



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

2020 JAN 27 P 4: 03

PUBLIC UTILITIES
COMMISSION

January 27, 2020

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 October 1, 2019 to December 31, 2019. 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

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

Honolulu, Hawaii 96813

Dean Nishina (2)

Executive Director

Department of Commerce and Consumer
Affairs

Division of Consumer Advocacy

PO Box 541

Honolulu, Hawaii 96809

Kevin M. Katsura (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, January 27, 2020.



State of Hawaii

Hawaii Green Infrastructure Authority

GREEN ENERGY MARKET SECURITIZATION PROGRAM

QUARTERLY REPORT:

October 1, 2019 – December 31, 2019

REPORT TO THE
STATE OF HAWAII
PUBLIC UTILITIES COMMISSION

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

January 2020

Table of 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 Portfolio	6
2.2.1	Residential PV – WECC	6
2.2.2	Residential PV – Direct	6
2.2.3	Residential PV – Consumer Leases	7
2.2.4	Residential PV – On-Bill	7
2.2.5	Residential PV – On-Bill Lease Fund	7
2.2.6	Residential EE – On-Bill	7
2.3	Status of Programs: Commercial Portfolio	8
2.3.1	Commercial PV – Direct	8
2.3.2	Commercial PV – On-Bill	8
2.3.3	Commercial EE – On-Bill	8
2.3.4	Commercial EE – Direct	9
2.3.5	State EE Revolving Line of Credit	9
2.4	Status of Programs: Miscellaneous	10
2.5	Status of Programs: Other Programs Under Development	10
2.6	Marketing and Customer Service Activities	11
2.7	Additional Activities	12
3.	Program Metrics	12
3.1	Energy and Environment Impacts	12
3.2	Economic Development Impacts	13
3.3	Market Expansion Impacts	13
3.4	Cost Savings Impacts	16
4.	Financial Summary of Hawaii Green Infrastructure Authority	18
5.	Additional Reporting Requirements	21
5.1	Consumer Protection Policies	21
5.2	Utility Scale Project Financing	21
5.3	Utility Scale Cost Information Update	22

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 Chief Energy Officer (fka 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. 32318¹ (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 Advocate⁶ 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;
- (2) Summaries of all metrics approved pursuant to [the] Program Order, and as developed and approved through the metrics and data collection development process;

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.

- (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 to 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 various loan programs. As of December 31, 2019, \$89.7 million of the GEMS loan funds have been committed, leaving \$38.6 million available to lend. Of these remaining amounts, \$7.4 million are available under the State Revolving Loan Fund and \$31.2 million are available for all other eligible segments.

The aggregate amount committed decreased by some \$400,000 from last quarter primarily because the additional loans made during the quarter were offset by a payment from the Department of Education under the State Revolving Loan Fund and the amount of GEMS financing required for a multi-family project decreased with the leverage of additional private capital.

Under the State Revolving Fund, payments of principal are re-cycled and become available to re-lend to other state agencies. Please refer to Status of Programs, sections 2.2 and 2.3 for additional information.

Additional GEMS Program highlights, as of December 31, 2019, are as follows:

Excess Operational Revenues over Expenditures – YTD FY20 ¹⁰	\$1,722,579
Jobs Created / Retained Since Inception	1,052
State of Hawaii Tax Revenues Generated Since Inception	\$12,780,381
Total Estimated kWh Production / Reduction Over Lifetime Since Inception	785,385,964
Total Petroleum Displaced Over Lifetime (Estimated Barrels)	482,365
Total Greenhouse Gas Avoided Over Lifetime (Estimated Metric Tons CO2)	236,289
% Underserved Residential Households Served ¹¹	79.0%

For the six-month period ending December 31, 2019, the Authority posted Excess Operational Revenues over Operational Expenditures aggregating over \$1.7 million prior to the repayment of interest and principal collected to the Commission, aggregating some \$1.26 million and unrealized losses aggregating

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.

¹⁰ Excess Operational Revenue over Expenditures are before loan repayments returned to the PUC per Order No. 34930 Amending Decision and Order No. 32318 By Changing the Priority uses of GEMS Program Loan Repayments and unrealized gains or losses on investments.

¹¹ Underserved defined as low and moderate-income households. Minimum target for Underserved = 51%.

\$(581,000) for a cumulative Net Change in Fund Balance of \$(118,167). Please refer to the Financial Summary in Section 4 for details on the financial results for the current quarter.

