BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF HAWAII

In the Matter of the Application of
THE STATE OF HAWAII
DEPARTMENT OF BUSINESS,
ECONOMIC DEVELOPMENT,
AND TOURISM
Docket No. 2014-0135

For an Order Approving the Green Infrastructure Loan Program.

PROGRAM NOTIFICATION No. 13 FOR
THE GREEN INFRASTRUCTURE LOAN PROGRAM,
ATTACHMENT A
AND
CERTIFICATE OF SERVICE

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PROGRAM NOTIFICATION NO. 13 FOR
THE GREEN INFRASTRUCTURE LOAN PROGRAM

TO THE HONORABLE PUBLIC UTILITIES COMMISSION
OF THE STATE OF HAWAII:

The Hawaii Green Infrastructure Authority of the State of Hawaii ("HGIA" or "Authority")\(^1\) submits this Program Notification through its Deputy Attorney General.

I. Background

Decision and Order No. 32318, filed on September 30, 2014 in Docket No. 2014-0135 (the "Program Order") approved the "Application of the Department of Business, Economic Development, and Tourism for an Order Approving the Green Infrastructure Loan Program," filed on June 6, 2014 ("Application") for the use of funds deposited in the Green Infrastructure Special Fund to establish and institute the Green Infrastructure Loan Program ("GEMS Program"), subject to the modifications described within the Program Order.\(^2\) Within the

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\(^1\) 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.

\(^2\) See Program Order, at 1.
Application, a governance process was proposed for the GEMS Program that used mechanisms for updates or modifications from the approved GEMS Program guidelines. In this process, Program Notifications are used to provide additional details on GEMS Program components including project, program, financing, or other arrangements (clean energy technology, parties intended to benefit, loan program or other arrangements, and credit sources and funding); minimum lending, credit or investing criteria; and repayment mechanisms and processes. The Application stated that the Department of Business, Economic Development, and Tourism ("DBEDT") or the Authority will use Program Notifications to report and certify information on implementation of key GEMS Program components that are within the scope of the Program Order parameters and exhibits issued by the Commission.

The Program Order approved the Program Notification process with a modification requiring that the Authority file any GEMS Program Notification with the Commission no less than fifteen (15) business days prior to implementation instead of the proposed ten (10) days stated in the Application.

The Division of Consumer Advocacy ("Consumer Advocate" or "CA") recommended that DBEDT submit market assessments and cost-benefit analyses for the financing of technologies related to solar PV that will mitigate grid saturation prior to DBEDT’s submission of a Program Notification and the Commission then directed DBEDT "to provide the information identified by the Consumer Advocate concerning market assessments and cost-benefit analyses for

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1 Paraphrased from HRS §269-170 and 269-171, as referenced in Application, at 15 (emphasis added).
2 Prior to the Authority’s establishment, DBEDT is authorized to exercise the Authority’s powers and is required to effectuate the Authority’s responsibilities (see HRS § 196-63). Accordingly, references to the “Authority” and “HGIA” in this Program Notification include DBEDT acting on behalf of the Authority, as explained in footnote 1 above.
3 Application, at 15.
4 See Program Order, at 84.
approved non-Solar PV clean energy technology with any Program Notification that is submitted to finance those technologies.\(^8\)

**II. Program Notification**

The purpose of this Program Notification is to provide additional information, in alignment with H.B. No. 1508, H.D.2, S.D.2, C.D.1\(^9\), to create a sub-fund\(^10\) within the Authority’s green infrastructure special fund and convert $50,000,000 of GEMS funds into a revolving line of credit\(^11\) for any State Agency or Department to finance cost-effective\(^12\) commercial energy efficiency ("EE") measures,\(^13\) subject to sub-fund availability, on an on-going basis. The Department of Education’s outstanding loan balance and contract commitments as of June 30, 2018 shall be included under this revolving line of credit. Financing commercial EE for state agencies or departments is consistent with the Authority’s Fiscal 2019 Annual Plan submitted to the Commission\(^14\) and Exhibit 9: Eligible Clean Energy Technologies of the Application, as amended. Commercial EE was proposed as an eligible technology in DBEDT’s Statement of

