

PBFA TAG Meeting

June 23, 2017

1132 Bishop St., Honolulu HI

Agenda

8:30 Introductions

8:45 Hawai'i Energy

- Update: PY2016
- Overview: PY2017 Annual Plan
- TAG Q&A

9:45 Break

10:00 EEM Contractor

- Team Background
- Priorities for 2017
- TAG Q&A

10:15 EM&V Topics

- Verification for PY 2016
- EM&V Research Updates
- TAG Input

10:35 EEPS Review Discussion

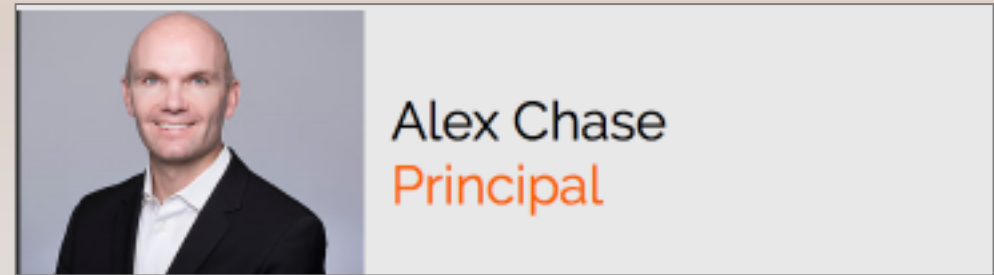
10:55 Wrap Up

Hawai'i Energy

EEM Contractor Team Background

2050 Partners, Inc.

- California Benefits Corporation founded in 2015
- Headquartered in Orinda, CA (www.2050partners.com)
- Ted Pope, overall EEM Team Lead
- Whitney Pope, HE/ODC monthly invoice review processing
- Alex Chase, ad hoc input



CAD Consulting



Steve Schiller

- Steve's work focuses on the use of clean energy for mitigating pollution and GHG emissions
- Professional engineer
- Over thirty years of experience with a focus on demand-side energy efficiency, renewables and independent power
- Senior manager or CEO of three firms, including his own which was sold to an international, energy and technology company
- Overseen the development and administration of efficiency programs in many states, and in other countries, for utilities, local, state and federal government agencies and organizations
- Steve has worked with staffs and commissioners in over a dozen states on energy efficiency program issues including helping develop frameworks for implementing their energy efficiency policies and regulations
- A particular focus has been on EM&V. He has prepared many of the guides used in the efficiency industry
- Since 2009, Steve had been an advisory member of the James Flanagan Associates EEM team

- Principal of Schiller Consulting, Inc.
- Affiliate and Senior Advisor – [Lawrence Berkeley National Laboratory Electricity Markets and Policy Group](#)
- Arbitrator and Mediator – [American Arbitration Association](#) National Roster of Neutrals

Industry: Participation – examples:

- Founder and Board Chair Emeritus, [California Energy Efficiency Industry Council](#)
- Founding Board Member of the Clean Economy Network
Former Entrepreneur in Residence - [California Clean Energy Fund](#)

Research Example: Former Senior Advisor - [University of California's California Institute for Energy and Environment](#)

Renewables and Efficiency for Climate Change and Pollution

Prevention Examples:

- For over seven years member of the Small Scale Working Group of the Executive Board of the [UNFCCC Clean Development Mechanism](#).
- former Vice Chair of the [California Climate Action Registry](#) Board (appointed by State Senate) and one of the founders of [The Climate Registry](#).

Volunteer Example: Board Director – Rebuilding Together Oakland

Priorities for 2017

- Ramp up on day to day oversight of HE and EM&V contracts
- PY2016 Verification oversight
- Refine EM&V “Framework” document
- Begin EEPS review process
- PY2017 EM&V plan
- Work with Hawai’i Energy to adjust reporting and plan documents to reflect 3 year cycle.
- Continue funding approach assessment
- TAG Format and Frequency

