DAVID Y. IGE
GOVERNOR

GWEN S. YAMAMOTO LAU
EXECUTIVE DIRECTOR

HAWAII GREEN INFRASTRUCTURE AUTHORITY

No. 1 Capitol District Building, 250 South Hotel Street, 5th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

Telephone: (808) 587-3868

April 25, 2018

FILED
2018 APR 25 P 2: 10
PUBLIC UTILITIES
COMMISSION

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

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 January 1, 2018 to March 31, 2018. This report fulfills the requirement for the Quarterly Report 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:

January 1, 2018 – March 31, 2018

REPORT TO THE
STATE OF HAWAII
PUBLIC UTILITIES COMMISSION
Pursuant to
Decision and Order No. 32318 filed in Docket No. 2014-0135

April 2018

Contents

1 Introduction and Context 3

1.1 Procedural History and Reporting Requirements 3

1.2 Overview of Program Status and Market Outlook 4

2 Summary of Program Activities 5

2.1 Administration 5

2.2 Status of Programs: Residential PV 6

2.3 Status of Programs: Commercial PV 7

2.4 Status of Programs: Commercial Energy Efficiency 8

2.5 Status of Programs: Open Solicitation for Financing Arrangements 9

2.6 Status of Programs: Other Programs Under Development 10

2.7 Additional Activities 11

3 Program Metrics 11

3.1 Energy and Environment Impact 11

3.2 Economic Development Impact 12

3.3 Market Expansion Impact 12

3.4 Cost Savings Impact 14

4 Financial Summary of Hawaii Green Infrastructure Authority 16

5 Additional Reporting Requirements 17

5.1 Consumer Protection Policies 17

5.2 Utility-Scale Project Financing 17

5.3 Utility System Cost Information Update 17

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[1] (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," [2] ("Application") for the Hawaii Green Infrastructure Authority ("Authority" or "HGIA").[3] 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.[4] 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.[5] 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[6] that included requirements concerning the financing of utility-scale projects, when applicable.[7]

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;

---

[1] Filed on September 30, 2014 in Docket No. 2014-0135

[2] Filed on June 6, 2014 in Docket No. 2014-0135

[3] 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.

[4] See "Decision and Order No. 32318," filed in Docket No. 2014-0135 on September 30, 2014, at p. 1.

[5] 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.

[6] "Consumer Advocate" refers to the Division of Consumer Advocacy of the Department of Commerce and Consumer Affairs of the State of Hawaii.

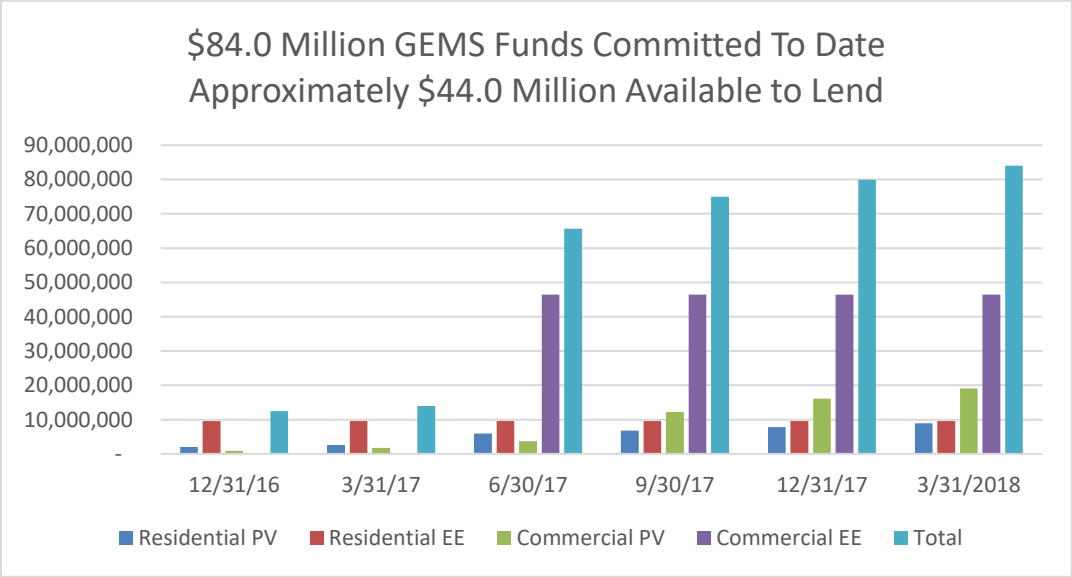
[7] See "Decision and Order No. 32318," filed in Docket No. 2014-0135 on September 30, 2014, at p. 93.

