

A FRAMEWORK FOR ENERGY EFFICIENCY PORTFOLIO STANDARDS

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STATE OF HAWAII
PUBLIC UTILITIES COMMISSION
EXHIBIT A

I. Definitions	1
II. Introduction	3
A. State Policy	3
B. Goal of the EEPS Law	4
C. EEPS Targets	4
D. Purpose of Framework	5
III. Performance and Evaluation Periods	5
A. Performance Periods	5
B. Evaluation Periods	5
C. Timeline	6
IV. Goals and Metrics	7
A. Metrics for Achieving the EEPS	7
B. Goals for First Performance Period	8
C. Goals for Second through Fourth Performance Periods	8
D. Allocation of Goals to the Contributing Entities	10
E. Relationship to Ongoing Proceedings	10
V. Strategies to Meet the EEPS	11
A. Portfolio Approach and Strategies	11
B. Portfolio Components and Criteria	11
C. Contributing Entities and Delivery Channels	13
D. Eligible and Ineligible Measures and Approaches	15
E. Updating Energy Efficiency Potential Savings Estimates ...	16
VI. Roles and Responsibilities	17
A. Commission Regulated Activities	17
B. Non-Regulated Activities	17
C. EEPS Technical Working Group	17
VII. Tracking and Reporting Requirements and Timelines ..	18
A. Reporting Entity and Functions	18
B. Reporting Schedule	19
C. Criteria for Tracking and Reporting Savings	20
VIII. EEPS Evaluation, Measurement & Verification (EM&V)	20
A. Overview	20
B. EEPS EM&V Principles	21
C. EEPS EM&V Roles and Responsibilities	21
D. EEPS EM&V Funding	22

E.	EEPS EM&V Planning	22
F.	Metrics	23
G.	Allowable Approaches	25
IX.	Cost-effectiveness and Consumer Bill Impacts	25
A.	Cost-effectiveness	25
B.	Bill Impacts	27
X.	Funding, Incentives and Penalties	28
A.	Funding for Programs and Activities Under Commission Jurisdiction	28
B.	Incentives and Penalties	28

I. Definitions

As used in this Framework:

"Commission" means the Public Utilities Commission of the State of Hawaii.

"Commission Regulated Entity" or "Commission regulated" means an entity contributing to the EEPS and subject to direct regulation and/or oversight by the Commission.

"Consumer Advocate" means the Division of Consumer Advocacy of the Department of Commerce and Consumer Affairs of the State of Hawaii.

"Contributing Entity" means an entity that implements programs or activities designed to produce energy efficiency savings that contribute to the EEPS.

"EEPS" or "Energy Efficiency Portfolio Standard" generally refers to a law that sets a standard of electricity use reduction to be achieved in incremental stages. For Hawaii, EEPS refers to the standard set forth by Act 155, Session Laws of Hawaii 2009, and promulgated as HRS § 269-96.

"EEPS EM&V Contractor" means an entity or entities contracted by the Commission to provide an independent review of EEPS-related data filed with the Commission.

"EEPS Reporting Contractor" means an entity contracted by the Commission to track and report savings documented through the EM&V process.

"EEPS Technical Working Group" means a steering committee of members selected by the Commission to represent the Contributing Entities.

"EM&V" or "Evaluation Measurement & Verification" is the performance of studies and activities aimed at determining the effects of a program or portfolio of programs or policy initiatives including implementation of codes and standards.

"Energy efficiency" is a means of using less energy to provide the same (or greater) level of energy services.

"Framework" means this EEPS Framework, as described in this document.

"GWh" means gigawatt-hour.

"HRS" means Hawaii Revised Statutes.

"HECO Companies" means Hawaiian Electric Company, Inc.; Hawaii Electric Light Company, Inc.; and Maui Electric Company, Ltd.

"IRP" or "Integrated Resource Planning" means a process in which stakeholders develop an Action Plan to govern how utilities will meet energy objectives and customer energy needs consistent with State energy policies and goals, while providing safe and reliable utility service at reasonable cost, through the development of Resource Plans and Scenarios of possible futures that provide a broader long-term perspective.

"KIUC" means Kauai Island Utility Cooperative.