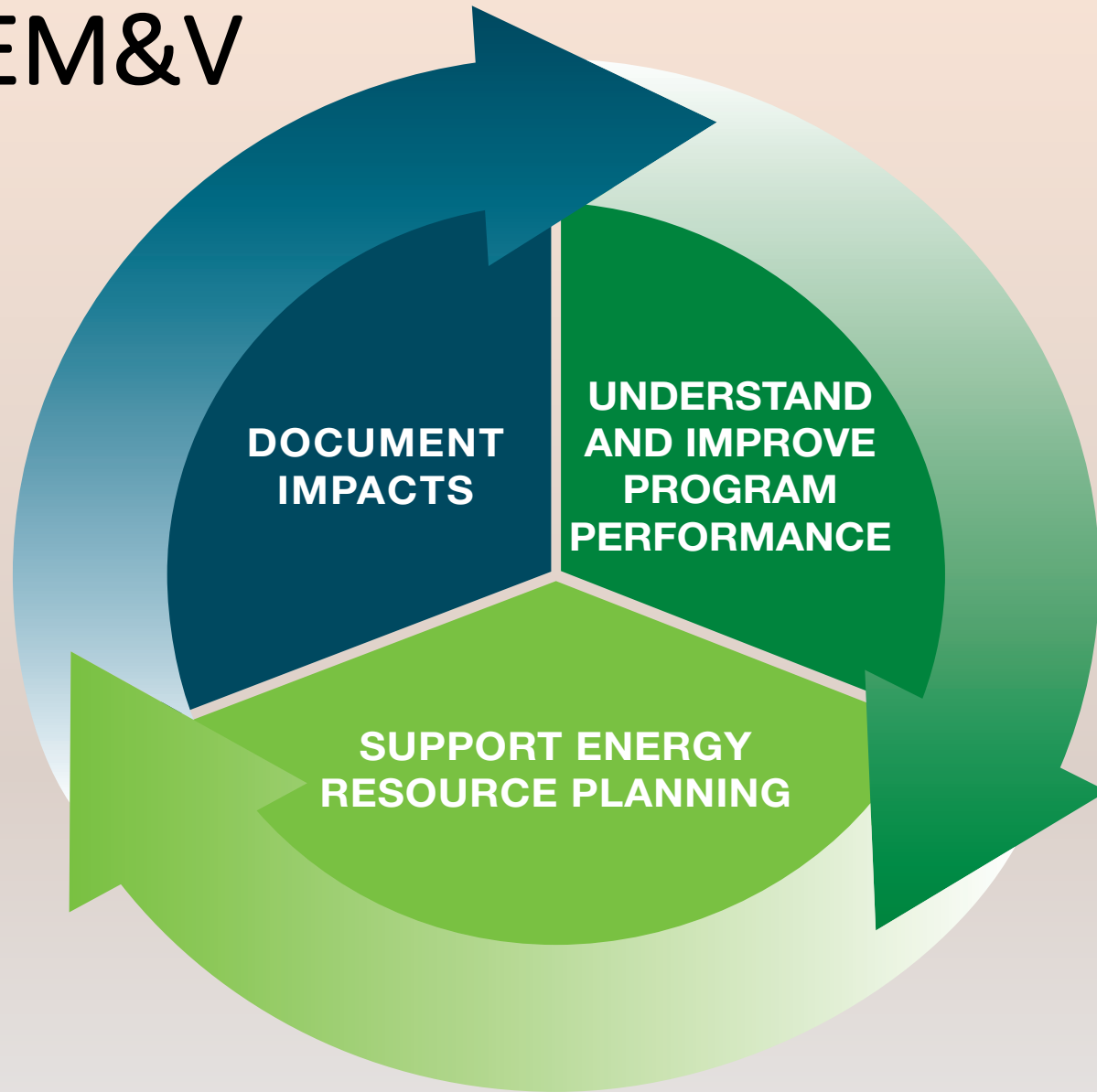
Evaluation Measurement and Verification - EM&V