(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.[8]

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.[9] 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 PV Lease, Commercial PV and Commercial Energy Efficiency (i.e. Department of Education) loan products. As of March 31, 2018, approximately $84.0 million or 57.4% of GEMS funds have been committed, leaving approximately $44.0 million available to lend. Please refer to sections 2.2, 2.3, 2.4 and 2.6 for additional information.



Additionally, for the nine-month period ending March 31, 2018, the Authority posted Excess Revenues over Expenditures aggregating almost $1.1 million. Please refer to the Financial Summary in Section 4 for more details.

[8] See "Decision and Order No. 32318," filed in Docket No. 2014-0135 on September 30, 2014, at p. 97.
[9] 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 current activity of the filings in the GEMS docket (2014-0135) for the Green Energy Money $aver On-Bill Program, Program Notification No. 12 to finance commercial energy efficiency, and other clean energy programs on the horizon, such as Community-Based Renewable Energy, 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 January 1, 2018 and March 31, 2018.

2.1 Administration

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

- **Order No. 35185.** The Commission filed Order 35185 on January 5, 2018 in Docket No. 2014-0135. See Section 2.6 Status of Programs: Other Programs Under Development, On-Bill Repayment for more details.
- **Utility Connection Agreement.** A Utility Connection Agreement was filed with the Commission on January 22, 2018 in Docket No. 2014-0135. See Section 2.3 Status of Programs: Commercial PV, Kahauiki Village for more details.
- **Board Meeting**. The Authority held a board meeting on January 26, 2018, at which it approved HGIA's Quarterly Report for the period ended December 31, 2017.
- **Quarterly Report**. The Quarterly Report covering the period of October 1, 2017 to December 31, 2017 was filed with the Commission on January 30, 2018 in Docket No. 2014-0135.
- **Joint Filing.** The Authority and the Hawaiian Electric Companies submitted a Joint Filing with the Commission on February 28, 2018 in Docket No. 2014-0135. See Section 2.6 Status of Programs: Other Programs Under Development, On-Bill Repayment for more details.
- **Information Request ("IR").** A request for information was filed by the Commission on March 2, 2018 in Docket No. 2014-0135. See Section 2.6 Status of Programs: Other Programs Under Development, On-Bill Repayment for more details.
- **Information Request.** A request for information was filed by the Consumer Advocate on March 8, 2018 in Docket No. 2014-0135. See Section 2.6 Status of Programs: Other Programs Under Development, On-Bill Repayment for more details.
- **Program Notification No. 12.** Program Notification No. 12 ("PN#12") was filed in Docket No. 2014-0135 on March 9, 2018. See Section 2.4 Status of Programs: Commercial Energy Efficiency for more details.
- **Joint Response.** A joint response to the Commission's IRs was filed on March 12, 2018 in Docket No. 2014-0135. See Section 2.6 Status of Programs: Other Programs Under Development, On-Bill Repayment for more details.
- **Joint Response.** A joint response to the Consumer Advocate's IRs was filed on March 16, 2018 in Docket No. 2014-0135. See Section 2.6 Status of Programs: Other Programs Under Development, On-Bill Repayment for more details.
- **CA's Comments.** The Consumer Advocate filed comments to Program Notification No. 12 on March 22, 2018 in Docket No. 2014-0135. See Section 2.4 Status of Programs: Commercial Energy Efficiency for more details.