2. Summary of Program Activities

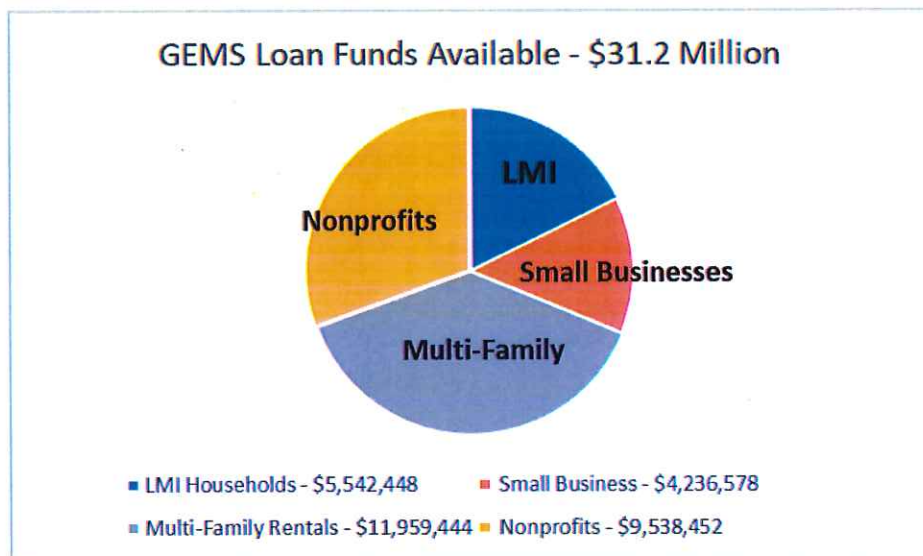
The following is a summary of the activities that have occurred between October 1, 2019 and December 31, 2019.

2.1 Administration

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

- **Board Meeting.** The Authority held a board meeting on October 23, 2019, during which it approved HGIA’s Quarterly Report for the period ended September 30, 2019.
- **Quarterly Report.** The Quarterly Report covering the period of July 1, 2019 to September 30, 2019 was filed with the Commission on October 24, 2019 in Docket No. 2014-0135.
- **Board Meeting.** The Authority held a board meeting on December 20, 2019, during which it approved a Memorandum of Understanding with the Division of Financial Institutions for a Limited Scope Review, accepted HGIA’s Financial Audit for the fiscal year ended June 30, 2019, accepted DBEDT/HGIA’s Bond Fund Audit for the fiscal year ended June 30, 2019, and approved HGIA’s 2019 Report to the Governor and Legislature.
- **2019 Report to the Governor and Legislature.** On December 26, 2019, HGIA’s report was distributed to the Governor, Legislature and other required recipients.
- **Information Requests.** A request for information was filed by the Commission on December 23, 2019 in Docket No. 2014-0135.

With the allocation of remaining loan funds, effective September 1, 2019, HGIA’s Board felt it important to provide visibility on the funds available per segment on an ongoing basis. As such, below is a pie chart reflecting the amount of loan funds available as of December 31, 2019:



During the quarter, \$816,000 in loans were approved and committed for low and moderate-income (“LMI”) households and \$532,000 for small businesses. These increases were offset by a previous

commitment made for a low-income multi-family project, which decreased from \$1.6 million to \$800,000, during the quarter, increasing the amount of funds available for this segment.

The Authority will be embarking on the following initiatives during the upcoming quarter:

- Outsource Accounting & Bookkeeping Services. For a higher level of accounting expertise to decrease the number of PUC Information Requests regarding the Authority’s financial statements, and in accordance with Comptroller’s Memorandum 2019-14, HGIA will be outsourcing its accounting and bookkeeping services.
- Automating Underwriting Process. To increase efficiencies and reduce errors in the manual calculation of metrics, HGIA will be automating its loan underwriting processes.
- Engage Third-Party Review. With a desire to continuously improve itself, the Authority has proactively engaged the services of sister agency, the Division of Financial Institutions (“DFI”) to conduct a third-party review of its lending operations. This review is expected to be completing during 3Q2020.
- Further Automate Concord On-Bill Processing. The Authority’s loan servicer has required additional programming to further automate processes for the GEM\$ on-bill repayment program.

2.2 Status of Programs: Residential Portfolio

2.2.1 Residential PV – WECC Originated

WECC Originated (From 6/2015 to 11/2017)	Applications Received	In Process	Committed	Funded
# of loans	427	0	0	140
\$ value of loans	n/a	n/a	\$0	\$4,836,268

HGIA terminated its contract with WECC on December 31, 2017 and is no longer purchasing loans originated by WECC.

2.2.2 Residential PV – Direct

At a glance (as of 12/31/19):

HGIA Originated (Effective 11/9/17)	Applications Received	In Process ¹²	Committed ¹³	Funded
# of loans	143	6	3	51
\$ value of loans	n/a	n/a	\$88,630	\$1,811,154

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.

