



**STATE OF HAWAII**  
**DEPARTMENT OF EDUCATION**  
P.O. BOX 2360  
HONOLULU, HAWAII 96804

OFFICE OF THE SUPERINTENDENT

**LEGISLATIVE REPORT**

**SUBJECT:** Relating to the Department of Education Utilities Budget

**REFERENCE:** Act 122, (SLH 2014) HB 1700, HD1, SD1, CD1, Section 4, Item 21  
(Adding new Section 19.4 to Act 134, SLH 2013)

**ACTION REQUESTED:** DOE report to the Legislature not later than 20 days prior to the  
convening of the regular session of 2015.

**DOE REPORT:**  
**Introduction:** This report provides an update on Department of Education utility  
expenditures and consists of: 1) projected costs for electricity, water,  
sewer, and gas through fiscal year 2015-16; 2) projected cost  
savings through fiscal year 2015-16 from renewable energy and  
other projects; and 3) projected operating and capital costs, means of  
financing, and installation timeline for renewable energy and other  
projects to be implemented through fiscal year 2015-16.

**Findings:** See attached

**RECOMMENDATIONS:** None

A handwritten signature in blue ink, appearing to read "K. Matayoshi".

Kathryn S. Matayoshi  
Superintendent  
Department of Education

1-27-15  
Date

**Department of Education  
Utilities Budget**

Section 19.4 of the Supplemental Appropriations Act requires the Department of Education (DOE) to report to the Legislature on its utility costs:

- 1) *Projected costs for electricity, water, sewer and gas through fiscal year 2015-16.*

<b>UTILITY</b>	<b>FY 2014-15</b>	<b>FY 2015-16</b>
Electricity	\$45,848,639	\$47,589,136
Gas	\$567,364	\$564,303
Water	\$6,164,156	\$6,373,380
Sewer	\$7,564,238	\$7,771,804
<b>Total</b>	<b>\$60,144,397</b>	<b>\$62,298,623</b>

- 2) *Projected cost savings during each of the same fiscal years from renewable energy and other projects planned to be implemented by the DOE.*

For the DOE's pilot photovoltaic (PV) program, projected savings are:

	<b>FY 2014-15</b>	<b>FY 2015-16</b>
Pilot PV Savings	\$1,040,996	\$1,730,131

For the Ka Hei<sup>(a)</sup> PV program, the DOE is working on a Power Purchase Agreement (PPA), in which the DOE purchases the electricity generated by the PV installed through Ka Hei for an agreed upon price per kilowatt hour (the developer of the system pays construction costs). As the purchase price for the PPA has not been finalized, projected cost savings have yet to be determined. Cost savings will also depend on the size of the PV system installed and the amount of sun received on the respective campuses.

For the Ka Hei lighting retrofit program (campus-wide review of existing efforts and retrofit all interior and exterior lights), cost savings have not been determined as savings will depend on the specific project selected. Funding for lighting retrofit projects will also have to be secured.

For the Ka Hei plug load<sup>(b)</sup> program (to identify and pilot plug load control devices), planning is still underway and savings have not been determined. Funding for the plug load project will also need to be secured.

- 3) *Projected operating and capital costs, means of financing, and installation timeline for the renewable energy and other projects planned to be implemented by the DOE through fiscal year 2015-16.*

The DOE has a PPA with Hawaii Pacific Solar for the pilot PV program. The DOE is purchasing electricity generated by the installed campus PV systems, and is not incurring operating or capital costs.

The DOE is also doing a PPA with OpTerra for the electricity generated by the PV systems installed in schools planned through the Ka Hei program. Hence, there will be no operating or capital costs associated with the Ka Hei PV program.

For the proposed Ka Hei lighting retrofit program, options have to be reviewed. Implementation of any project will be subject to the availability of funds.

For the proposed Ka Hei plug load control program, specific plans are still being developed. Implementation of project will be subject to the availability of funds.

See attachments for timeline and status of the PV and energy efficiency programs (Attachment A – Pilot PV; Attachment B – Ka Hei PV; and Attachment C – Other Energy Efficiency Measures).

- a) Ka Hei is a comprehensive five-year endeavor that began this year designed to boost student success through the implementation of renewable energy sources, boost campus modernizations, and increase real-world educational opportunities in science, technology, engineering, and math (STEM). The partnership is with OpTerra, an energy service company, in collaboration with Hawaiian Electric Company.
- b) Plug-in products are a leading source of energy consumption; plug load control devices are intended to effectively manage energy consumption through the control and monitoring of outlet usage.