- **Board Meeting**. The Authority held a board meeting on March 23, 2018, at which it approved HGIA's Annual Plan for the Fiscal Year 2019: July 1, 2018 to June 30, 2019.
- **HGIA's Response.** The Authority filed its response to the CA's Comments in regard to PN #12 on March 27, 2018 in Docket No. 2014-035. See Section 2.4 Status of Programs: Commercial Energy Efficiency for more details.
- **Annual Plan.** The Annual Plan for the Fiscal Year 2019 was filed with the Commission on March 29, 2018 in Docket No. 2014-0135.
- **CA's Comments.** The CA filed comments to the Joint Filing on March 29, 2018 in Docket No. 2014-0135. See Section 2.6 Status of Programs: Other Programs Under Development, On-Bill Repayment for more details.

2.2 Status of Programs: Residential PV

At a glance (as of 3/31/18) from program inception:

WECC Originated	**Applications Received**	**In Process[10]**	**Committed[11]**	**Funded**
# of loans	427	0	13	125
$ value of loans	n/a	n/a	$575,044	$4,209,431
HGIA Originated (Effective 11/9/17)	**Applications Received**	**In Process[12]**	**Committed[13]**	**Funded**
# of loans	37	7	16.5	0.5
$ value of loans	n/a	n/a	$1,090,468	$18,630

Consumer Leases (PN #10)	**Applications Received**	**In Process[14]**	**Committed[15]**	**Funded[16]**
# of loans	64	26	36	16
$ value of loans	n/a	n/a	$1,318,048	$213,486
			1,468,466[17]	

As the loans in the WECC pipeline complete its installation process and are funded, the Authority's origination activity is proportionately increasing. Additionally, the marketing by contractors for the Consumer Lease product has resulted in a significant increase in application volume over the last quarter

[10] This category includes loan that being processed and/or pending additional information.
[11] Includes loans that have been approved with executed Loan Documents and solar systems in the process of being installed.
[12] This category includes loan that being processed and/or pending additional information.
[13] Includes loans that have been approved with executed Loan Documents and solar systems in the process of being installed.
[14] This category includes requests being processed and/or pending additional information.
[15] Includes projects that have been approved and solar systems in the process of being installed. May include loans that are partially funded. The amount(s) funded are in the "Funded" category.
[16] May include loans that are partially funded. The remaining amount(s) to be funded are in the "Committed" category.
[17] GEMS funds committed to four borrowers who are in the process of sourcing consumer PV leases.

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 and solar hot water heaters.

Delinquent Status as of March 31, 2018:

Loan Balance	Current	%	31 – 60 Days*	%	61 – 90 Days*	%	91+ Days	%
$3,874,736	$3,812,022	98.4%	$38,649	1.0%	$24,065	0.6%	$0.00	0.0%
No.: 125	123	98.4%	1	0.8%	1	0.8%	0	0.0%

* HGIA's Loan Servicer provides collection services.

2.3 Status of Programs: Commercial PV

At a glance (as of 3/31/18) from program inception:

	Applications Received	In Process[18]	Committed[19]	Funded[20]
# of loans	26	3	12	15
$ value of loans	n/a	n/a	$7,283,481	$11,858,203

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 March 31, 2018, almost $38.1 million in total projects for nonprofits, small businesses and multi-family rental projects were leveraged with $19.1 million in GEMS funds.

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, 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 required the Authority to (1) 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; and (2) 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, the Order further requires HGIA to file a report with the Commission, detailing the Project's interconnection progress, beginning Monday, April 2, 2018, and continuing on the first Monday of the month, until such time as the Project is interconnected.

[18] The Authority is currently awaiting additional information from the applicant and/or underwriting the loan requested.