"MWh" means megawatt-hour.

"Non-Regulated Entity" or "non-regulated" means an entity contributing to the EEPS but not otherwise subject to direct regulation and/or oversight by the Commission.

"PBF" means the public benefits fee established by the Commission, pursuant to HRS § 269-121, to include all or a portion of the moneys collected by Hawaii's electric utilities from ratepayers through a demand-side management surcharge and transferred to a third-party administrator contracted by the Commission to provide energy efficiency and demand-side management programs and services, subject to Commission review and approval.

"PBFA" or "Public Benefits Fee Administrator" means the third-party administrator contracted by the Commission to operate and manage energy efficiency

programs in accordance with HRS Chapter 269, Part VII (Public Benefits Fee), and any other applicable laws, rules, and Commission decision(s).

"RPS" or "Renewable Portfolio Standards" means the standards or goals set forth in HRS § 269-95.

"Scenarios" means a manageable range of possible future circumstances or set of possible circumstances reflecting potential energy-related policy choices, uncertain circumstances, and risks facing a utility and its customers, which will be the basis for the plans analyzed in IRP. A scenario may not consist of a particular project.

"State" means the State of Hawaii.

"Utility" means Hawaiian Electric Company., Inc.; Hawaii Electric Light Company, Inc.; Maui Electric Company, Ltd.; and Kauai Island Utility Cooperative and their successors in interest, as applicable.

II. Introduction

A. State Policy

1. The State has a vested interest in promoting and maintaining a clean energy economy that utilizes energy as efficiently as possible.
2. Furthermore, HRS § 226-18(c) provides that, it shall be the policy of this State to:
 - (2) Ensure that the combination of energy supplies and energy-saving systems is sufficient to support the demands of growth;
 -
 - (4) Promote all cost-effective conservation of power and fuel supplies through measures, including:
 - (A) Development of cost-effective demand-side management programs;
 - (B) Education; and

(C) Adoption of energy-efficient practices and technologies; [and]

.

(6) Support research, development, demonstration, and use of energy efficiency, load management, and other demand-side management programs, practices, and technologies[.]

B. Goal of the EEPS Law

1. On June 25, 2009, A Bill for An Act Relating to Energy Resources, Act 155, Session Laws of Hawaii 2009 ("Act 155"), was signed into law and promulgated as HRS § 269-96 ("EEPS Law").
2. The purpose of the EEPS Law, as described in Act 155, is to "...maximize cost-effective energy-efficiency programs and technologies to achieve electricity-use reductions to the maximum extent feasible by establishing an energy efficiency portfolio standard."

C. EEPS Targets

1. Pursuant to HRS § 269-96(a), the Commission shall establish EEPS that will maximize cost-effective energy efficiency programs and technologies.
2. Pursuant to HRS § 269-96(b), the EEPS shall be designed to achieve 4,300 GWh of electricity use reductions statewide by 2030; provided that the Commission shall establish EEPS interim goals for electricity use reduction to be achieved by 2015, 2020, and 2025, and may also adjust the 2030 standard by rule or order to maximize cost-effective energy efficiency programs and technologies.

D. Purpose of Framework

By this Framework, the Commission establishes EEPS interim goals coincident with four performance periods (one seven-year period and three five-year periods), and sets forth broad principles and strategies for achieving the EEPS; provided that the Commission may modify any of the provisions in this Framework based on its periodic evaluation of the EEPS, with input from the EEPS Technical Working Group, and as necessary to achieve the 2030 standard in the EEPS Law.

III. Performance and Evaluation Periods

A. Performance Periods

There shall be four "performance periods" that end on December 31, 2015, 2020, 2025 and 2030, respectively. Each of these periods shall have an electricity savings goal for cumulative savings to be obtained during that period, as measured by the three metrics described in Section IV.A. The first EEPS performance period began in January of 2009 and will end on December 31, 2015.

B. Evaluation Periods

1. As provided in HRS § 269-96(d), "evaluation periods" are established for assessing progress toward EEPS goals during each performance period, and for the Commission to determine if EEPS remains effective and achievable.
2. Evaluations of progress-to-date and progress-expected-to-occur for each evaluation period shall be conducted sufficiently prior to the conclusion of each performance period to ensure that updates to savings potential, benefits, and costs are determined in order to revise the goals and approaches for the subsequent performance period as necessary.