## Attachment A

**PHOTOVOLTAIC PILOT PROJECT  
AS OF OCTOBER 2014**

#	SCHOOL	COMPLEX	PROJECT DESIGN/CONSTRUCTION STATUS	CONSTRUCTION COMPLETION DATE	NET ENERGY METERING STATUS	(EST.) DATE PV ONLINE
1	Aiea High	Aiea	System completed in 2012	2012	Completed	2/1/2012
2	Pearl Ridge Elem	Aiea	System completed in 2013	2013	Completed	2/1/2013
3	Webbing Elem	Aiea	System completed in 2013	2013	Completed	12/1/2013
4	Waimalu Elem	Aiea	System completed in 2014	2014	Completed	2/1/2014
5	Aiea Intermediate	Aiea	System completed in 2014	2014	Completed	5/2/2014
6	Scott Elem	Aiea	System completed in 2014	2014	Completed	6/24/2014
7	Aiea Elem	Aiea	Pending HECO interconnection study	TBD	Pending HECO interconnection study	TBD
8	Kahuku High & Intermediate	Kahuku	System completed in 2012	2012	Completed	4/1/2012
9	Kaawa Elem	Kahuku	System completed in 2014	2014	Completed	10/30/2014
10	Hauula Elem	Kahuku	Design completed	12/31/2014	Pending HECO NEM approval	TBD
11	Kahuku Elem	Kahuku	Design completed	TBD	Pending HECO interconnection study	TBD
12	Sunset Beach Elem	Kahuku	Design completed	TBD	Pending HECO interconnection study	TBD
13	Laie Elem	Kahuku	Pending installation of grounding transformer	1/31/2015	Completed	1/31/2015
14	Kaimuki High	Kaimuki	System completed in 2012	2012	Completed	4/1/2012
15	Kuhio Elem	Kaimuki	System completed in 2013	2013	Completed	8/1/2013
16	Lunalilo Elem	Kaimuki	System completed in 2013	2013	Completed	11/1/2013
17	Washington Middle	Kaimuki	System completed in 2013	2013	Completed	12/1/2013
18	Palolo Elem	Kaimuki	System completed in 2014	2014	Completed	1/1/2014
19	Jarrett Middle	Kaimuki	System completed in 2014	2014	Completed	4/1/2014
20	Aliiolani Elem	Kaimuki	Design completed	3/31/2015	Completed	4/30/2015
21	Hokulani Elem	Kaimuki	Design completed	3/31/2015	Completed	4/30/2015
22	Ala Wai Elem	Kaimuki	System completed in 2014	10/30/2014	Completed	10/30/2014
23	Jefferson Elem	Kaimuki	Under construction	12/15/2014	Completed	1/15/2015
24	Hanalei Elem	Kapaa	Preparing to mobilize for construction	2015	Completed	2015
25	Kapaa High	Kapaa	Preparing to mobilize for construction	1/31/2015	Completed	2/28/2015
26	Kapaa Middle	Kapaa	Under construction	1/31/2015	Completed	2/28/2015
27	Kappa Elem	Kapaa	Preparing to mobilize for construction	1/31/2015	Completed	2/28/2015
28	Kilauea Elem	Kapaa	Preparing to mobilize for construction	4/30/2015	Completed	5/31/2015
29	Kauai High	Kauai	System completed in 2014	10/7/2014	Completed	10/7/2014
30	Wilcox Elem	Kauai	Construction completed in 2014	10/7/2014	Completed	10/7/2014
31	Kamakahelei Middle	Kauai	Under construction	12/31/2014	Completed	12/31/2014
32	Kaumualii Elem	Kauai	Under construction	12/31/2014	Completed	12/31/2014
33	Koloa Elem	Kauai	Completed	9/12/2014	Completed	9/30/2014
34	Moanalua High	Moanalua	System completed in 2012	2012	Completed	10/1/2012
35	Radford High	Radford	System completed in 2012	2012	Completed	8/1/2012
36	Aliamanu Middle	Radford	System completed in 2012	2012	Completed	12/1/2012
37	Waianae High	Waianae	System completed in 2012	2012	Completed	4/1/2012
38	Leihoku Elem	Waianae	System completed in 2013	2013	Pending HECO interconnection study	TBD