[19] These loans have been approved and are currently in the documentation process and/or the projects are currently under development.

[20] May include loans that are partially funded. The remaining amount(s) to be funded are in the "Committed" category.

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 10th 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.

On January 12, 2018, thirty (30) previously homeless families moved into the newly completed Kahauiki Village. The micro-grid, financed in part by GEMS, enabled these families to relocate to their new homes despite the project not yet being grid-tied.

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.

Per the Commission's Order, as the project will not yet be grid connected by March 31, 2018, the Authority will file an Interconnection Status report with the Commission on April 2, 2018.

Delinquent Status as of March 31, 2018:

Loan Balance	Current	%	31 – 60 Days	%	61 – 90 Days	%	91+ Days	%
$11,849,911	$11,849,911	100.0%	$0.00	0.0%	$0.00	0.0%	$0.00	0.0%
No.: 15	15	100.0%	0	0.0%	0	0.0%	0	0.0%

2.4 Status of Programs: Commercial Energy Efficiency

At a glance (as of 3/31/18) from program inception:

	Applications Received	In Process	Committed[21]	Funded[22]
# of loans	1	0	1	1
$ value of loans	n/a	n/a	$41,647,609	$4,752,391

Department of Education. 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.

The DOE has awarded a number of contracts and are on track to award additional contracts over the next few months utilizing all of its unfunded loan amounts.

[21] Loan funds will be advanced based on achievement of milestone progress payment criteria by Contractors.
[22] Partially funded loan. The remaining amount(s) to be funded are in the "Committed" category.

Delinquent Status as of March 31, 2018:

Loan Balance	Current	%	31 – 60 Days	%	61 – 90 Days	%	91+ Days	%
$4,775,794	$4,775,794	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 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[23] participants. Metrus continues to seek financing opportunities that meet GEMS program requirements.

Direct Commercial Energy Efficiency Financing. In alignment with its 2018 Annual Plan[24], the Authority filed Program Notification No. 12 in Docket No. 2014-0135 on March 9, 2018 to request approval to finance Commercial Energy Efficiency for nonprofits, small businesses and multi-family rental projects.

On March 22, 2018, the Consumer Advocate ("CA") filed comments to Program Notification No. 12 in Docket No. 2014-0135 regarding underserved designation, near-term bill increases and collaboration with Hawaii Energy.

On March 27, 2018, the Authority filed its response to the CA's Comments in Docket No. 2014-0135, stating (1) it may request small business customers and for-profit apartment building owners to be designated as part of the underserved segment in the future; (2) it will continue to inform borrowers/participants of possible reduced savings or even increases in payments before longer run savings are realized, on a case-by-case basis, as may be applicable; and (3) it agrees with the CA that the Authority's efforts should be coordinated with Hawaii Energy. The Authority and Hawaii Energy began meeting to this regard and will continue to have ongoing discussions to ensure our efforts are coordinated.

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

[23] Small Businesses are defined by the U.S. Small Business Administration's Size Standards.

[24] See Hawaii Green Infrastructure Fiscal 2018 Annual Plan submitted in Docket No. 2014-0135 on March 30, 2017, Attachments D and E for details.

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.

With the guidance provided by the Commission with Order No. 35185 filed on January 5, 2018 in response to the Hawaiian Electric Companies' ("Companies") request for guidance, the Authority and the Hawaiian Electric Companies submitted a Joint Filing with the Commission on February 28, 2018 in Docket No. 2014-0135 for approval of the Green Energy Money $aver On-Bill Program.

Subsequent to this filing, requests for information and related responses, as itemized in Section 2.1, Administration, have been filed providing clarity to questions and comments from the Commission and/or the CA.

As we await the Commission's decision, the Authority continues to work closely with the Hawaiian Electric Companies and its Loan Servicer on required tasks and processes needed to launch and execute this project.

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 Annual Plan, the Authority will be submitting a Program Notification to request Commission approval to finance PV + Storage.