3. These cycles are repeated every five years until the standard is achieved in 2030, and following 2030, to assess the EEPS.

C. Timeline

Table 1 below describes the starting and ending dates for the performance periods, with concomitant evaluation periods, including key reporting milestones.¹ The Commission may establish interim guidelines necessary to meet the requirements articulated below.

¹Note that the first cycle, January 1, 2009-December 31, 2015, is actually seven years rather than five.

Table 1: Timeline for Performance and Evaluation Periods

Event	Dates ²
First Evaluation Report due to Legislature	20 days before convening of the 2014 session
First EEPS Performance Period	January 2009 - December 2015
Second Evaluation Report due to Legislature	20 days before convening of the 2019 session
Second EEPS Performance Period	January 2016 - December 2020
Third Evaluation Report due to Legislature	20 days before convening of the 2024 session
Third EEPS Performance Period	January 2021 - December 2025
Fourth Evaluation Report due to Legislature	20 days before convening of the 2029 session
Fourth EEPS Performance Period	January 2026 - December 2030
Fifth Evaluation Report due to Legislature	20 days before convening of the 2034 session

IV. Goals and Metrics

A. Metrics for Achieving the EEPS

To ensure a clearer picture of EEPS progress, EEPS shall be tracked and reported following three metrics:

²Dates run from January 1 during the first year through December 31 of the final year of a given period.

1. 4,300 GWh of electricity use reductions statewide by 2030, as provided in HRS § 269-96(b);³
2. Energy efficiency to meet 30% of forecasted energy sales in 2030. This assumes updated utility sales forecasts are used for each evaluation period; and
3. Energy efficiency to meet a fixed percentage of sales relative to a two-year average of total most recent statewide energy sales.

B. Goals for First Performance Period

EEPS goals for the first performance period shall be:

Table 2: First Performance Period Goals

Year	GWh goal	% of baseline	% of forecast
2009	196.5	1.38	1.38
2010	196.5	1.37	1.37
2011	196.4	1.37	1.37
2012	196.4	1.37	1.37
2013	196.4	1.37	1.37
2014	196.4	1.37	1.37
2015	196.4	1.37	1.37
Total	1,375	9.6	9.6

C. Goals for Second through Fourth Performance Periods

The goals for the second through fourth performance periods are described below in Table 3. These goals may be revised prior to the beginning of each period as determined through evaluation or legislative mandate(s). Revisions

³Gross energy savings measured at system level (including energy savings from reduced transmission and distribution losses).

to performance period goals may be recommended by the EEPS Technical Working Group for consideration by the Commission.

Table 3: Second Through Fourth Performance Period Goals and Grand Total

Second Performance Period			
Year	GWh goal	% of baseline	% of forecast
2016	195	1.36	1.36
2017	195	1.36	1.36
2018	195	1.36	1.36
2019	195	1.36	1.36
2020	195	1.36	1.36
Total	975	6.8	6.8
Third Performance Period			
Year	GWh goal	% of baseline	% of forecast
2021	195	1.36	1.36
2022	195	1.36	1.36
2023	195	1.36	1.36
2024	195	1.36	1.36
2025	195	1.36	1.36
Total	975	6.8	6.8
Fourth Performance Period			
Year	GWh goal	% of baseline	% of forecast
2026	195	1.36	1.36
2027	195	1.36	1.36
2028	195	1.36	1.36
2029	195	1.36	1.36
2030	195	1.36	1.36
Total	975	6.8	6.8
Grand Total -- First through Fourth Performance Periods			
Year	GWh goal	% of baseline	% of forecast
2030	4,300	30	30

D. Allocation of Goals to the Contributing Entities

1. The Commission regulated and non-regulated entities that contribute towards EEPS savings will be identified by the EEPS Technical Working Group (see Section VI. Roles and Responsibilities).
2. The EEPS Technical Working Group will allocate EEPS annual and interim goals to the Contributing Entities based on the information available to them, including the results of any energy efficiency potential studies.
3. The allocations should be reviewed every five years, and if necessary, modified. Modifications recommended by the EEPS Technical Working Group should be reported to the Commission.