2.2.3 Residential PV - Consumer Leases

At a glance (as of 12/31/19):

Consumer Leases (Effective 5/1/17)	Applications Received	In Process ¹⁴	Committed ¹⁵	Funded ¹⁶
# of leases	126	21	10	64
\$ value of loans	n/a	n/a	\$58,978	\$1,811,352

2.2.4 Residential PV - On-Bill

At a glance (as of 12/31/19):

Residential PV OBR (Effective 6/1/18)	Applications Received	In Process ¹⁷	Committed ¹⁸	Funded
# of OBO	418	79	64	31
\$ value of OBO	n/a	n/a	\$1,559,940	\$770,854

2.2.5 Residential PV – On-Bill Lease Fund

At a glance (as of 12/31/19):

OBR Leases (Effective 6/1/18)	Applications Received	In Process ¹⁹	Committed ²⁰	Funded ²¹
# of OBO	44	9	16	15
\$ value of loans	n/a	n/a	\$363,439	\$471,708
			8,916,203 ²²	

2.2.6 Residential EE – On-Bill

At a glance (as of 12/31/19):

Residential EE OBR (Effective 6/1/18)	Applications Received	In Process ²³	Committed ²⁴	Funded
# of OBO	122	16	4	9
\$ value of OBO	n/a	n/a	\$20,682	\$63,028

As indicated on last quarter's report, due to the unexpectedly high number of applicants with disconnection notices, the Authority shall submit a request to the Commission to be able to provide

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 This category includes loans that are being processed and/or pending additional information.

¹⁸ Includes loans that have been approved with executed Loan Documents and solar systems in the process of being installed.

¹⁹ This category includes requests being processed and/or pending additional information.

²⁰ 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.

²¹ May include loans that are partially funded. The remaining amount(s) to be funded are in the "Committed" category.

²² GEMS funds committed to borrowers in the process of originating consumer PV+ Storage leases.

²³ This category includes loan that being processed and/or pending additional information.

²⁴ Includes loans that have been approved with executed Loan Documents and solar systems in the process of being installed.

applicants with disconnection notice(s) a “counter-offer” to finance an energy efficient hot water heater as an option to lower their energy costs.

Delinquent Status for the entire Residential Loan Portfolio as of December 31, 2019:

Loan Balance	Current	%	31 – 60 Days*	%	61 – 90 Days*	%	91+ Days	%
\$5,667,056	\$5,496,798	97.0%	130,773	2.3%	\$39,485	0.7%	\$0.00	0.0%
No.: 190	185	97.4%	4	2.1%	1	0.5%	0	0.0%

As of December 31, 2019, there were five delinquent borrowers. Two borrowers have made payments during the month of January 2020. The Authority continues its collection efforts for the three loans that remain past due.

2.3 Status of Programs: Commercial Portfolio

2.3.1 Commercial PV – Direct

At a glance (as of 12/31/19):

Commercial PV (Effective 11/2016)	Applications Received	In Process ²⁵	Committed ²⁶	Funded ²⁷
# of loans	35	2	12	25
\$ value of loans	n/a	n/a	\$7,485,303	\$15,541,737

2.3.2 Commercial PV – On-Bill

At a glance (as of 12/31/19):

Commercial PV OBR (Effective 6/1/18)	Applications Received	In Process ²⁸	Committed ²⁹	Funded
# of OBO	18	2	4	6
\$ value of OBO	n/a	n/a	\$818,311	\$2,480,952

2.3.3 Commercial EE – On-Bill

At a glance (as of 12/31/19):

Commercial EE OBR (Effective 6/1/18)	Applications Received	In Process ³⁰	Committed ³¹	Funded
# of OBO	3	1	0	0
\$ value of OBO	n/a	n/a	\$0.00	\$0.00

²⁵ The Authority is currently awaiting additional information from the applicant and/or underwriting the loan requested.

²⁶ These loans have been approved and are currently in the documentation process and/or the projects are currently under development.

²⁷ May include loans that are partially funded. The remaining amount(s) to be funded are in the “Committed” category.

²⁸ This category includes loans that are being processed and/or pending additional information.

²⁹ Includes loans that have been approved with executed Loan Documents and solar systems in the process of being installed.

³⁰ This category includes loan that being processed and/or pending additional information.

³¹ Includes loans that have been approved with executed Loan Documents and solar systems in the process of being installed.

2.3.4 Commercial EE – Direct

At a glance (as of 12/31/19):

Commercial EE (Effective 4/2/18)	Applications Received	In Process	Committed ³²	Funded ³³
# of loans	2	1	0	0
\$ value of loans	n/a	n/a	\$0.00	\$0.00

Delinquent Status as of December 31, 2019 for the entire commercial loan portfolio:

Loan Balance	Current	%	31 – 60 Days	%	61 – 90 Days	%	91+ Days	%
\$19,984,517	\$17,561,356	87.9%	\$2,423,161	12.1%	\$0.00	0.0%	\$0.00	0.0%
No.: 44 ³⁴	38	86.4%	6	13.6%	0	0.0%	0	0.0%

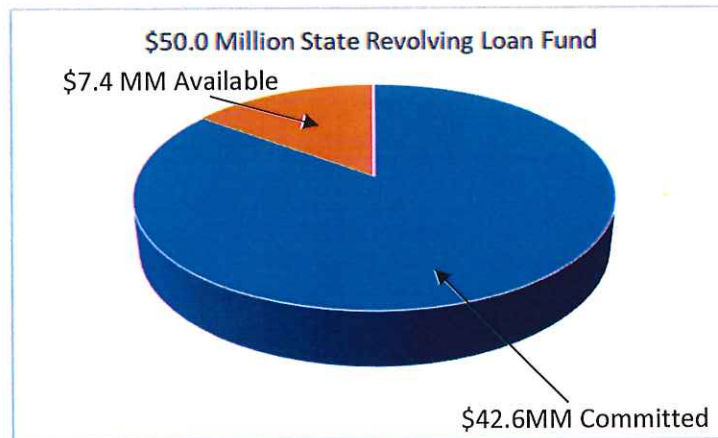
As of December 31, 2019, there were five commercial loans 33 days past due and 1 commercial loan 37 days past due. On January 2, 2020 and January 6, 2020, respectively, we received both December 2019 and January 2020 payments for all six loans.