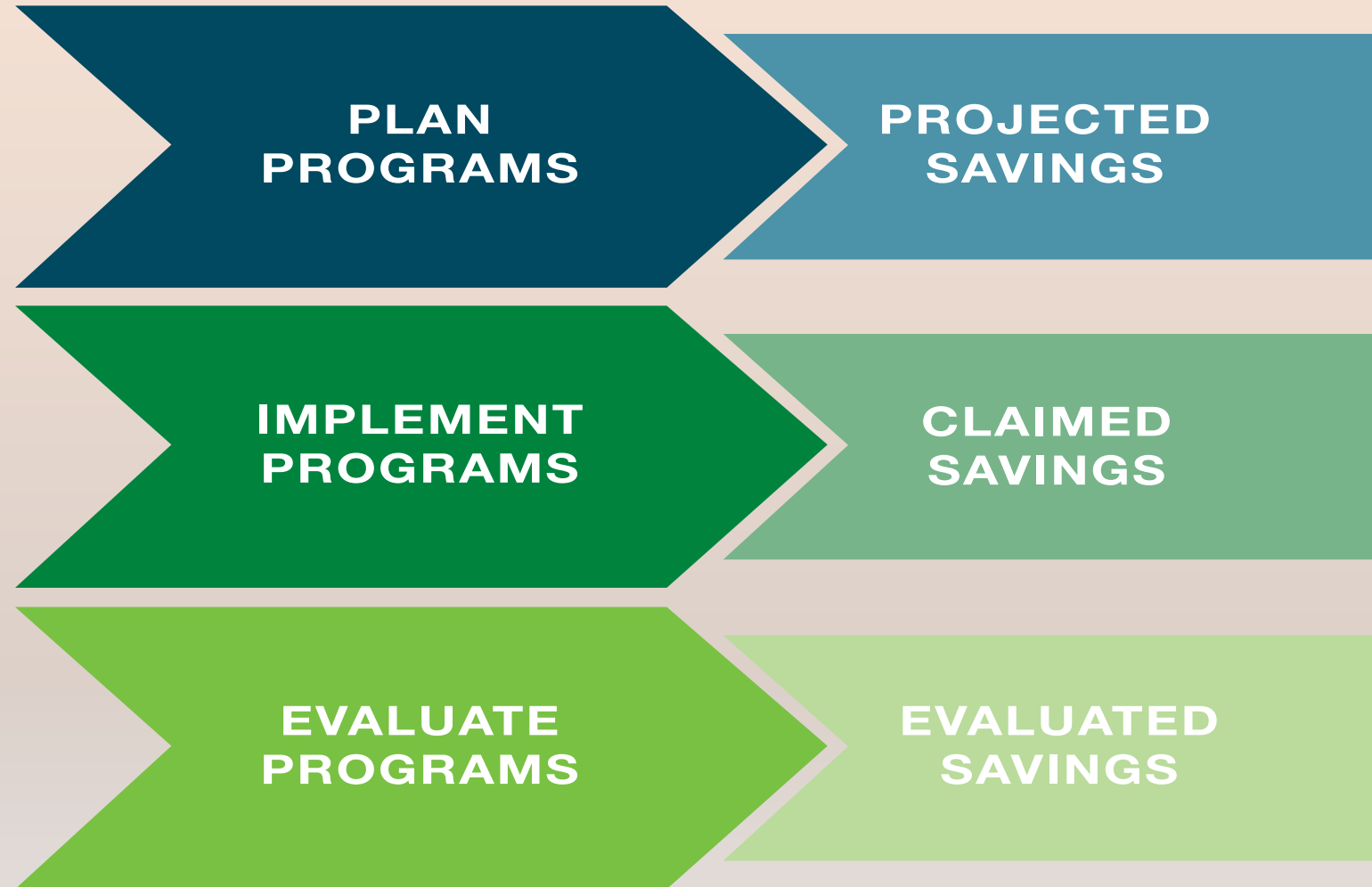
- Perspective
- Verification for PY 2016
- EM&V Recent Research Updates
 - CLE (coming)
 - Market Awareness Study (completed)
- Future EMV activities for 2017 and beyond