E. Relationship to Ongoing Proceedings

1. IRP

EEPS reporting shall be designed and scheduled to provide timely estimates of total energy efficiency resources that have and are expected to be obtained, for use in load forecasting and Scenario planning efforts in the IRP process.

2. RPS

The RPS goals set forth in HRS § 269-95, in coordination with the EEPS and EEPS interim goals, and energy electricity savings from other sectors, shall apply towards the State's energy goal of 70% of Hawaii's energy needs coming from renewable energy by the year 2030, as contemplated in Act 155.

V. Strategies to Meet the EEPS

The following key principals and strategies apply to achieving the EEPS.

A. Portfolio Approach and Strategies

1. The Commission will take an approach that combines short- and medium-term resource acquisition and long-term market transformation. Resource acquisition programs and measures deliver cost-effective and measureable savings through the installation of specific energy efficient equipment. Market transformation goals will help to develop infrastructure necessary for the continued delivery of savings over the long-term.
2. A portfolio approach will be used to achieve the EEPS. It will include a range of programs and activities such as, but not limited to: traditional incentive-based programs, education and outreach, implementation of building codes and appliance and equipment standards, system upgrades, and efforts designed to address the market barriers to energy efficiency. Approaches to overcome these barriers may include low interest loan programs, trade ally programs, free or low cost energy audits and education, incentives for sub-metering, or other innovative approaches.

B. Portfolio Components and Criteria

In designing and implementing portfolios of programs and activities, the following criteria shall be used to build balanced resource acquisition and market transformation portfolios in each market segment.

1. Resource programs should be cost-effective on a portfolio basis. Commission regulated entities and the EEPS Technical Working

Group should collaborate to design and implement program portfolios.

2. In general, energy efficiency portfolios shall favor measures with longer effective useful lives that provide efficiency through the twenty-year EEPS period and beyond. Longer life measures, such as air conditioning equipment or high efficiency motors, are preferred over shorter life measures, such as screw-in fluorescent lamps or short-term behavioral modifications. Non-energy benefits, such as job creation and increased productivity or reliability, should be considered to the extent that they can be measured, and that non-energy costs that may exist are also considered. Portfolio design should encourage the use of emerging technologies and optimization of systems.
3. Market transformation programs may not be cost-effective in the year they are offered, but should be cost-effective over a five-year term or when folded into an annual portfolio of programs. Transformation programs often generate participants for resource programs and should be designed with this consideration in mind. Typical transformation programs may include the following:
 - a) Energy training for engineers, trades people, building operators and architects;
 - b) Increased collaboration with builders and county building departments;
 - c) Development of programs that leverage schools and universities to promote and study energy efficiency; and
 - d) Support of benchmarking or time of sale energy scores for commercial buildings.

4. Savings obtained from solar water heating programs and sea-water air conditioning shall count towards the EEPS.
5. Other suitable measures and approaches may count toward the EEPS based upon recommendations from the EEPS Technical Working Group.

C. Contributing Entities and Delivery Channels

The Commission regulated and non-regulated entities may use a variety of delivery channels and mechanisms to meet the EEPS, including, but not limited to contributions from:

1. Commission Regulated Entities

a) Traditional Energy Efficiency Programs

Utility-administered (i.e., by KIUC) and third-party administered (i.e., PBFA for HECO Companies' service territories) programs are expected to initially provide the bulk of the savings towards EEPS.

b) Other Utility Programs

Utility delivered programs such as rate design or advanced metering may also contribute to EEPS.

c) Coordinated Programs

The PBFA and/or KIUC may coordinate with government agencies to assist in the design of new standards that complement ratepayer funded programs as they are rolled out.

The PBFA and/or KIUC may also provide assistance with incentives, and training and enforcement to respective County building departments during

initial rollout periods for new building codes.

Any use of ratepayer funds to support non-regulated programs and activities shall be reviewed and approved by the Commission or its designee prior to such funds being committed.