2.3.5 State Energy Efficiency Revolving Line of Credit

At a glance (as of 12/31/19) from program inception:

	Applications Received	In Process	Committed ³⁵	Funded ³⁶
# of loans	4	2	2	2
\$ value of loans	n/a	n/a	\$14,057,700	\$31,922,428

As of December 31, 2019, there is \$7.4 million available under the State Revolving Loan Fund, however, the Authority is currently processing two applications aggregating \$6.6 million for energy efficiency retrofits for two Agencies.



³² Loan funds will be advanced based on achievement of milestone progress payment criteria by Contractors.

³³ Partially funded loan. The remaining amount(s) to be funded are in the "Committed" category.

³⁴ Although individual metrics for consumer leases are reported under the Residential Portfolio, advances for consumer leases are actually commercial loans. As such, these loans are included in the Commercial Portfolio for delinquency reporting purposes.

³⁵ Loan funds will be advanced based on achievement of milestone progress payment criteria by Contractors.

³⁶ Partially funded loan. The remaining amount(s) to be funded are in the "Committed" category.

Delinquent Status as of December 31, 2019:

Loan Balance	Current	%	31 – 60 Days	%	61 – 90 Days	%	91+ Days	%
\$28,571,211	\$28,571,211	100.0%	\$0.00	0.0%	\$0.00	0.0%	\$0.00	0.0%
No.: 2	2	100.0%	0	0.0%	0	0.0%	0	0.0%

2.4 Status of Programs: Miscellaneous

Energy Service Company (“ESCO”) Financing

In July 2016, Metrus Energy was approved as a capital partner for the Commercial Energy Efficiency Product, however, to date, has not originated any GEMS financed project.

The Authority is currently working with another ESCO on a commercial energy efficiency project for a state agency.

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.

2.5 Status of Programs: Other Programs Under Development

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.

2.6 Marketing and Customer Service Activities

The following table estimates the activities of the Authority's staff in marketing and customer service for the past quarter (since June 1, 2018).

	10/1- 12/31/19	FY20 to Date	Since 6/1/18
GEM\$ Marketing and Program Outreach ³⁷	5	19	63
Prospective Contractor Contacts ³⁸	20	40	230
Prospective Residential Loan Contacts ³⁹	1576	2452	3843
Prospective Consumer Lease Contacts ⁴⁰	40	300	678
Prospective Commercial Loan Contacts ⁴¹	132	264	1100
Existing Contractor Calls and Support ⁴²	15	30	95
Existing Residential Participant/Borrower Servicing ⁴³	60	120	320
Existing Commercial Participant/Borrower Servicing ⁴⁴	61	119	697
Contractor Complaint Resolution ⁴⁵	0	0	1
Participant/Customer Complaint Resolution ⁴⁶	2	2	5
Other ⁴⁷	0	0	0

During the quarter, there were two (2) GEMS related articles published locally and nationally; the Authority made two (2) presentations; and participated in one (1) tradeshow.

During the quarter, the Authority received two complaints. The first involved a GEM\$ obligation with its first on-bill payment reflected on the Participant's September 2019 utility bill. One month later, in October 2019, the borrower decided to pay off the loan, however, as the amount remitted did not match the payoff amount. As such, Concord's automated system did not recognize the loan to be paid in full. This resulted in the Program Charge remaining on the Participant's utility bill for a couple more months before staff was notified and manually stopped the charge. New procedures are now in place to proactively [manually] check payoffs to ensure the Program Charge has been de-activated.

³⁷ This metric will report the number of outbound or Authority originated business development related events, activities and communications by actual event. It also includes GEMS related articles, interviews, presentations, etc.

³⁸ This metric will report the number of contacts, inquiries or meetings it takes to become a GEMS Approved Contractor.

³⁹ This metric will report the number of contacts or inquires for applicants to the GEM\$ residential program.

⁴⁰ This metric will report the number of contacts or inquires for applicants to the GEM\$ lease program.

⁴¹ This metric will report the number of contacts or inquiries for applicants to the GEM\$ commercial program.

⁴² This metric will report the number of service related contacts made with GEMS Approved Contractors not specific to a particular application. Contacts include but are not limited to program updates, presentations, subsequent training, annual review process, etc.

⁴³ This metric will report the number of contacts made with existing Participants, Landlords or Borrowers requiring post-funding servicing. Contacts include but are not limited to collection efforts, address changes, payment inquiries, etc.