Residential Energy Efficiency

At a glance (as of 3/31/18) from program inception:

	Applications Received	**In Process**	**Committed[25]**	**Funded**
# of loans	0	0	0	0
$ value of loans	n/a	n/a	$9,600,000	$0.00

[25] This is a commitment to finance solar thermal installations on Molokai leveraging the On-Bill mechanism.

$9.6 million in GEMS funds have been committed to finance residential solar hot water (energy efficiency) projects for Molokai residents. Actual funding is pending Commission approval of the Green Energy Money $aver ("GEM$") On-Bill Program.

2.7 Additional Activities

The following are some of the activities that have occurred since the end of the quarter (March 31, 2018) and will be reported as activities in the next Quarterly Report:

- **Order 35375.** The Commission issued Order No. 35375 on April 2, 2018 in Docket No. 2014-0135 Conditionally Approving Program Notification No. 12.
- **K-Village**. HGIA filed an Interconnection Progress Report for Kahauiki Village on April 2, 2018 in Docket No. 2014-0135.
- **Joint Response**. A joint response to the Consumer Advocate's comments on the Green Energy Money $aver On-Bill Program was filed on April 13, 2018 in Docket No. 2014-0135.
- **Loans Funded**. As of April 16, 2018, the Authority funded four additional Residential PV Loans aggregating $151,965 and a Commercial PV loan progress payment of $80,079.

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			
Clean Energy Production of Projects Financed	**This Quarter: 1/1-3/31/18**	**FY 2018 To Date**	**Since Program Inception**
Installed Capacity (Actual kW)	1,525.7	3,678.1	5,445.5
Total Yr 1 Production (Estimated kWh)	2,408,779.0	5,704,770.5	8,380,434.5
Total Project Production Over Lifetime of Installed PV (Projected kWh) (including 0.50% degradation)	45,954,454.4	108,835,064.0	159,881,124.8
Electricity Reductions from Energy Efficiency Projects Financed			
Total Yr 1 kWh Reduction (Energy Efficiency)*	-	35,314,352	35,314,352
Total kWh Reduction Over Lifetime of Installed EE*	-	529,715,280	529,715,280
Petroleum Displaced by Clean Energy and Energy Efficiency Projects			
Total Petroleum Displaced/Saved Over Lifetime (Clean Energy and Energy Efficiency Projects (1)) (Estimated barrels)	28,224.1	392,181.9	423,533.0
Petroleum Displaced/Saved based on Yr 1 Clean Energy Generation (Estimated barrels)	1,479.4	3,503.7	5,147.1
Petroleum Displaced Over Lifetime of Installed PV (Projected barrels)	28,224.1	66,843.9	98,195.0
Cumulative Annual Petroleum saved from Yr 1 Efficiency Projects*	-	21,689.2	21,689.2
Petroleum Saved over Lifetime of Efficiency Projects*	-	325,338.0	325,338.0

Greenhouse Gas Avoided			
Total Greenhouse Gas Avoided (2) Over Lifetime (Clean Energy and Energy Efficiency Projects) (Est. metric tons CO2)	13,829.0	192,157.4	207,518.5
Greenhouse Gas Avoided from Clean Energy Yr 1 Production (Estimated metric tons CO_2)	724.9	1,716.7	2,521.9
Greenhouse Gas Avoided Over Lifetime of Installed PV (Projected metric tons CO_2)	13,829.0	32,751.5	48,112.6
Greenhouse Gas Avoided from Yr 1 Energy Efficiency*	-	10,627.1	10,627.1
Greenhouse Gas Avoided over Lifetime of Energy Efficiency Project*	-	159,405.9	159,405.9
(1) Reference unitjuggler.com for conversion metric.			
(2) Reference eia.gov for conversion metrics.			