To the extent that Commission-regulated entities assist with non-ratepayer funded activities, the associated savings may be counted by the applicable ratepayer funded program provider.

d) Utility System Efficiency

Utilities (i.e, HECO Companies and KIUC) are expected to contribute savings from improvements to their system. Savings from measures such as high efficiency transformer replacement, re-conductoring and voltage regulation or optimization are all potential sources of utility energy efficiency savings.

2. Non-Regulated Entities

a) Building Codes

Energy savings from building codes developed and implemented subsequent to preparation of the demand forecasts relied upon in the development of Act 155 shall count toward achievement of the EEPS.

b) Federal, State and Local Appliance Standards

Energy savings from appliance and equipment standards developed and implemented subsequent to preparation of the demand forecasts relied upon in

the development of Act 155 shall count toward achievement of the EEPS.

c) Legislative Mandates

State building retrofits, time of sale reporting, energy service contracts and mandatory benchmarking are all examples of legislative mandates that may provide savings at a low cost. These concepts are referenced in Act 155 and should be utilized to the extent possible.

d) Non-Profits

Non-profits, environmental groups and community organizations are actively working to educate consumers on energy efficiency initiatives. Participation by these groups should be encouraged and supported through the EEPS Technical Working Group and ratepayer funded activities.

D. Eligible and Ineligible Measures and Approaches

1. Energy savings resulting from external factors including the departure of a major customer, such as the closing of military base, or the reduction of operating hours in a retail store shall not count toward the EEPS.
2. Pursuant to HRS § 269-91, beginning January 1, 2015, customer-sited, grid-connected renewable energy systems (i.e., photovoltaic systems) shall count towards the RPS and not toward the EEPS.
3. The EEPS Technical Working Group shall develop and maintain a list of eligible and ineligible measures and approaches for submission to the Commission.

E. Updating Energy Efficiency Potential Savings Estimates

1. Updated potential studies for all utility service territories are necessary for EEPS planning purposes. For service territories where this information is not available or is not current, the Commission may select an entity to perform a potential study. These studies shall be coordinated with revised residential and commercial utility saturation studies on an ongoing basis.
2. Updated potential studies shall include, but not be limited to:
 - a) A focus on developing a shorter-term re-useable model that provides estimates of technical and economic potential for the five-year term as well as a long term analysis to 2030, and beyond, as appropriate.
 - b) A modeling of results that are updated every five years at a minimum.
 - c) Models that utilize revisions and updates to primary field and economic data gathered through EM&V research, PBFA and KIUC studies and other data as needed, including utility data.
 - d) The utilization of updated residential and commercial saturation data that accurately represent energy use in Hawaii's residential, industrial and business sectors.
 - e) Updates to saturation data developed in coordination with the EEPS Technical Working Group, EM&V providers, utilities and the PBFA to assure the data gathered is timely, useful and accurate. Utility cost recovery for these efforts shall be determined by the Commission.

- f) Updates to the saturation studies shall be coordinated such that this information can be used in the first and subsequent evaluation periods.

VI. Roles and Responsibilities

A. Commission Regulated Activities

The majority of the EEPS savings will initially come from Commission regulated entities, namely the energy efficiency programs administered by the PBFA and KIUC and the transmission and distribution system improvements implemented by the electric utilities.

B. Non-Regulated Activities

Energy-related savings from the large and more diverse group of non-regulated entities are crucial to achieving the EEPS and may include contributions from:

1. Federal, State and local building codes;
2. Federal and State appliance and equipment standards;
3. Non-profit environmental groups;
4. Faith based groups; and
5. Internal goals from large energy consumers such as: Military operations, State and County buildings, and State energy-related legislation.

C. EEPS Technical Working Group

The Commission will establish an EEPS Technical Working Group that represents both Commission regulated and non-regulated activities and programs.

The EEPS Technical Working Group should identify Contributing Entities and should encourage participation by representatives from each of the major categories described above in Section VI.A and B. The EEPS Technical Working Group will coordinate issues in the EEPS by making recommendations regarding prioritizing savings strategies for the portfolio, determining eligible measures and programs and revising goals as necessary.

The EEPS Technical Working Group will establish its operating procedures and meet on a regular basis to provide recommendations in support of the evaluation and policy process as necessary. Recommendations and findings provided by this group will be implemented at the discretion of the Commission.