⁴⁴ This metric will report the number of contacts made with existing commercial borrowers requiring post funding or partial funding servicing. Contacts include but are not limited to collection efforts, monthly invoices, meetings, etc.

⁴⁵ This metric will report the number of Contractor originated complain resolution situations.

⁴⁶ This metric will report the number of Participant/Borrower originated complaint resolution situations.

⁴⁷ Miscellaneous contacts and activities not included above.

The second complaint involved a solar PV system that was placed in service in May 2019. In mid-December, the borrower called the Authority to complain that her PV System was not working. As a courtesy, HGIA immediately informed her solar contractor of the situation. Upon checking the contractor confirmed that an inverter was not working and has since repaired the system.

2.7 Additional Activities

The following are activities that have occurred since the end of the quarter (December 31, 2019) and will be reported as activities in the next Quarterly Report:

- **Response.** The Authority filed a Response to the Commission’s Information Requests dated December 23, 2019 on January 17, 2020 in Docket No. 2014-0135.

3 Program Metrics

In accordance with the Program Order, the following Program Metrics are being provided for the current quarter, fiscal year-to-date and since program inception. For metrics related to program activities, please see Section 2 of this report.

3.1 Energy and Environment Impact

Clean Energy Production of Projects Financed	10/1-12/31/19	FY20 To Date	Since Program Inception
Installed Capacity (Actual kW)	858	1,478	9,480
Total Yr 1 Production (Estimated kWh)	1,601,069	2,616,710	14,488,964
Total Project Production over Lifetime of Installed PV (Projected kWh, including 0.05% degradation)	12,229,113	32,117,215	250,807,917

Electricity Reductions from Energy Efficiency Projects Financed

Total Yr 1 kWh Reduction (Energy Efficiency)*	270,600	273,735	35,597,542
Total kWh Reduction Over Lifetime of Installed EE*	4,623,576	4,682,385	534,578,047

Petroleum Displaced by Clean Energy and Energy Efficiency Projects (1)

Total Petroleum Displaced/Saved over Lifetime (Estimated barrels)	10,351	22,602	482,365
Petroleum Displaced based on Yr 1 Clean Energy Generation (Estimated barrels)	983	1,607	8,899
Petroleum Displaced Over Lifetime of Installed PV (Estimated barrels)	7,511	19,726	153,927
Cumulative Annual Petroleum Saved from Yr 1 Efficiency Projects*	166.2	168	21,863
Petroleum Saved of Lifetime of Efficiency Projects	2839.7	2,876	328,325

(1) Reference unitjuggler.com for conversion metrics

Greenhouse Gas Avoided (2)	10/1-12/31/19	FY20 To Date	Since Program Inception
Total Greenhouse Gas Avoided (2) Over Lifetime (Clean Energy and Energy Efficiency Projects) (Est. metric tons CO ₂)	5,071	11,074	236,289
Greenhouse Gas Avoided from Clean Energy Yr 1 Production (Est. metric tons CO ₂)	482	788	4,360
Greenhouse Gas Avoided Over Lifetime of Installed PV (Projected metric tons CO ₂)	3,680	9,665	75,420
Greenhouse Gas Avoided from Yr 1 Energy Efficiency*	81	82	10,712
Greenhouse Gas Avoided over lifetime of Energy Efficiency Project*	1,391	1,409	160,870

(2) Reference eia.gov for conversion metrics

3.2 Economic Development Impact	10/1-12/31/19	FY20 To Date	Since Program Inception
GEMS Revenues (Cash Basis)	\$ 1,349,826	\$ 2,267,282	\$10,017,057
GEMS Administrative & Program Costs (Cash Basis) (1)	\$ 294,971	\$ 560,860	\$ 5,026,359
GEMS Loans Funded	\$ 4,694,517	\$18,848,707	\$59,895,939
Indirect Economic Impact - Jobs Created/Retained (2)	\$ 55	\$ 83	\$ 1,052
State of Hawaii Tax Revenues Generated(3)	\$ 683,084	\$ 1,041,544	\$ 12,780,381

(1) Does not include principal and interest repaid to the PUC.

(2) Jobs created or retained is calculated using the State's metric of \$88,165.25/job for 2015; \$91,345.19/job for 2016; \$94,633.63/job for 2017; \$98,034.06/job for 2018 and \$101,550.09/job for 2019.

(3) State taxes generated is calculated as \$0.126 per dollar of investment.

3.3 Market Expansion Impact

Projects Financed According to Technology Type/Category

Solar Photovoltaic	26	45	605
Energy Storage (1)	17	19	81
Lighting Upgrades (2)	0	0	965,000
HVAC Upgrades*	0	0	324
Mechanical Upgrades	0	0	0
Controls and Monitoring Devices	30	547	1,388
Energy/Water Nexus (3)	118	119	204
Total No. of Projects	191	730	967,602

(1) HGIA has financed PV+Storage projects for both the residential and commercial portfolio, however, the Energy Storage Systems are not being financed with GEMS funds.