3.2 Economic Development Impact

GEMS Capital (Cash Basis)	This Quarter: 1/1-3/31/18	FY 2018 To Date	Since Program Inception
GEMS Revenues	$ 521,204	$ 1,535,865	$ 2,535,308
GEMS Administrative & Program Costs	$ 298,849	$ 452,490	$ 3,382,391
GEMS Loans Funded	$ 9,157,018	$ 15,610,435	$ 21,075,545
Indirect Economic Impact - Jobs Created/Retained (1)*	137.9	734.0	813.5
State of Hawaii Tax Revenues Generated*	$ 1,702,013	$ 9,056,685	$ 10,037,208

(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.

Projects Financed According to Technology Type/Category			
Solar Photovoltaic Systems (1)	68	344	459
Energy Storage	0	0	0
Lighting Upgrades (2)*	240,000	965,000	965,000
HVAC Upgrades*	7	331	331
Mechanical Upgrades	0	0	0
Controls and Monitoring Devices	38	316	443
Energy/Water Nexus	0	0	0
Total No. of Projects	38	83	158
(1) Including advanced inverters and smart modules.			
(2) DOE Project: Interior and Exterior LEDs			

3.3 Market Expansion Impact

Residential PV Loan Program	This Quarter: 1/1-3/31/18	FY 2018 To Date	Since Program Inception
Total No. of GEMS Loans	28	57	126
Total No. of GEMS Leases	8	16	16
No. Loans/Leases Serving Underserved Market (1)	24	55	112
% Loans/Leases Serving Underserved Market	66.7%	75.3%	78.9%
(1) See AMI Distribution			

Status of Applications (WECC):			
No. of Residential PV Applications Received	0	22	427
No. of Residential PV Applications In Process	0	N/A	N/A
No. of Residential PV Applications Declined	0	13	160
No. Residential PV Applications Withdrawn	18	33	129
No. of Residential PV Applications Loan Docs Accepted	11	N/A	N/A

Status of Applications (Direct):			
No. of Residential PV Applications Received	25	37	37
No. of Residential PV Applications In Process	7	N/A	N/A
No. of Residential PV Applications Declined	9	10	10
No. Residential PV Applications Withdrawn	3	3	3
No. of Residential PV Applications Loan Docs Accepted	16.5	N/A	N/A
Status of Applications (Leases):			
No. of Residential PV Applications Received	34	64	64
No. of Residential PV Applications In Process	26	N/A	N/A
No. of Residential PV Applications Declined	0	0	0
No. Residential PV Applications Withdrawn	2	2	2
No. of Residential PV Applications: Notice to Proceed	36	N/A	N/A
Geographic Location			
No. of Loans on Oahu	36	70	125
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	0	3	8
Profile of Customers			
Number of Customers By Customer FICO Credit Score			
700 and above	29	44	70
675-699	3	13	30
650-674	1	7	17
620-649	2	5	16
600-619	1	4	9
Number of Customers By Income Distribution (self-reported by customers)			
Under $15,000	0	0	0
$15,000-$24,999	0	0	1
$25,000-$34,999	1	1	2
$35,000-$49,999	8	12	15
$50,000-$74,999	4	10	19
$75,000-$99,999	4	10	30
$100,000 and Above	19	40	75
Number of Customers by Area Median Income (1)			
<30% AMI (Extremely Low Income)	0	1	1
30% to <50% AMI (Very Low Income)	9	13	19
50% to <80% AMI (Low Income)	7	12	26
80% to <140% AMI (Moderate Income)	8	29	65
> 140% AMI	12	18	31

(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.

Commercial Loan Program	**This Quarter: 1/1-3/31/18**	**FY 2018 To Date**	**Since Program Inception**
Total Number of GEMS PV Loans	2	9	15
Total Number of GEMS EE Loans	-	1	1
No. of Nonprofits Participating in GEMS	1	6	8

Status of Applications:			
No. of Commercial PV Applications Received	2	16	26
No. of Commercial PV Applications Approved	2	17	23
No. of Commercial PV Applications Declined	0	0	0
No. of Commercial PV Applications Withdrawn	-1*	0	0
No. of Commercial PV Applications Under Review	3	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

* A loan that was withdrawn due to challenges to extend DLNR lease, has informed HGIA that DLNR may consider a lease extension.

