Businesses by Average Number of Employees</b>			
≤10 Employees	0	0	0
11-50 Employees	0	0	0
51-100 Employees	0	0	0
101-250 Employees	0	0	0
251-500 Employees	0	0	0
501-1,000 Employees	0	0	0
>1,000 Employees	0	0	0
<b>Number of Rental Units Supported by GEMS</b>	<b>241</b>	<b>241</b>	<b>746</b>

<b>3.4 Cost Savings Impact</b>			
	<b>This Quarter: 10/1 -12/31/17</b>	<b>FY 2018 To Date</b>	<b>Since Program Inception</b>
Aggregate Estimated <b>Gross</b> (1) Electricity Cost Savings from Energy Production and Reduction (life of system) (\$)	\$ 175,567,569	\$ 187,916,698	\$ 211,483,734
Aggregate Estimated <b>Gross</b> Electricity Cost Savings From Energy Production (life of system) (\$) (Consumer)	\$ 2,611,428	\$ 4,802,602	\$ 13,125,439
Aggregate Estimated <b>Gross</b> Electricity Cost Savings From Energy Production (life of system) (\$) (Commercial)	\$ 14,041,551	\$ 24,199,506	\$ 39,443,705



Aggregate Estimated <b>Gross</b> Electricity Cost Savings from Energy Efficiency (life of system)(\$)(Commercial)*	\$ 158,914,590	\$ 158,914,590	\$ 158,914,590
<u>Average</u> Estimated <b>Gross</b> Electricity Cost Savings From Energy Production (life of system) (\$) (Consumer)	\$ 113,540	\$ 129,800	\$ 123,825
<u>Average</u> Estimated <b>Gross</b> Electricity Cost Savings From Energy Production (life of system) (\$) (Commercial)	\$ 4,680,517	\$ 4,680,517	\$ 3,034,131
<u>Average</u> Estimated Gross Electricity Cost Savings from Energy Efficiency (life of system)(\$)(Commercial)*	\$ 659,397	\$ 659,397	\$ 659,397
Aggregate Estimated <b>Net</b> (2) Electricity Cost Savings From Energy Production (life of system) (\$) (Consumer)	\$ 1,718,082	\$ 3,466,745	\$ 9,228,051
Aggregate Estimated <b>Net</b> Electricity Cost Savings From Energy Production (life of system) (\$) (Commercial)	\$ 4,160,239	\$ 8,748,626	\$ 17,265,839
Aggregate Estimated <b>Net</b> Electricity Cost Savings From Energy Efficiency (life of system) (\$) (Commercial)*	\$ 112,514,590	\$ 112,514,590	\$ 112,514,590
<u>Average</u> Estimated <b>Net</b> Electricity Cost Savings From Energy Production (life of system) (\$) (Consumer)	\$ 114,547	\$ 119,551	\$ 94,172
<u>Average</u> Estimated <b>Net</b> Electricity Cost Savings From Energy Production (life of system) (\$) (Commercial)	\$ 1,386,746	\$ 1,249,804	\$ 1,328,141
<u>Average</u> Estimated <b>Net</b> Electricity Cost Savings from Energy Efficiency (\$)(Commercial)*	\$ 466,866	\$ 466,866	\$ 466,866
<u>Average</u> System Cost per Watt for All Consumers (PV) (\$)	\$ 4.15	\$ 4.07	\$ 4.00
<u>Average</u> System Cost per Watt for Underserved Consumers (PV) (\$)	\$ 3.97	\$ 3.94	\$ 3.99
<u>Average</u> System Size for All Consumers (PV) (kW)	8.3	8.0	8.3
<u>Average</u> System Size for Underserved Consumers (PV) (kW)	8.5	8.1	8.4
Project Cost per Watt for All Consumers – Energy Efficiency (\$)	0	0	0
<u>Average</u> Project Size for All Consumers – Energy Efficiency (kW)	0	0	0
Project Cost per Watt for Underserved Consumers – Energy Efficiency (\$)	0	0	0
<u>Average</u> Project Size for Underserved Consumers – Energy Efficiency (kW)	0	0	0
(1) Savings calculation assumes a historical utility rate increase of 5.72% annually.			
(2) Savings calculations includes tax credits, assumes a historical utility rate increase of 5.72% annually and is net of loan payments required.			
* Energy Efficiency metrics based on DOE's completed project plan.			