The Commission will establish priorities for EM&V activities conducted by the EEPS EM&V Contractor, with input from the EEPS Technical Working Group.

VII. Tracking and Reporting Requirements and Timelines

The progress toward and achievement of the EEPS shall be reported on a regular basis. This reporting shall be provided to the Commission and will inform stakeholders in the EEPS, RPS, and IRP planning and implementation processes.

A. Reporting Entity and Functions

1. The Commission may select a provider, termed the EEPS Reporting Contractor to track and report the savings documented through the EM&V process. The selected entity shall be neutral to the outcome of the tabulated results and not engaged in administering penalties or incentives.
2. The EEPS Reporting Contractor may be required to perform the following tasks in reporting EEPS progress, including, but not limited to:

- a) Develop a reporting system that accommodates the Commission regulated and non-regulated programs and activities, as described in Section VI above.
- b) Review reported savings figures for overlap, continuity, clarity of assumptions and accuracy as an accounting check on the EEPS-related EM&V results prepared by other entities.

B. Reporting Schedule

- 1. The EEPS Reporting Contractor and the EEPS Technical Working Group shall propose to the Commission reporting schedules from each Contributing Entity taking into consideration factors such as alignment of existing reporting cycles necessary to develop integrated reporting and tracking for EEPS purposes.
 - a) Commission Regulated Entities
 - i. The PBFA and KIUC shall continue to file annual plans and report actual energy efficiency program impacts. These reports shall incorporate their respective contributions towards EEPS short and long range goals.
 - ii. Each utility shall also report annual estimated energy savings from efficiency-related activities, including, but not limited to: rate design, demand response, and transmission and distribution system improvements to the Commission or its designee.

b) Non-Regulated Entities

Non-regulated Entities that wish to contribute towards the EEPS may work with the EEPS Reporting Contractor to develop annual reporting requirements. In the case of activities that can be measured and reported only as multi-year savings or other such anomalies, the EEPS Reporting Contractor shall allocate savings such that they can be included with the Contributing Entities' savings reporting.

C. Criteria for Tracking and Reporting Savings

Energy savings reported by the utilities and the PBFA programs shall be in the form of gross kWh at the system level.⁴ Savings measured at the customer meter shall be converted using the total line and auxiliary losses specific to each utility. Transmission and distribution efficiencies shall also be reported as described above.

VIII. EEPS Evaluation, Measurement & Verification (EM&V)

A. Overview

1. EEPS EM&V shall develop estimates of energy savings in a manner that is defensible in regulatory and legislative proceedings.
2. EEPS EM&V shall also provide a summary of lessons learned from efficiency programs and activities implemented to assist with future program implementation.

⁴Gross energy savings measured at system level (including energy savings from reduced transmission and distribution losses).

3. EEPS EM&V may be conducted separately for Commission-regulated and non-regulated programs and activities. Results will be combined into overall reports with concurrent annual, five-year and summary reporting schedules per Table 1 above.

B. EEPS EM&V Principles

The overall approach to EEPS EM&V will be founded on two principles:

1. Contributing Entities are responsible for submitting estimates of expected savings from the proposed programs and activities (*ex ante* estimates), and subsequently documenting the savings achieved (*ex post* estimates).
2. The Commission may retain an EEPS EM&V Contractor to facilitate, review, conduct, adjust and compile EEPS EM&V (*ex ante* and *ex post*), as needed, for the EEPS, and to be available to assist Contributing Entities and the Commission with all aspects of EEPS EM&V.

C. EEPS EM&V Roles and Responsibilities

1. The Commission retains the right to review and approve all EEPS EM&V activities and adjust any EM&V results and any information resulting from EM&V.
2. Contributing Entities should provide the EEPS Reporting Contractor and EEPS EM&V Contractor with estimates of program savings goals and designs, EEPS EM&V plans and implementation results as available. The EM&V plans and results will be reviewed by the EEPS EM&V Contractor.
3. The EEPS EM&V Contractor will provide EM&V assistance to the Commission to support the EEPS.

4. The EEPS Technical Working Group may provide review and feedback on all aspects of EEPS EM&V, as needed, including but not limited to, all documents, plans and assumptions regarding ex ante and ex post EEPS EM&V, acceptable methods and approaches, prioritization of EEPS EM&V resources, and compilation of EEPS portfolio-wide results.