Geographic Location (1)			
No. of Loans on Oahu	1	6	11
No. of Loans on Maui	1	3	3
No. of Loans on Molokai	0	0	0
No. of Loans on Lanai	0	0	0
No. of Loans on Hawaii	0	2	2

(1) DOE loan benefits 241 public schools statewide (except Kauai)

No. Small Businesses Participating in GEMS	1	2	2
No. Small Businesses by Gross Receipts*			
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	0	1	1
$1,000,000-$4,999,999	0	0	0
Above $5,000,000	0	0	0
Number of Small Businesses by Average Number of Employees*			
≤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	1	1	1
>1,000 Employees	0	0	0

* Depending on the North American Industry Classification System (NAICS), the size determination is based on gross revenues or number of employees.

Number of Rental Units Supported by GEMS	30	242	748

3.4 Cost Savings Impact

	This Quarter: 1/1-3/31/18	**FY 2018 To Date**	**Since Program Inception**
Aggregate Estimated **Gross** (1) Electricity Cost Savings from Energy Production and Reduction (life of system) ($)	$ 20,900,144	$ 207,922,405	$ 231,489,441
Aggregate Estimated **Gross** Electricity Cost Savings From Energy Production (life of system) ($) (Consumer)	$ 4,810,292	$ 8,718,457	$ 17,041,294
Aggregate Estimated **Gross** Electricity Cost Savings From Energy Production (life of system) ($) (Commercial)	$ 16,089,853	$ 40,289,359	$ 55,533,558
Aggregate Estimated **Gross** Electricity Cost Savings from Energy Efficiency (life of system)($)(Commercial)*	$ -	$ 158,914,590	$ 158,914,590

Average Estimated **Gross** Electricity Cost Savings From Energy Production (life of system) ($) (Consumer)	$ 133,619	$ 119,431	$ 120,009
Average Estimated **Gross** Electricity Cost Savings From Energy Production (life of system) ($) (Commercial)	$ 8,044,926	$ 4,476,595	$ 3,702,237
Average Estimated Gross Electricity Cost Savings from Energy Efficiency (life of system)($)(Commercial)*	$ -	$ 659,397	$ 659,397
Aggregate Estmated **Net** (2) Electricity Cost Savings From Energy Production (life of system) ($) (Consumer)	$ 1,784,479	$ 4,720,531	$ 10,481,837
Aggregate Estimated **Net** Electricity Cost Savings From Energy Production (life of system) ($) (Commercial)	$ 4,446,920	$ 13,195,546	$ 21,712,759
Aggregate Estimated **Net** Electricity Cost Savings From Energy Efficiency (life of system) ($) (Commercial)*	$ -	$ 112,514,590	$ 112,514,590
Average Estimated **Net** Electricity Cost Savings From Energy Production (life of system) ($) (Consumer)	$ 63,739	$ 82,832	$ 83,205
Average Estimated **Net** Electricity Cost Savings From Energy Production (life of system) ($) (Commercial)	$ 2,223,460	$ 1,466,172	$ 1,447,517
Average Estimated **Net** Electricity Cost Savings from Energy Efficiency ($)(Commercial)*	$ -	$ 466,866	$ 466,866
Average System Cost per Watt for All Consumers (PV) ($)	$ 3.95	$ 3.99	$ 3.98
Average System Cost per Watt for Underserved Consumers (PV) ($)	$ 3.96	$ 3.99	$ 3.97
Average System Size for All Consumers (PV) (kW)	9.3	8.7	8.6
Average System Size for Underserved Consumers (PV) (kW)	9.3	8.6	8.6
Project Cost per Watt for All Consumers – Energy Efficiency ($)	0	0	0
Average Project Size for All Consumers – Energy Efficiency (kW)	0	0	0
Project Cost per Watt for Underserved Consumers – Energy Efficiency ($)	0	0	0
Average 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 March 31, 2018		
Current Assets		
	Cash in Bank	$ 122,282,451
	Cash in Treasury	2,132,215
	Total Current Assets	$ 124,414,666
Non Current Assets		
	GEMS Loans Receivable	20,851,564
	Total Assets	**$ 145,266,230**
Liabilities		
	Unearned Revenues	$ 559
	Deposits	503
	Total Liabiliites	**$ 1,062**
Fund Balance		
	Fund Balance - State Treasury	$ 2,131,881
	Fund Balance - GEMS Program	143,133,288
	Total Fund Balance	**$ 145,265,169**
	Total Liablities & Fund Balance	**$ 145,266,230**
STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES		
PERIOD OF JULY 1, 2017 TO March 31, 2018		
Revenues		
	Investment Interest	$ 947,298
	Interest Income from Loans	298,591
	Loan Fees & Other Income	289,976
	Total Revenues	$ 1,535,865
Expenditures		
	Operating Expenses	434,444
	GEMS Program Expenses	39,239
	Reimbursement of Expenses	(21,194)
	Total Expenditures	452,489
Excess/(Deficit)		**$ 1,083,376**
Other Financing Sources & Uses		-
Net Change in Fund Balance		**$ 1,083,376**
Fund Balance, Beginning of Period		144,182,854
Fund Balance, Ending of Period		**$ 145,266,230**