(2) DOE Project: Interior and exterior LEDs.

(3) Includes solar water heating.

Residential Loan Program	10/1-12/31/19	FY20 To Date	Since Program Inception
Total Number of PV Loans, Direct	1	4	191
Total Number of PV Leases, Direct	0	0	64
Total Number of GEM\$ OBOs for PV (Loans)	16	25	31
Owner Occupied OBOs	16	25	31
Renter OBOs	0	0	0
Total Number of GEM\$ OBOs for PV (Leases)	6	6	15
Total Number of GEM\$ OBOs for EE (SWH)	4	5	9
Owner Occupied OBOs	4	5	9
Renter OBOs	0	0	0
Total Number of GEM\$ OBOs	26	36	46
Number PV Loans/Leases/OBOs Serving Underserved Market (1)	14	22	231
Number EE Loans/Leases/OBOs Serving Underserved Market (1)	3	4	8
% Loans/Leases Serving Underserved Market	63%	65%	79%

(1) See AMI Distribution

Status of Applications (WECC):

No. of Residential PV Applications Received	0	0	427
No. of Residential PV Applications in Process	0	N/A	N/A
No. of Residential PV Applications Declined	0	0	160
No. of Residential PV Applications Withdrawn/Expired	0	0	127
No. of Residential PV Applications Loan Docs Accepted	0	N/A	N/A

Status of Applications (Direct):

No. of Residential PV Applications Received	3	8	143
No. of Residential PV Applications in Process	6	N/A	N/A
No. of Residential PV Applications Declined	1	1	52
No. of Residential PV Applications Withdrawn/Expired	2	3	31
No. of Residential PV Applications Loan Docs Accepted	1	N/A	N/A

Status of Applications (Leases - all Leases):

No. of Residential PV Applications Received	5	20	170
No. of Residential PV Applications in Process	30	N/A	N/A
No. of Residential PV Applications Declined	0	1	2
No. of Residential PV Applications Withdrawn/Expired	2	25	47
No. of Residential PV Applications Notice to Proceed	12	N/A	N/A

Status of Applications (GEM\$ OBR-PV and EE):

No. of Residential GEM\$ Applications Received	56	237	540
No. of Residential GEM\$ Applications in Process	95	N/A	N/A
No. of Residential GEM\$ Applications Declined	16	62	146
No. of Residential GEM\$ Applications Withdrawn/Expired	107	136	201
No. of Residential GEM\$ Applications OBO Accepted	40	N/A	N/A

Geographic Location of Financing Products

Oahu	13	21	267
Maui	11	14	26
Molokai	0	0	2
Lanai	0	0	0
Hawaii	3	5	15

Profile of Customers Financed:

Number of Customers by Customer FICO Credit Score (2)

700 and above	1	2	145
675-699	0	2	49
650-674	0	0	29
620-649	0	0	18
600-619	0	0	9
Below 600	0	0	2

(2) Excludes on-bill applicants and 3 leases prepaid in full

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	0	0	4
\$35,000-\$49,999	0	1	18
\$50,000-\$74,999	3	4	38
\$75,000-\$99,999	5	8	68
\$100,000 and above	19	27	181

Number of Customers by Area Median Income (1)

<30% AMI (Extremely Low Income)	0	0	5
30% to <50% AMI (Very Low Income)	1	3	32
50% to <80% AMI (Low Income)	6	8	58
80% to <140% AMI (Moderate Income)	10	15	143
>140% AMI	10	14	72

(1) Area Median Income as provided by the U.S. Department of Housing and Urban Development (HUD)

Commercial Loan Program	10/1-12/31/19	FY20 To Date	Since Program Inception
Total Number of GEMS PV Loans	1	4	25
Total Number of GEMS EE Loans	0	1	2
Total Number of GEM\$ OBOs, PV	1	3	6
Owner-User	0	2	2
Commercial Tenant	0	0	0
Total Number of GEM\$ OBOs, EE	0	0	0
Owner-User	0	0	0
Commercial Tenant	0	0	0
Number of Nonprofits Participating in GEMS	0	4	17
Number of Small Businesses Participating in GEMS	1	2	7
Number of Rental Units Supported by GEMS	198	198	1074

Geographic Location of Loans (1)

Oahu	2	6	20
Maui	0	0	5
Molokai	0	1	1
Lanai	0	0	0
Hawaii	0	0	5

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

Number of 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	1
\$500,000-\$999,999	0	0	1
\$1,000,000-\$4,999,999	0	1	2
Above \$5,000,000	0	0	0