D. EEPS EM&V Funding

1. Contributing Entities are responsible for developing and funding EEPS EM&V to document the validity of their contributions.
2. To the extent that Contributing Entities desire and request assistance with any aspects of EEPS EM&V, the Commission's EEPS EM&V Contractor may be made available at the Commission's discretion.
3. The Commission is responsible for carrying out and funding the responsibilities relating to the EEPS as discussed in HRS § 269-96.

E. EEPS EM&V Planning

EEPS EM&V planning will be governed by several documents listed below.

1. EEPS EM&V Plan

The EEPS EM&V Plan shall contain EM&V principles, metrics, allowable approaches, net versus gross savings issues, reporting requirements, schedules, roles and other appropriate information. The EEPS EM&V Plan will articulate overarching approaches for several years, and therefore, will be more "fixed" than annual plans. It will set the expectations for the format and content of

the other EEPS EM&V documents and annual portfolio and statewide evaluation reports.

2. Annual EEPS EM&V Work Plan

This plan will include the major evaluation activities that will be conducted during the year, including EEPS EM&V activities and corresponding budgets, timeline and allocation of resources between programs, measures, and market sectors, as applicable.

3. Activity-Specific Research Plans

Activity-specific research plans may be developed on an as-needed basis and will describe in detail the EEPS EM&V that is planned to document a given activity or portfolio of activities.

4. EEPS Technical Reference Manual

The EEPS EM&V Contractor will maintain a database and a series of reports that track assumptions over time regarding measure-level and activity-level savings, measure life, baselines, and replacement assumptions. This documentation will reflect both the *ex ante* and *ex post* assumptions used to calculate metrics for the portfolio of activities that comprise the EEPS, and the EM&V activities and approaches used to develop and refine EEPS savings estimates. The EEPS Technical Reference Manual shall be based on existing technical documentation where practicable.

F. Metrics

Metrics to be evaluated and reported by EEPS EM&V may include, but are not limited to:

1. Gross energy savings at generation, which is the primary metric counting toward the EEPS goals. First-year, lifecycle and cumulative savings will be assessed and reported.

2. Free-ridership, which will be used, if needed, to inform program design and facilitate decisions necessary for limiting potential double-counting between savings from different EEPS activities.
3. Persistence, measure life, and expected lifetime for each activity, which will be employed in the calculation of first-year, lifecycle and cumulative savings, costs and benefits.
4. Baseline assumptions, which will be calculated or estimated using 2008 *in situ* energy consumption. For purposes other than EEPS, entities may be required to use alternative baselines (e.g., baselines for PBFA-funded activities are defined for each implementation cycle). This may entail tracking two types of impacts for certain activities - impacts from a 2008 baseline, and impacts from the baseline used for a given implementation cycle.
5. Participant and non-participant spillover, which are actions taken outside a particular program or activity that are determined to have been influenced by the implementation of that program or activity, and which may result in additional savings.
6. Market effects, which are energy savings caused over time, above and beyond any direct effects attributable to an energy efficiency program or activity.
7. Takeback and rebound - the increase of energy use arising due to perception or awareness that technologies have become efficient - can affect overall estimates of energy savings and will be measured.
8. Replacement, which includes evaluation regarding the technologies and practices that are assumed to replace a technology or

practice at the end of its lifetime and may be used to evaluate cumulative savings.

9. Implementation and administration costs, which include incentive costs, measure costs and other information necessary to support cost-effectiveness analyses.
11. Co-benefits of energy efficiency savings (such as greenhouse gas reductions, job creation, and other benefits resulting from EEPS activities), based on recommendations from the EEPS Technical Working Group.
10. Other metrics as recommended by the Technical Working Group and/or at the request of the Commission.

G. Allowable Approaches

Allowable approaches to EEPS EM&V shall be based on best practices, as articulated in nationally-recognized documents and protocols at the time the EEPS EM&V is undertaken. A range of approaches may be used. Rigor and precision levels for EEPS EM&V shall be determined within EEPS EM&V workplans, and shall balance best practices with the value of information, uncertainty and resource availability.