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\(^1\) See Program Order, at 85.
\(^2\) This bill passed final reading by the House and Senate on May 1, 2018 and was transmitted to the Governor on May 2, 2018.
\(^3\) Sub-fund for the purposes of HB 1508, H.D.2, S.D.2, C.D.1 and this Program Notification, shall mean a separate fund established within the Authority’s Green Infrastructure Special Fund for a specific purpose.
\(^4\) Revolving line of credit for the purposes of HB 1508, H.D.2, S.D.2, C.D.1 and this Program Notification, shall mean a type of credit in which loan advances are made for eligible purposes and where repaid principal deposited back into the sub-fund may be re-borrowed.
\(^5\) Cost-effective for the purposes of HB 1508, H.D.2, S.D.2, C.D.1 and this Program Notification, shall mean that utility bill savings are achieved by the installation of an energy efficiency measure, provided that the utility bill savings exceed the energy-efficiency measure’s installation and carrying costs in an amount sufficient to repay a [GEMS] loan issued to finance the installation.
\(^6\) Energy-efficiency measure for the purposes of HB 1508, H.D.2, S.D.2, C.D.1 and this Program Notification, shall mean any type of project conducted or technology implemented, to reduce the consumption of energy in a public building. The types of projects conducted or technology implemented may be in a variety of forms but shall be designed to reduce electric utility costs.
Position\textsuperscript{15} and approved in the Program Order.\textsuperscript{16} Using GEMS capital for commercial EE is consistent with the core tenets of the GEMS Program, since the use of GEMS funds for commercial EE will help to remove financing market barriers in the current commercial EE financing market, broaden access to EE, and reduce energy consumption and related costs.

To satisfy requirements for the financing of “approved non-Solar PV clean energy technology” stated above, the Authority is providing a market assessment for commercial EE financing and parameters around bill savings targets to serve as a cost-benefit analysis, as consistent with the steps taken in the Application and Program Order to approve Solar PV as an eligible technology.

The Commission allows the Authority flexibility in allocating funds between customer types and did not restrict funding to the underserved\textsuperscript{17} so that the long-term viability of the GEMS Program is addressed.\textsuperscript{18} The Commission also did not oppose the Authority operating with flexibility in the finalization of details as long as sufficient oversight and reporting is established.\textsuperscript{19}

A. GEMS Commercial EE Revolving Line of Credit for State Agencies

The Authority is requesting approval to create a $50,000,000 GEMS Commercial Energy Efficiency Revolving Line of Credit (RLC) for State Agencies to provide all state agencies and

\begin{footnotesize}
\begin{itemize}
\item See Program Order, at 46.
\item See “Decision and Order No. 32318,” filed in Docket No. 2014-0135 on September 30, 2014 at p. 55.
\item Id. at p. 76.
\end{itemize}
\end{footnotesize}
departments the opportunity to obtain low-cost financing from GEMS, at an interest rate of 3.50%, to reduce energy costs and consumption by installing energy-efficiency measures.

Thoughtful and forward-looking in its approval of Decision and Order 32318, the Commission did not limit GEMS program funding to only Solar PV systems, as it did not believe it to be either prudent or useful to foreclose or otherwise limit the ability of the GEMS Program to fund any potential technology solutions that may provide significant benefits to ratepayers. Accordingly, the list of clean energy technologies on Exhibit 9 was amended to include, among other technologies, commercial energy efficiency (LED systems, heating, ventilating, and air conditioning ("HVAC") and related systems).\textsuperscript{20} This request is consistent with Order No. 34421 approving Program Notification No. 11 - GEMS energy efficiency financing for a state agency (Department of Education), on February 22, 2017, as well as Order No. 35375 conditionally approving Program Notification No. 12 - commercial energy efficiency measures, as a GEMS approved technology, on April 2, 2018.

Although the Authority will continue to seek collaborative opportunities to leverage private capital with GEMS capital, due to the predetermined pricing of the RLC, it may be difficult for private capital to participate. As such, advances under the RLC may be a form of unleveraged debt with financing terms similar to that described in HRS § 36-41.\textsuperscript{21} Deployment of GEMS capital will be through a term loan for purposes consistent with the GEMS program, as specified in this Program Notification Attachment A, GEMS Commercial EE Revolving Line of Credit for State Agencies.

In accordance with HB 1508, H.D.2, S.D.2, C.D.1, advances under this RLC shall be priced at 3.5% a year, provided that these loans shall not adversely affect the sustainability of the sub-

\textsuperscript{20} Id. at p. 46-48.
\textsuperscript{21} See "Hawaii Revised Statutes §36-41 Energy Retrofit and Performance Contracting for Public Facilities."
fund or the Hawaii green infrastructure special fund such that the replenishment of funds requires a higher interest rate in other financing agreements or an appropriation from the general fund. In concert with the Legislature's vision for a sustainable RLC, the Authority is requesting that in addition to the repaid principal, the Commission allow the interest earned on advances under the RLC to be deposited into the RLC for the Authority to pay the administrative and program costs of the GEMS Program, as well as replenish and/or grow the capital available to lend under the RLC. The Authority recognizes that it will take some time before the funds lent interest free to the Department of Education are repaid and subsequently re-loaned at an interest rate of 3.50% to aggregate an amount sufficient for the RLC to become self-sustaining; however, with the interest earned used to offset costs, the Legislature's goal for a sustainable RLC will eventually be accomplished.