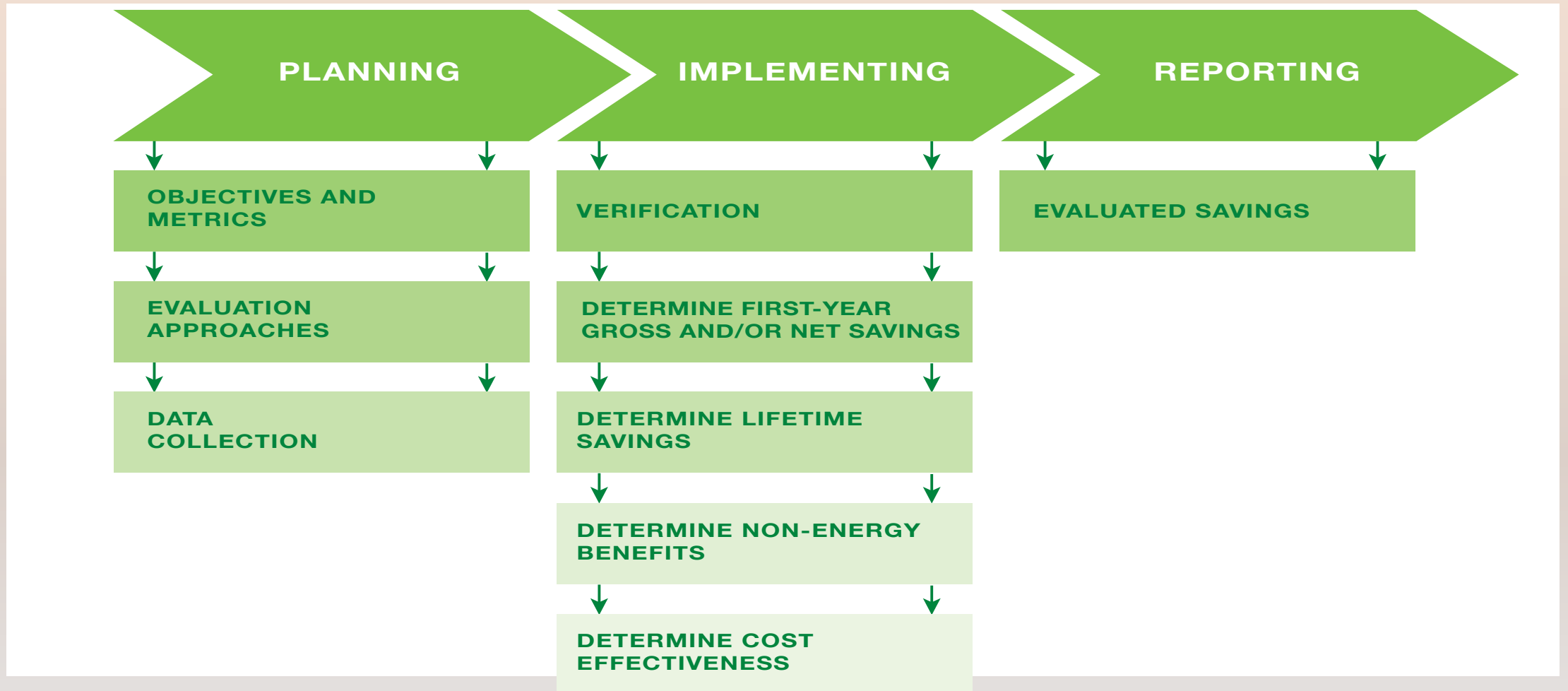
Why we do EM&V



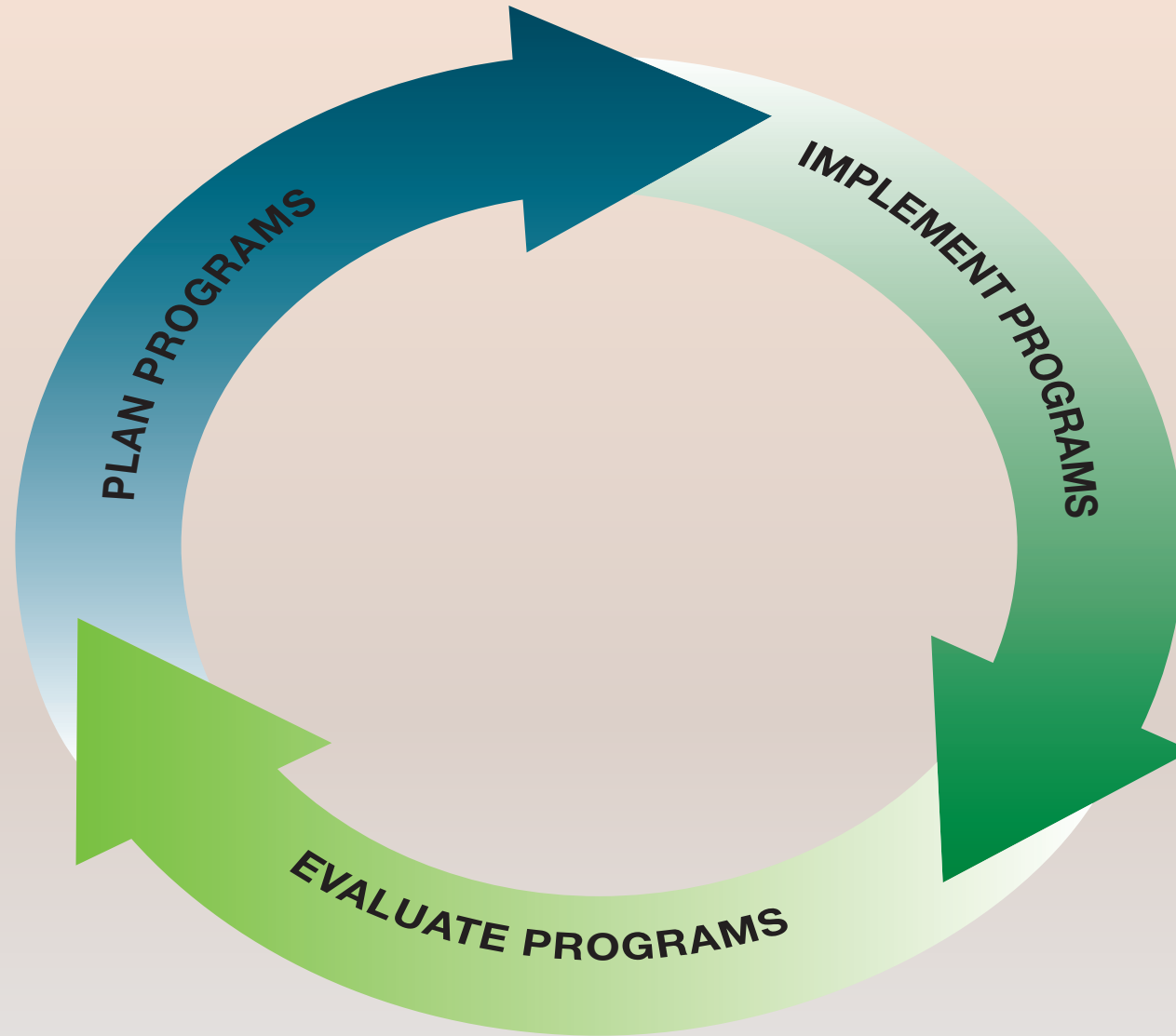
Reporting



EM&V Workflow



Bottom Line – not an end unto itself



Verification for 2016

A team of independent consultants led by the EM&V Contractor, Opinion Dynamics, verifies (or not) that the PBFA achieved reported and expected:

- Energy savings
- Results for transformational programs

Year	Sector	kWh Claimed	kWh Verified	kWh Verification Ratio	kW Claimed	kW Verified	kW Verification Ratio
PY2009	Residential	66,486,914	66,159,135	99.5%	13,835	3,745	99.3%
	Business	46,672,459	46,041,985	98.6%	8,932	8,795	98.5%
	Total	113,159,313	112,201,120	99.2%	22,767	22,540	99.0%
PY2010	Residential	56,908,379	55,729,024	97.9%	8,894	6,224	70.0%
	Business	58,065,632	50,841,633	87.6%	8,116	5,164	63.6%
	Total	114,974,011	106,570,657	92.7%	17,011	11,388	66.9%
PY2011	Residential	67,634,750	68,990,014	102.0%	9,035	8,982	99.4%
	Business	61,151,217	61,115,749	99.9%	8,225	8,232	100.1%
	Total	128,785,968	130,108,676	101.0%	17,260	17,214	99.7%
PY2012	Residential	70,807,035	70,704,689	99.9%	9,631	9,640	100.1%
	Business	42,391,766	45,075,279	106.3%	5,513	5,816	105.5%
	Total	113,198,801	115,779,968	102.3%	15,145	15,456	102.1%
PY2013	Residential	71,241,873	70,908,090	99.5%	9,493	10,517	110.8%
	Business	55,765,938	55,577,488	99.7%	7,294	7,278	99.8%
	Total	127,007,811	126,485,578	99.6%	16,787	17,795	106.0%
PY2014*	Residential	63,115,652	63,812,950	101.1%	10,199	10,794	105.8%
	Business	53,299,826	51,817,991	97.2%	8,224	8,078	98.2%
	Total	116,415,478	115,630,941	99.3%	18,423	18,872	102.4%
PY2015*	Residential	53,514,217	57,889,907	108.2%	10,532	11,999	113.9%
	Business	64,652,923	65,228,871	100.9%	9,721	9,363	96.3%
	Total	118,167,139	123,118,778	104.2%	20,253	21,362	105.5%

EM&V Recent Research Updates

- **Comprehensive Longitudinal Effects (CLE)** study (coming) – quantify and describe the opportunities that remain for the Hawaii Energy programs to achieve energy savings towards EEPS goals
- **Market Studies** (completed) –
 - Historic Participation Analysis (Spring 2016)
 - Hawaii Energy Awareness Survey (Spring 2017)

Hawaii Energy Awareness Study

- Awareness of Hawaii Energy compares very favorably to other jurisdictions that offer and promote energy efficiency programs, especially considering the program's lifespan to-date and the size of the budget dedicated to brand awareness.
- Generally found that awareness and self-reported participation in Hawaii Energy programs as well as self-reported knowledge of how to save energy in homes/businesses was down from past studies (dating back to 2009). This seems reasonable given the events surrounding the 2009 to 2012 period ("Stimulus")
- In both the residential and business sectors, Hawaii Energy is becoming a trusted brand among customers that are aware of its programs and services.
- Hawaii Energy emphasis towards the promotion of lighting technologies came through - with high percentages of both residential and business customers indicating that they are aware of CFLs and LEDs and, more importantly, that they have installed them in their homes and businesses.

Future EMV Activities for 2017 and Beyond

- Intend to prepare a brief EM&V framework plan to perhaps cover a few years for *PBF programs and EEPS*
- A primary “infrastructure” document, a functional document, that lays out “big” topics:
 - Evaluation principles
 - Evaluation activities
 - Evaluation approaches
 - Schedules and reporting requirements
 - Roles and responsibilities
- An evaluation framework document tends to be “fixed” for several years, but can be updated periodically
- The framework is principal EM&V document that all stakeholders can focus on and provide high-level input to—the “forest” as compared to the “trees”
- Looking for TAG input on what EM&V activities to undertake (e.g., market research topics)



Energy Efficiency Portfolio Standard Review

- Review of first “performance period” accomplishments toward goal – 2009-2015
- Incorporates progress to the EEPS goals from all eligible sources:
 - PBFA
 - State and local agencies/govt buildings (above and beyond savings reported by PBFA)
 - GEMS
 - Etc.
- Review progress toward 4300 GWH / 30 percent less load use by 2030
- Opportunity for all stakeholders to take a step back for a broad assessment
- EEPS Technical Working Group meetings – several over next year or so

Energy Efficiency Portfolio Standard Review

- Several Technical Working Group meetings 2017-2018
- All stakeholders take a moment to step back, “think big” together as part of the review
 - Will need to consider implications of changing electricity grid and technologies
- EEPS EM&V – focus on load impacts/forecasting for resource planning
 - Measured savings by end use, load shapes, and location to the degree possible
 - Forecasting future load impact; true up TRM
 - Need to consider joint effects of other DERs on the grid, e.g., solar

Mahalo!

How to reach EEM Team:

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