#	SCHOOL	COMPLEX	PROJECT DESIGN/CONSTRUCTION STATUS	CONSTRUCTION COMPLETION DATE	NET ENERGY METERING STATUS	(EST.) DATE PV ONLINE
39	Maili Elem	Waianae	Pending HECO interconnection study	2015	Pending HECO interconnection study	TBD
40	Makaha Elem	Waianae	System completed in 2014	8/22/2014	Completed	9/14/2014
41	Waianae Elem	Waianae	Pending HECO interconnection study	2015	Pending HECO interconnection study	2015
42	Waianae Intermediate	Waianae	Pending HECO interconnection study	2015	Pending HECO interconnection study	2015
43	Elele Elem	Waimea	Under construction	10/31/2014	Completed	11/15/2014
44	Kalaheo Elem	Waimea	Preparing to mobilize for construction	2015	Completed	2015
45	Kekaha Elem	Waimea	Preparing to mobilize for construction	2015	Completed	2015
46	Waimea Canyon Middle	Waimea	Preparing to mobilize for construction	2015	Completed	2015
47	Waimea High	Waimea	Preparing to mobilize for construction	2015	Completed	2015

**Attachment B**

**KA HEI PROGRAM  
PHOTOVOLTAIC INSTALLATION  
AS OF 11/21/2014**

Phase 1 is scheduled to be completed within 12 months of the execution of the first task order with the DOE. Unfortunately, the Hawaiian Electric timeline to review and approve the NEM permits has delayed the initial plan to begin Phase 1 and is out of the control of OpTerra ES and OSFSS. Contingency plans have allowed for deployment of schools as they gain HECO approval. Instead of waiting for all 30 schools from HECO, the first 10 approved are in the process of going to bid to start construction in January. Educational pilot for the first 13 schools was not affected by HECO and is on schedule.

\*Completion dates subject to change based on jurisdictional authorities approvals (e.g. Hawaiian Electric Co., C&C Permitting, DOE contract execution)

#	SCHOOL	PHASE	PROJECT DESIGN/CONSTRUCTION STATUS	CONSTRUCT COMPLETE DATE	NET ENERGY METERING STATUS/UTILITY APPROVAL	(EST.) DATE PV ONLINE
1	Castle High	I	Preliminary design complete.	Oct-15	NEM Application submitted; under HECO review.	Nov-15
2	Central Middle	I	Preliminary design complete.	Oct-15	NEM Application submitted; not yet accepted by HECO.	Nov-15
3	Farrington High	I	Preliminary design complete.	Oct-15	NEM Application submitted; System 1 under HECO review; System 2 application accepted.	Nov-15
4	Fern Elem	I	Preliminary design complete.	n/a	NEM Application submitted; HECO requiring interconnection requirements study (IRS); site on-hold indefinitely	n/a
5	Honowai Elem	I	Preliminary design complete. Final design in-progress.	Sep-15	NEM Application submitted; under HECO review.	Oct-15
6	Iliahi Elem	I	Final design complete. DOE execution of PPA contract expected by Jan. 2015.	Sep-15	NEM Application submitted; under HECO review.	Oct-15
7	Kaahumanu Elem	I	Preliminary design complete. Final design in-progress.	Sep-15	NEM Application for System 1 approved by HECO. NEM Application for System 2 not yet accepted by HECO.	Oct-15
8	Ka'ala Elem	I	Final design complete. DOE execution of PPA contract expected by Jan. 2015.	Sep-15	NEM Application submitted; under HECO review.	Oct-15