While advances under the RLC shall be subject to the same reporting metrics as previous loan products, the Authority and Hawaii Energy have agreed that in order to be consistent in the calculation of the energy efficiency measures installed with GEMS financing, Hawaii Energy shall provide the Authority with the energy efficiency outcomes for reporting on HGIA's Quarterly Report. HGIA shall include a footnote in its Quarterly Report indicating that the Energy Efficiency metrics being reported will also be included in Hawaii Energy's reports. As such, Hawaii Energy's reports will include the State's energy efficiency outcomes for the Hawaiian Electric Companies' territories. HGIA's report shall reflect the GEMS-related contribution towards the State's EEPS goals.

Ongoing flexibility may be necessary to allow for program adjustments based on product performance and continued evaluation of the GEMS Program.
B. Market Assessment

Market assessments will typically provide an organization with data to adequately assess the potential size of a [new] market to determine feasibility in investing time and resources to capture a portion of the market being assessed. For purposes of this Program Notification, this market assessment is indifferent to specific manufacturers or brands of energy conservation measures ("ECM") and instead attempts to analyze the market for ECM financing.

EnerNoc Utility Solutions Consulting Inc. prepared and presented the State of Hawaii Energy Efficiency Potential Study, Project #1448 (the "Study")\(^{22}\) to the Commission on January 15, 2014. The Study categorized Hawaii’s 2012 energy consumption into five sectors: residential (32%), military (11%), water/wastewater (4%), street lighting (.5%) and commercial (52%). According to the Study, the commercial sector (which includes government) consumes over half of statewide electricity use\(^{23}\) and "[t]he majority of the statewide EE savings potential is found in the commercial sector."\(^{24}\)

The following table reflects the Utility Electricity Consumption (kWh) from 2005 to 2014 of the 25 State agencies that participating in DBEDT’s report to the Legislature, Lead by Example State of Hawaii Agencies’ Energy Initiatives FY 2013-2014:


\(^{23}\) See Study, Figure ES-2, at v.

\(^{24}\) See Study, Executive Summary, at xiii.
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<th>Agency</th>
<th>FY05</th>
<th>FY06</th>
<th>FY07</th>
<th>FY08</th>
<th>FY09</th>
<th>FY10</th>
<th>FY11</th>
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<td>2.845</td>
<td>190</td>
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While agencies have made some progress from the highest total consumption level in 2007 of 712,766,748 kWh to the lowest total consumption level in 2012 of 641,649,761 kWh, as indicated in Table 1, consumption has subsequently increased by 2014 exceeding 2009 levels.

The Authority recognizes that there are many factors that may cause kWh consumption to increase or decrease (i.e. weather, additional buildings, etc.); however, the purpose of the table is to reinforce the potential for all state agencies to decrease kWh consumption through energy efficiency retrofits.

This collective reduction in consumption would significantly and positively contribute to the achievement of Hawaii’s Energy Efficiency Portfolio Standard (“EEPS”) requirements and

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25 See HRS § 269-96.
would also decrease the amount of generation required to achieve the State’s Renewable Portfolio Standard ("RPS") target of 100% by 2045.26

As described in Program Notification No. 11, state agencies typically have three financing options available through conventional and traditional providers: (1) direct loan financing; (2) Energy Service Company Contracts / vendor finance; and (3) bond financing, all of which entail higher financing fees and/or costs and would likely be more expensive and less flexible, which could result in a possible barrier for the Agency to implement its energy efficiency project.

While the Authority lacks access to detailed data about the specific terms of the rapidly evolving financing products that are available for commercial EE, particularly with respect to programs of this size, direct loan financing with a commercial bank will typically not allow 100% financing and will require a more aggressive amortization schedule. This practice significantly decreases the net anticipated savings from the lower kWh consumption, or in some cases, may be more than the anticipated savings, which would require the Legislature to approve general funds to repay the loan obligation. Contracting with an Energy Service Company (ESCO) that provides its own vendor financing is always an option available to state agencies; however, the sales cycle for these ESCO arrangements can be lengthy due to the considerable engineering work required and the size of the transaction. Additionally, the cost of capital provided by the ESCO may be significantly higher than GEMS, dependent on the credit quality and banking relationship of the ESCO, as it will typically need to leverage its capital with debt to finance the upfront cost of the EE installations. The interest cost for a similar ESCO project