Number of Small Businesses by Average Number of Employees*

10 Employees or less	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	2
>1,000 Employees	0	0	0

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

3.4 Cost Savings Impact

	10/1-12/31/19	FY20 To Date	Since Program Inception
Aggregate, Estimated, Gross* Electricity Cost Savings (\$)			
from Energy Production and Reduction	\$ 11,953,394	\$ 20,638,908	\$ 281,793,018
from Energy Production (Consumer)	\$ 2,345,794	\$ 3,852,796	\$ 38,013,545
from Energy Production (Commercial)	\$ 7,987,041	\$ 15,141,973	\$ 83,150,652
from Energy Efficiency (Consumer)	\$ 86,740	\$ 110,320	\$ 180,412
from Energy Efficiency (Commercial)	\$ 1,533,819	\$ 1,533,819	\$ 160,448,409
Average, Estimated, Gross* Electricity Cost Savings (\$)			
from Energy Production (Consumer)	\$ 101,991	\$ 110,080	\$ 115,484
from Energy Production (Commercial)	\$ 2,662,347	\$ 1,892,747	\$ 2,598,458
from Energy Efficiency (Consumer)	\$ 21,685	\$ 22,064	\$ 20,046
from Energy Efficiency (Commercial)	\$ 1,533,819	\$ 1,533,819	\$ 53,482,803

* Gross savings calculation for the life of the system assumes a historical utility rate increase of 5.72% annually

	10/1-12/31/19	FY20 To Date	Since Program Inception
Aggregate, Estimated, Net** Electricity Cost Savings (\$)			
from Energy Production (Consumer)	\$ 1,188,306	\$ 2,292,996	\$ 21,983,156
from Energy Production (Commercial)	\$ 4,893,575	\$ 7,215,210	\$ 46,300,753
from Energy Efficiency (Consumer)	\$ 43,314	\$ 55,982	\$ 88,464
from Energy Efficiency (Commercial)*	\$ 1,169,281	\$ 1,169,281	\$ 113,683,871
Average, Estimated, Net** Electricity Cost Savings (\$)			
from Energy Production (Consumer)	\$ 51,665	\$ 65,514	\$ 72,792
from Energy Production (Commercial)	\$ 1,631,192	\$ 901,901	\$ 1,446,899
from Energy Efficiency (Consumer)	\$ 10,829	\$ 11,197	\$ 9,829
from Energy Efficiency (Commercial)	\$ 1,169,281	\$ 1,169,281	\$ 37,894,624

**Net savings calculations include tax credits, assume historical utility rate increase of 5.72% annually and are net of loan payments required

Average System Cost per Watt for All Consumers (PV) (\$)	\$ 3.91	\$ 3.85	\$ 4.02
Average System Cost per Watt for Underserved Consumers (PV)	\$ 3.90	\$ 3.87	\$ 4.04
Average System Size for All Consumers (PV) (kW)	8.7	9.2	9.2
Average System Size for Underserved Consumers (PV) (kW)	9.0	9.1	9.0
Project Cost per kWh for All Consumers -- Energy Efficiency (\$)*	\$ 0.15	\$ 0.16	\$ 0.17
Average Project Size for All Consumers -- Energy Efficiency (kW)	n/a	n/a	n/a
Project Cost per kWh for Underserved Consumers -- Energy Efficiency (\$)*	\$ 0.15	\$ 0.17	\$ 0.17
Average Project Size for Underserved Consumers -- Energy Efficiency (kW)	n/a	n/a	n/a

* Calculated for all projects regardless of island

4 Financial Summary of Hawaii Green Infrastructure Authority

Hawaii Green Infrastructure Authority Balance Sheet As of December 31, 2019

ASSETS

Current Assets

Cash in Bank Total	\$	11,369,858
Cash in Treasury		1,258,175

Total Cash \$ **12,628,033**

Investments 83,180,692

Total Cash and Investments \$ **95,808,725**

Interest Receivable \$ -

Other Receivables 23,867

Total Receivables \$ **23,867**

Noncurrent Assets

GEMS Loans Receivable \$ 54,365,037

GEMS Loans Receivable - Treasury 0

Other Noncurrent Assets 2,279

Total Noncurrent Assets \$ **54,367,316**

Total Assets \$ **150,199,908**

LIABILITIES AND EQUITY

Liabilities

Current Liabilities

Accounts Payable - PUC \$ 3,027,900

Accrued Expenses 91,202

Other Current Liabilities 31,214

Total Current Liabilities \$ **3,150,316**

Total Noncurrent Liabilities \$ **3,780**

Total Liabilities \$ **3,154,096**

Fund Balance, Beginning 9/30/19 (From last quarterly report, unaudited) \$ **147,331,459**

Adjustment from audit (19,994)

Net Income (loss) for the Quarter 10/1/19-12/31/19 (265,653)

Fund Balance, Ending \$ **147,045,812**

TOTAL LIABILITIES AND FUND BALANCE \$ **150,199,908**

Other Receivables of \$23,867 are funds that have been recorded, but have yet to be transferred between accounts.

Other Noncurrent Assets are unfunded amounts reserved for future maintenance costs.

Accounts Payable – PUC represents principal and interest repaid on loans. Of the total amount, \$1,768,079 are repayments from fiscal 2019 and \$1,259,821 are repayments received in fiscal 2020.

Accrued Expenses of \$91,202 are accumulated sick leave, vacation pay, etc. representing accruals required GAAP from HGIA’s audit for the fiscal year ended June 30, 2019.