IX. Cost-effectiveness and Consumer Bill Impacts

A. Cost-effectiveness

1. Ratepayer funded efficiency activities shall be cost-effective when evaluating each yearly portfolio of savings by using the Total Resource Cost ("TRC") test. This test should be aligned as closely as possible with the supply side alternatives and include parity when examining incremental cost of measures as well as the use of net-to-gross factors.

2. Program portfolios must also pass the Utility/Administrator Cost test in order to ensure that the benefits ratepayers receive from these programs exceed the programs' cost. A real discount rate of 5% is appropriate for the societal benefit cost modeling of energy efficiency programs where risk is spread across the entire state. This rate may be revised by recommendation of the Technical Working Groups and subsequent approval by the Commission.

B. When using the TRC or the Utility/Administrator test, the PBFA and utilities shall include the following benefits and avoided costs:

1. Benefits

- a) Avoided electric energy benefits, calculated as the product of the portfolio's energy savings and an avoided energy cost.
- b) Avoided generation capacity benefits, calculated as the product of the portfolio's peak demand and an avoided capacity cost.
- c) Avoided transmission and distribution capacity benefits, calculated as the product of the program's reduction in peak demand and avoided transmission and distribution costs factors' respectively.
- d) Non-electric benefits such as economic development benefits, job creation, energy security benefits and a greenhouse gas benefit based on each ton of CO₂ reduced may be used as determined and agreed upon in the EEPS Technical Working Group and reported to the Commission.

2. Avoided Costs

- a) Avoided cost figures should reflect renewable energy and capacity costs. Avoided costs should be in line with those determined in IRP plans. Final values may be proposed by the utilities and the EEPS Technical Working Group for reporting to the Commission at each five-year evaluation reporting period or as requested by the Commission.
- b) The utilities will calculate a range of avoided costs for the energy efficiency programs and activities. The EEPS Technical Working Group will determine the appropriate avoided cost values to use in evaluating the cost-effectiveness of such programs and activities and report these costs to the Commission.
- c) The utilities shall provide estimates of avoided transmission and distribution capital costs, and avoided transmission and distribution energy costs due to avoided line losses, for the energy efficiency programs and activities. The utilities shall use reasonable methods to estimate avoided transmission and distribution costs, which take into account the information, data and forecasts available to them, and the practical difficulties associated with determining such estimates. The utilities shall provide explanations of the methods used to determine the estimates, and shall refine such estimates as required to do so by the Commission.

B. Bill Impacts

Bill and rate impacts must be considered when setting EEPS interim goals. The EEPS Technical

Working Group should work with the Consumer Advocate to address energy efficiency bill-related issues, in particular for Commission-regulated programs and activities. All annual and five-year reporting shall discuss short and long term bill impacts for each customer class, categorized as follows:

1. Non-participants, which are ratepayers that do not participate in energy efficiency programs and activities.
2. Participants, which are ratepayers that participate in energy efficiency programs and activities.
3. Rate class totals, which indicate the effect of efficiency savings across the ratepayer class as a whole.

X. Funding, Incentives and Penalties

A. Funding for Programs and Activities Under Commission Jurisdiction

Funding for PBF-administered and utility-funded energy efficiency programs should be re-evaluated by the EEPS Technical Working Group regularly or at each five-year evaluation period to determine if it is sufficient to meet State energy goals.

B. Incentives and Penalties

1. The existing PBFA model of performance based withholding and a small incentive for exceeding target goals should continue for the current contract term. Revised incentive mechanisms may be proposed by the EEPS Technical Working Group for future PBFA contracts. Any changes to incentive mechanisms will be at the discretion of the Commission. Goals associated with PBFA penalties and incentives will continue to be determined by the Commission, with input from the EEPS Technical Working Group.

2. Upon completion of any updated potential studies, adequate information is expected to be available to determine if firmer goals for future performance period(s) should be established. In addition, the Commission may determine whether penalties for not reaching these goals are necessary.

CERTIFICATE OF SERVICE

The foregoing order was served on the date of filing by mail, postage prepaid, and properly addressed to the following parties:

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Certificate of Service - Continued
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