#### 4 Financial Summary of Hawaii Green Infrastructure Authority

State of Hawaii  
Hawaii Green Infrastructure Authority  
Financial Summary  
FY 2018

**BALANCE SHEET**

**AS OF DECEMBER 31, 2017**

Current Assets

Cash in Bank	\$ 132,342,163
Cash in Treasury	<u>2,243,793</u>
Total Current Assets	\$ 134,585,956

Non-Current Assets

GEMS Loans Receivable	<u>10,302,308</u>
<b>Total Assets</b>	<b>\$ 144,888,264</b>

Liabilities

<b>Total Liabilities</b>	<u>-</u>
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Fund Balance

Fund Balance - State Treasury	\$ 2,243,793
Fund Balance - GEMS Program	<u>142,644,470</u>
<b>Total Fund Balance</b>	<b>\$ 144,888,264</b>
<b>Total Liabilities &amp; Fund Balance</b>	<b>\$ 144,888,264</b>

**STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES**

**PERIOD OF JULY 1, 2017 TO DECEMBER 31, 2017**

Revenues

Investment Interest	\$ 575,205
Interest Income from Loans	177,408
Loan Fees & Other Income	<u>262,047</u>
Total Revenues	\$ 1,014,661

Expenditures

	<u>\$ (309,251)</u>
Over (Under) Expenditures	<u>705,410</u>

Other Financing Sources & Uses

	<u>\$ -</u>
Total Other Financing	<u>\$ -</u>

Net Change in Fund Balance

	\$ 705,410
Fund Balance, Beginning of Period	<u>144,182,854</u>
<b>Fund Balance, Ending of Period</b>	<b>\$ 144,888,264</b>

## 5 Additional Reporting Requirements

### 5.1 Consumer Protection Policies

The Program Order directed the Authority to “provide full details of the GEMS Program consumer protection policies it develops to the [C]ommission with its quarterly reporting and Program Notifications”<sup>27</sup> and to “report the details of any failure on the part of any Deployment Partner to comply with these consumer protection policies to the [C]ommission, including the number of complaints and the steps taken to address such complaints, as part of the GEMS Program’s quarterly reporting and Annual Plan submission process”.<sup>28</sup>

The GEMS Program submitted its consumer protection policies in a Program Notification to the Commission on July 1, 2015.<sup>29</sup>

No complaints have been received to date regarding GEMS Deployment Partners.

### 5.2 Utility-Scale Project Financing

The Program Order instructed the Authority to summarize and report information about utility-scale project financing during periods where utility-scale project financing is initiated and the project is operated.<sup>30</sup> The Authority has not initiated any utility-scale projects during the quarter and there are no utility-scale projects that have been financed or are currently being discussed.

### 5.3 Utility System Cost Information Update

The Program Order directed the Authority to “work with the HECO companies and the Consumer Advocate to determine the appropriate GEMS Program-related utility system cost information for reporting purposes, and to provide an update on the finalization of these utility system costs and impacts reporting requirements as part of DBEDT’s first Quarterly Report filing.”<sup>31</sup> Though “utility system cost” was not defined in the Program Order, the Consumer Advocate refers to these costs as costs “incurred as result of [distributed generation] PV or other clean energy projects financed by the GEMS [P]rogram.”<sup>32</sup> Subsequent to the issuance of the Program Order, the Authority, HECO and the Consumer Advocate met to identify ways to integrate data that is currently available with data that will be obtained through monitoring and other means to quantify and analyze potential utility system costs due to distributed generation. The Authority did not allocate any resources for this initiative over the last quarter. It will update the Commission on utility system cost information should discussions resume.

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<sup>27</sup> See “Decision and Order No. 32318,” filed in Docket No. 2014-0135 on September 30, 2014, at p. 66.

<sup>28</sup> See “Decision and Order No. 32318,” filed in Docket No. 2014-0135 on September 30, 2014, at p. 66.

<sup>29</sup> See “Program Notification No. 4 for the Green Infrastructure Loan Program” filed in Docket No. 2014-0135 on July 1, 2015 at pp 4-5.

<sup>30</sup> See “Decision and Order No. 32318,” filed in Docket No. 2014-0135 on September 30, 2014, at p. 60.

<sup>31</sup> See “Decision and Order No. 32318,” filed in Docket No. 2014-0135 on September 30, 2014, at p. 95.

<sup>32</sup> See “Division of Consumer Advocacy’s Statement of Position,” filed in Docket No. 2014-0135 on August 7, 2014, at p. 14.



## SERVICE LIST

Two copies of the foregoing: GEMS Program Quarterly Report in Docket No. 2014-0135, together with this Certificate of Service have been served to the following and at the following addresses:

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Dated: Honolulu, Hawaii, January 30, 2018.