Other Current Liabilities of \$31,214 include unapplied cash (cash that is received by our Loan Servicer, but has yet to be applied to a loan payment, and contract obligations for specific purposes.

Noncurrent Liabilities include maintenance and other reserves.

**Hawaii Green Infrastructure Authority
Revenues and Expenditures
For the Quarter: October 1, 2019 to December 31, 2019**

Revenues from Operations	
Investment Interest	\$ 1,042,989
Interest Income on Loans	285,811
Other Income	21,026
Total Revenues from Operations	\$ 1,349,826
Operational Expenditures	
Salaries and Benefits	\$ 194,739
Office and Administrative Expenses	1,438
Program Expenses	98,794
Total Operational Expenditures	\$ 294,971
Revenues Over (Under) Expenditures	\$ 1,054,855
Payments to PUC/PBF	
PUC Repayment - Principal	\$ 469,930
PUC Repayment - Interest	285,811
Total PUC Repayment	\$ 755,740
Unrealized Gains (Losses)	(564,768)
Net Change in Fund Balance	\$ (265,653)
Fund Balance	
Beginning of Period, Audited	\$ 147,311,465
End of Period	\$ 147,045,812

The financial report above was reformatted to distinguish between operational revenues and expenditures⁴⁸ from non-operational revenues and expenditures.

Other Income consists of fees collected from various program activities.

Bank and investment fees comprise approximately 33% or \$32,500 of Program Expenses for this quarter while actual program expenses aggregate some \$66,200. Although the bank and investment fees are higher than HGIA's previous bank, the yield on investments earned more than offsets the higher fees being assessed.

Unrealized Losses represents the decline in the market value of the bond investments resulting from a rising interest rate environment during the period. Unlike a realized gain/loss, an unrealized gain/loss represents a valuation adjustment that is subject to change in future periods in which the bond investments are held by the Authority. A realized gain/loss is incurred when a bond investment is sold. The Authority's investment strategy is to hold bond investments to maturity, thereby mitigating the risk of realized losses.

The following is a 6-month, fiscal year to date Statement of Revenue and Expenditures.

Hawaii Green Infrastructure Authority
Revenues and Expenditures
For the Six-Month Period: July 1, 2019 to December 31, 2019

Revenues from Operations		
Investment Interest	\$	1,647,639
Interest Income on Loans		570,505
Other Income		65,295
Total Revenues from Operations	\$	2,283,439
Operational Expenditures		
Salaries and Benefits	\$	378,230
Office and Administrative Expenses		5,271
Program Expenses		177,359
Total Operational Expenditures	\$	560,860
Revenues Over (Under) Expenditures	\$	1,722,579
Payments to PUC/PBF		
PUC Repayment - Principal	\$	689,316
PUC Repayment - Interest		570,505
Total PUC Repayment	\$	1,259,822
Unrealized Gains (Losses)		(580,925)
Net Change in Fund Balance	\$	(118,167)

⁴⁸ Operational revenues and expenditures are ongoing income or expenses for running a business (or in this case, a Loan Program).

Fund Balance		
Beginning of Period, Un-audited	\$	147,183,973
Adjustment from 6/30/19 Audit		(19,994)
Beginning of Period, Audited and Adjusted	\$	147,163,979
Net Change in Fund Balance		(118,167)
End of Period	\$	147,045,812

As mentioned under Section 2.1 Administration, the Authority is embarking on four initiatives during this fiscal year that were unbudgeted, but will have budgetary impacts, as follows:

- Outsource Accounting & Bookkeeping Services
- Automating Underwriting Process.
- Engage Third-Party Review
- Further Automate Concord On-Bill Processing.

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”⁴⁹ 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”.⁵⁰

The GEMS Program submitted its consumer protection policies in a Program Notification to the Commission on July 1, 2015.⁵¹ 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.⁵²

The Authority has not initiated any utility-scale projects during the quarter, however, due to the interest in leveraging the GEM\$ on-bill repayment mechanism to enable more LMI and hard to reach ratepayers to participate in Community Solar, the Authority is designing a GEM\$ for CBRE Program, which will be submitted to the Commission for approval.

⁴⁹ See “Decision and Order No. 32318,” filed in Docket No. 2014-0135 on September 30, 2014, at p. 66.

⁵⁰ See “Decision and Order No. 32318,” filed in Docket No. 2014-0135 on September 30, 2014, at p. 66.

⁵¹ 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.

⁵² See “Decision and Order No. 32318,” filed in Docket No. 2014-0135 on September 30, 2014, at p. 60.

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.”⁵³ 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.”⁵⁴

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. HGIA will update the Commission on utility system cost information should discussions resume.

⁵³ See “Decision and Order No. 32318,” filed in Docket No. 2014-0135 on September 30, 2014, at p. 95.

⁵⁴ See “Division of Consumer Advocacy’s Statement of Position,” filed in Docket No. 2014-0135 on August 7, 2014, at p. 14.