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]omission with its quarterly reporting and Program Notifications"[26] 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]omission, 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".[27]

The GEMS Program submitted its consumer protection policies in a Program Notification to the Commission on July 1, 2015.[28]

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.[29] 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."[30] 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."[31] 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.

---

[26] See "Decision and Order No. 32318," filed in Docket No. 2014-0135 on September 30, 2014, at p. 66.
[27] See "Decision and Order No. 32318," filed in Docket No. 2014-0135 on September 30, 2014, at p. 66.
[28] 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.
[29] See "Decision and Order No. 32318," filed in Docket No. 2014-0135 on September 30, 2014, at p. 60.
[30] See "Decision and Order No. 32318," filed in Docket No. 2014-0135 on September 30, 2014, at p. 95.
[31] See "Division of Consumer Advocacy's Statement of Position," filed in Docket No. 2014-0135 on August 7, 2014, at p. 14.

SERVICE LIST

The original and eight (8) copies of the GEMS Program Quarterly Report have been filed in Docket No. 2014-0135, together with this Certificate of Service, in addition to the following, at the following addresses:

State of Hawaii (8)
Public Utilities Commission
465 S. King Street, #103
Honolulu, Hawaii 96813

Dean Nishina (2)
Executive Director
Department of Commerce and Consumer Affairs
Division of Consumer Advocacy
PO Box 541
Honolulu, Hawaii 96809

Daniel G. Brown (2)
Manager-Regulatory Non-Rate Proceedings
Hawaiian Electric Company, Inc.
Hawaii Electric Light Company, Inc.
Maui Electric Company, Ltd.
P.O. Box 2750
Honolulu, Hawaii 96840-0001

And by electronic transmission to

Rick Reed
Director
Hawaii Solar Energy Association
P.O. Box 37070
Honolulu, HI 96837
rreed@solarsupply.com

Henry Q. Curtis
Vice President for Consumer Issues
Life of the Land
P.O. Box 37158
Honolulu, HI 96837-0158
henry.lifeoftheland@gmail.com

Melissa Miyashiro
Chief of Staff
Blue Planet Foundation
55 Merchant Street, 17th Floor
Honolulu, Hawaii 96813
melissa@blueplanetfoundation.org

Dated: Honolulu, Hawaii, April 25, 2018.