26 See HRS § 269-92.
appears to be approximately 6%.\textsuperscript{27} Lastly, the issuance of a bond to finance EE installations will not only be a lengthy process but also expensive, with average bond issuance costs estimated to range from 1.07% to 2.31\%\textsuperscript{28} in addition to ongoing bond interest, audit and reporting expenses. The Authority also notes that the Federal Reserve Board has been slowly increasing the Federal Funds Rate over the last several years, which is likely to increase the average cost of capital in the future. The Authority therefore concludes that there is a gap in the available conventional financing options for commercial EE infrastructure investments that currently meets the needs of state agencies, and so providing GEMS financing will accelerate the achievement of the State’s EEPS goals.

C. Cost-Benefit Analysis

According to Exhibit 13\textsuperscript{29} in DBEDT’s Application, the Authority requires a minimum savings net of financing costs for energy efficiency projects under the GEMS Program. As such, the Authority will only lend on projects that can provide the ratepayer with a projected reduction in annual electrical consumption (as measured in kWh/year) that meets this minimum savings requirement.

The following is a representative example of a type of ECM that could be financed for a state agency, assuming an ECM project cost of $19,140,000, and compares immediate net savings between four financing options: (1) Commercial Banks; (2) ESCOs; (3) Bond Financing

\textsuperscript{27} See Auditor of the State of Hawaii, \textit{Audit of the Department of Transportation’s Energy Performance Contracts}, Report No. 15-18, at 7, December 2015. This program involved financing for a $167.7 million lease and installation of EE equipment. While the precise financing terms program are unknown, the estimated cost of capital was determined based on the total loan principal shown in the report, the total interest paid on the loan, and the 15 year term described in the tables to calculate a cost of capital assuming a simple compounding interest loan structure.

\textsuperscript{28} See Figure 1 in the “Doubly Bound, The Cost of Issuing Municipal Bonds” Research Brief published by the Haas Institute for a Fair and Inclusive Society at UC Berkeley and the ReFund America Project, December 2015.

\textsuperscript{29} 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, “Exhibit 13.”
and (4) GEMS.

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<th>Bank</th>
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<td>15-year</td>
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<td>$1,822,592</td>
<td>$1,991,071</td>
<td>$2,428,711</td>
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<td>7.17%</td>
<td>19.39%</td>
<td>21.18%</td>
<td>25.83%</td>
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</table>

GEMS financing provides the State with the highest estimated immediate net savings, making it a more attractive option with a lower risk of default as loan payments will be made from utility bill savings.

D. Alignment with GEMS Program

Though government agencies were not named as underserved in the Application, the Commission-approved GEMS Program was not intended to be exclusively dedicated to underserved customers” and the Commission allowed the Authority flexibility in allocating funds between customer types in order to ensure that the long-term viability of the GEMS Program is addressed. This is consistent with the Legislature’s finding that green infrastructure financing program should utilize “excess loan program funds as a funding source to finance additional green infrastructure installations, subject to regulatory guidelines and approval.” The Commission also did not oppose the Authority operating with flexibility in the finalization of details as long as sufficient oversight and reporting is established.

30 Program Order, at 55.
31 The Application named underserved homeowners, renters and non-profit customers as the underserved market. See Application, at 3.
32 See Program Order, at 55.
34 See Program Order, at 76.
The Authority notes that state agencies constitute a significant component of energy consumption in Hawaii and that investment in renewable energy infrastructure and efficiency improvements by government agencies has been limited. Additionally, the Authority notes that government agencies are among those ratepayers who are hard-to-reach with traditional market-competitive financing agreements due to procurement limitations and the obligation to include contractual provisions which make the continuation of contracts contingent upon the allocation of funds. For these reasons, the use of GEMS Program funds to provide low-cost financing to enable commercial EE investment fills a gap not served by the capital market.

Though the Authority does not intend to add government agencies generally to the critical underserved groups as identified in the Application through this notification, the Authority notes that the Program Order does not restrict the GEMS Program from providing government agencies access to eligible clean energy technologies in its approval. Further, the Authority notes that the Commission found that "the GEMS Program will provide both direct and indirect benefits to a range of individuals and organizations."36

The Authority will work collaboratively with Hawaii Energy, the Public Benefits Fund Administrator (PBFA) and require applicants to consult with Hawaii Energy during the application process to ensure that the Agency’s proposed energy efficiency measure(s) meet or exceed the PBFA’s enhanced efficiency levels and requirements.