#	SCHOOL	PHASE	PROJECT DESIGN/CONSTRUCTION STATUS	CONSTRUCT COMPLETE DATE	NET ENERGY METERING STATUS/UTILITY APPROVAL	(EST.) DATE PV ONLINE
9	Kahalu'u Elem	I	Preliminary design complete. Final design in progress.	Sep-15	NEM Application submitted; under HECO review.	Oct-15
10	Kaimuki Middle	I	Preliminary design complete. Final design in progress.	Sep-15	NEM Applications submitted; System 1 approved; System 2 under HECO review. Currently in collaborative concept design process with HECO	Oct-15
		I	Net-Zero Microgrid Campus	tbd		tbd
11	Kalihi Elem	I	Preliminary design complete.	Sep-15	NEM Application submitted; under HECO review.	Oct-15
12	Kalihi Kai Elem	I	Preliminary design complete.	Oct-15	NEM Application submitted; not yet accepted by HECO.	Nov-15
13	Kalihi Waena Elem	I	Preliminary design complete.	n/a	NEM Application submitted; HECO requiring IRS study; site on-hold indefinitely	n/a
14	Kapalama Elem	I	Final design complete. DOE execution of PPA contract expected by Jan. 2015.	Sep-15	NEM Application submitted; under HECO review.	Oct-15
15	Kauluwela Elem	I	Preliminary design complete. Final design in progress.	Sep-15	NEM Application approved by HECO.	Oct-15
16	Kipapa Elem	I	Final design complete. DOE execution of PPA contract expected by Jan. 2015.	Sep-15	NEM Application submitted; under HECO review.	Oct-15
17	Lanakila Elem	I	Preliminary design complete.	Sep-15	NEM Application approved by HECO.	Oct-15
18	Lehua Elem	I	Preliminary design complete. Final design in progress.	Sep-15	NEM Application submitted; under HECO review.	Oct-15
19	Leilehua High	I	Final design complete. DOE execution of PPA contract expected by Jan. 2015.	Sep-15	NEM Application submitted; under HECO review.	Oct-15
20	Linapuni Elem	I	Preliminary design complete.	n/a	NEM Application submitted; HECO requiring IRS study; site on-hold indefinitely	n/a
21	Makakilo Elem	I	Preliminary design complete. Final design in progress.	Sep-15	NEM Application submitted; under HECO review.	Oct-15
22	McKinley CSA	I	Preliminary design complete. Final design in progress.	Sep-15	NEM Application approved by HECO.	Oct-15

#	SCHOOL	PHASE	PROJECT DESIGN/CONSTRUCTION STATUS	CONSTRUCT COMPLETE DATE	NET ENERGY METERING STATUS/UTILITY APPROVAL	(EST.) DATE PV ONLINE
23	McKinley High	I	Final design complete. DOE execution of PPA contract expected by Jan. 2015.	Sep-15	NEM Application approved by HECO.	Oct-15
24	Mililani Uka Elem	I	Preliminary design complete.	n/a	NEM Application submitted; HECO requiring IRS study; site on-hold indefinitely	n/a
25	Pearl City Elem	I	Preliminary design complete. Final design in progress.	Sep-15	NEM Application submitted; under HECO review.	Oct-15
26	Royal Elem	I	Preliminary design complete. Final design in progress.	Sep-15	NEM Application approved by HECO.	Oct-15
27	Shafter Elem	I	Preliminary design complete. Final design in progress.	Sep-15	NEM Application submitted; under HECO review.	Oct-15
28	Wahiawa Elem	I	Preliminary design complete.	Oct-15	NEM Application submitted; not yet accepted by HECO.	Nov-15
29	Waipahu High	I	Final design complete. DOE execution of PPA contract expected by Jan. 2015.	Sep-15	NEM Application approved by HECO.	Oct-15
30	Wilson Elem	I	Final design complete. DOE execution of PPA contract expected by Jan. 2015.	Sep-15	NEM Application submitted; under HECO review.	Oct-15
31	school tbd	I	Maui net-zero campus (school with zero net energy consumption, meaning the total amount of energy used by the school on an annual basis is roughly equal to the amount of renewable energy created on the school campus); Initial site visits completed, short-list of candidate sites have been selected; Preliminary designs in-progress to determine most cost-effective and beneficial site. The remainder of the timeline is highly dependent upon the PUC regulatory process, which could be as short as 3 months or as long as 24 months.	tbd	n/a	tbd

#	SCHOOL	PHASE	PROJECT DESIGN/CONSTRUCTION STATUS	CONSTRUCT COMPLETE DATE	NET ENERGY METERING STATUS/UTILITY APPROVAL	(EST.) DATE PV ONLINE
32	school tbd	I	Hawaii island net-zero campus (school with zero net energy consumption, meaning the total amount of energy used by the school on an annual basis is roughly equal to the amount of renewable energy created on the school campus); Initial site visits completed, short-list of candidate sites have been selected; Preliminary designs in-progress to determine most cost-effective and beneficial site. The remainder of the timeline is highly dependent upon the PUC regulatory process, which could be as short as 3 months or as long as 24 months.	tbd	n/a	tbd

Attachment C

KA HEI PROGRAM  
ENERGY EFFICIENCY MEASURES  
AS OF 11/21/14

\*Completion dates subject to change based actual DOE decision and contract execution date of measures to be implemented.