**III. Subsequent Authority Action**

Unless informed otherwise by the Commission, upon completion of the fifteen (15) business day-term of Program Notification, HGIA shall create a $50,000,000 sub-fund to be named the

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35 See Application, Ex. 6 (as referenced by Program Order, at 8).
36 See Program Order, at 55.
GEMS Commercial Energy Efficiency Revolving Line of Credit for State Agencies, transfer the balances and contract commitments under the Department of Education's loan to this credit facility, and implement the deployment of capital to finance commercial energy efficiency for state agencies effective July 1, 2018. Any subsequent changes to the details described herein will be proposed through the GEMS Annual Plan.

Submitted this 9th day of May, 2018, in Honolulu, Hawaii

[Signature]
Gregg J. Kinkley
Deputy Attorney General for the Authority
**ATTACHMENT A**

**GEMS COMMERCIAL ENERGY EFFICIENCY (EE) REVOLVING LINE OF CREDIT FOR STATE AGENCIES**

<table>
<thead>
<tr>
<th>Objective</th>
<th>To expand access and affordability of energy efficiency retrofits for all State Agencies and Departments.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eligible Technology</td>
<td>Lighting (LED), HVAC, water heating, thermal storage pumps, motors, refrigeration, control systems, other commercial EE technologies.</td>
</tr>
<tr>
<td></td>
<td>Proposed energy efficiency measures must meet or exceed the public benefit fee administrator’s enhanced efficiency levels and requirements</td>
</tr>
<tr>
<td>Allowable Uses</td>
<td>Financing is available for up to 100% of the cost of the energy improvements.</td>
</tr>
<tr>
<td></td>
<td>Other financeable cost may include: financing cost; required electrical upgrades to conform to building permits; electrical permits; and other soft costs and structural improvements.</td>
</tr>
<tr>
<td>Capital Structure</td>
<td>May leverage third party capital.</td>
</tr>
<tr>
<td>Term</td>
<td>Maximum term will dependent on the estimated useful life of the equipment being financed, not to exceed twenty (20) years.</td>
</tr>
<tr>
<td>Eligible EE Installers</td>
<td>GEMS will conduct due diligence on a case by case basis.</td>
</tr>
<tr>
<td>Interest Rate</td>
<td>3.50%, fixed for the term of the loan.</td>
</tr>
<tr>
<td>Loan Amount</td>
<td>Minimum loan amount of $50,000.</td>
</tr>
<tr>
<td>Borrower</td>
<td>State of Hawaii Agencies or Departments for locations served by Hawaiian Electric Company or its affiliates.</td>
</tr>
<tr>
<td>Credit Criteria</td>
<td>GEMS program underwriting guidelines</td>
</tr>
<tr>
<td>Savings</td>
<td>Savings required per Exhibit 13.</td>
</tr>
<tr>
<td>Repayment</td>
<td>Advances under the RLC may be repaid either On-Bill or direct billed.</td>
</tr>
</tbody>
</table>
CERTIFICATE OF SERVICE

I hereby certify that I have this date, in addition to filing an original and eight copies with the Commission, served one (1) or two (2) copies of the foregoing GEMS Program Notification, together with this Certificate of Service, by making personal service (P) or service by electronic mail (M), to the following and at the following addresses:

State of Hawaii (P)(8)                      Dean Nishina (P)(2)
Public Utilities Commission                Executive Director
Department of Budget and Finance            Department of Commerce and Consumer
465 S. King Street, #103                    Affairs
Honolulu, Hawaii 96813                     Division of Consumer Advocacy
                                            P.O. Box 541
                                            Honolulu, Hawaii 96809

Daniel G. Brown (P)(2)                    Melissa Miyashiro (M)(1)
Manager-Regulatory Non-Rate Proceedings    Chief of Staff
Hawaii Electric Company, Inc.              Blue Planet Foundation
Hawaii Electric Light Company, Inc.        55 Merchant Street, 17th Floor
Maui Electric Company, Ltd.               Honolulu, Hawaii 96813
P.O. Box 2750                              
Honolulu, Hawaii 96840-0001                

Henry Q. Curtis (M)(1)                     Rick Reed (M)(1)
Vice President for Consumer Issues         Director
Life of the Land                            Hawaii Solar Energy Association
P.O. Box 37158                             P.O. Box 37070
Honolulu, HI 96837-0158                    Honolulu, HI 96837

Dated: Honolulu, Hawaii, May 9, 2018.

HAWAII GREEN INFRASTRUCTURE AUTHORITY

Gwen S Yamamoto Lau
Executive Director