#	SCHOOL	PHASE	TYPE OF ENERGY EFFICIENCY MEASURE	STATUS OF PROJECT	PROJECT COMPLETION DATE
1	Castle High	1	Lighting retrofit program (campus-wide review and retrofit of all exterior and interior lights)	Design options completed. DOE Office of School Facilities and Support Services is reviewing options.	Sep-15
2	Central Middle	1	Lighting retrofit	Design options completed. DOE OSFSS is reviewing options.	Sep-15
3	Farrington High	1	Lighting retrofit	Design options completed. DOE OSFSS is reviewing options.	Sep-15
4	Fern Elem	1	Lighting retrofit	Design options completed. DOE OSFSS is reviewing options.	Sep-15
5	Honowai Elem	1	Lighting retrofit	Design options completed. DOE OSFSS is reviewing options.	Sep-15
6	Iliahi Elem	1	Lighting retrofit	Design options completed. DOE OSFSS is reviewing options.	Sep-15
7	Kaahumanu Elem	1	Lighting retrofit	Design options completed. DOE OSFSS is reviewing options.	Sep-15
8	Ka'ala Elem	1	Lighting retrofit	Design options completed. DOE OSFSS is reviewing options.	Sep-15
9	Kahalu'u Elem	1	Lighting retrofit	Design options completed. DOE OSFSS is reviewing options.	Sep-15
10	Kaimuki Middle	1	Lighting retrofit	Design options completed. DOE OSFSS is reviewing options.	Sep-15
11	Kalihi Elem	1	Lighting retrofit	Design options completed. DOE OSFSS is reviewing options.	Sep-15
12	Kalihi Kai Elem	1	Lighting retrofit	Design options completed. DOE OSFSS is reviewing options.	Sep-15
13	Kalihi Waena Elem	1	Lighting retrofit	Design options completed. DOE OSFSS is reviewing options.	Sep-15

#	SCHOOL	PHASE	TYPE OF ENERGY EFFICIENCY MEASURE	STATUS OF PROJECT	PROJECT COMPLETION DATE
14	Kapalama Elem	1	Lighting retrofit	Design options completed. DOE OSFSS is reviewing options.	Sep-15
15	Kauluwela Elem	1	Lighting retrofit	Design options completed. DOE OSFSS is reviewing options.	Sep-15
16	Kipapa Elem	1	Lighting retrofit	Design options completed. DOE OSFSS is reviewing options.	Sep-15
17	Lanakila Elem	1	Lighting retrofit	Design options completed. DOE OSFSS is reviewing options.	Sep-15
18	Lehua Elem	1	Lighting retrofit	Design options completed. DOE OSFSS is reviewing options.	Sep-15
19	Leilehua High	1	Lighting retrofit	Design options completed. DOE OSFSS is reviewing options.	Sep-15
20	Linapuni Elem	1	Lighting retrofit	Design options completed. DOE OSFSS is reviewing options.	Sep-15
21	Makakilo Elem	1	Lighting retrofit	Design options completed. DOE OSFSS is reviewing options.	Sep-15
22	McKinley CSA	1	Lighting retrofit	Design options completed. DOE OSFSS is reviewing options.	Sep-15
23	McKinley High	1	Lighting retrofit	Design options completed. DOE OSFSS is reviewing options.	Sep-15
24	Mililani Uka Elem	1	Lighting retrofit	Design options completed. DOE OSFSS is reviewing options.	Sep-15
25	Pearl City Elem	1	Lighting retrofit	Design options completed. DOE OSFSS is reviewing options.	Sep-15
26	Royal Elem	1	Lighting retrofit	Design options completed. DOE OSFSS is reviewing options.	Sep-15
27	Shafter Elem	1	Lighting retrofit	Design options completed. DOE OSFSS is reviewing options.	Sep-15
28	Wahiawa Elem	1	Lighting retrofit	Design options completed. DOE OSFSS is reviewing options.	Sep-15
29	Waipahu High	1	Lighting retrofit	Design options completed. DOE OSFSS is reviewing options.	Sep-15

#	SCHOOL	PHASE	TYPE OF ENERGY EFFICIENCY MEASURE	STATUS OF PROJECT	PROJECT COMPLETION DATE
30	Wilson Elem	1	Lighting retrofit	Design options completed. DOE OSFSS is reviewing options.	Sep-15
31	schools tbd	1	Plug load controls program (Program intended to identify and pilot plug load control devices. Plug-in products are leading source of energy consumption. Plug load control devices are intended to effectively manage energy consumption through the control and monitoring of outlet usage.)	RFP being issued 11/24/14. Scale and specific schools to be potentially deployed tbd.	Sep-15