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Energy Efficiency Metrics

Presentation to the California Energy Commission, August 24, 2021



California Public
Utilities Commission

Overview

1. Portfolio Segmentation
2. Segment Assessment Strategies
3. Cost Effectiveness
4. Goals Metric
5. Maximizing Total System Benefit

Energy Efficiency Portfolio Segmentation

In 2024, the EE Portfolio will be segmented based on the primary purpose of the programs.

- **Primary Resource Acquisition:** Programs with a primary purpose of, and a short-term ability to, deliver cost-effective avoided cost benefits to the electricity and natural gas systems.
- **Market Support:** Programs with a primary objective of supporting the long-term success of the energy efficiency market by educating customers, training contractors, building government partnerships, or moving beneficial technologies towards greater cost effectiveness.
- **Equity:** Programs with a primary purpose of providing energy efficiency to hard-to-reach or underserved customers and disadvantaged communities in advancement of the Commission's Environmental and Social Justice Action Plan.

Segment Assessment Strategies

Primary Resource Acquisition

- Resource acquisition benefits must have a 1:1 ratio to costs.

Equity & Market Support

- Market support and equity program budgets must not exceed 30% and programs assessed using achievement metrics.

The portfolio must collectively achieve its total system benefit goals metric.

Resource Segment Cost Effectiveness

- The total resource cost (TRC) test is the primary test for determining cost effectiveness in Energy Efficiency.

$$\text{TRC} = \frac{\text{(Avoided Costs)} \times \text{Net to Gross}}{\text{PA Costs} + \text{Free Rider Incentives} + \text{Net Participant Costs}}$$

- Energy Efficiency considers the following avoided costs: Energy, capacity, transmission, distribution, ancillary services, GHGs (including high-GWP gases, gas infrastructure costs).

Stakeholder Perspectives in the TRC

- The Total Resource Cost Test includes both the customer and utility perspective.
- D.19-05-019 stated that the TRC was primary CPUC test because it represents the broadest range of perspectives.

	Utility	Customer
Benefits	<ul style="list-style-type: none">• Avoided Costs	<ul style="list-style-type: none">• Customer Incentives
Costs	<ul style="list-style-type: none">• Customer Incentives• Free Rider Incentives• Program Costs	<ul style="list-style-type: none">• Net Participant Costs

Portfolio Goals Metric

Total System Benefit is an expression, in dollars, of the lifecycle avoided costs of energy efficiency activities, on an annual basis.

How it works:

- Replace current metrics (GWh, MW, MMTherms) with 1 new metric for EE portfolios: Total System Benefit (\$).
- Use the Total System Benefit output from the Potential and Goals Study to set EE Goals by IOU.
- Energy forecasts (kWh, KW, Therms) would will be reported and transmitted to CEC for planning purposes.

Maximizing Total System Benefit

- Encourages pursuit of savings that deliver high avoided cost values.
- Higher kWh measures generally deliver higher benefits, but that's not always the case.

Measure	Lifecycle kWh	\$ Benefit	\$ Benefit per kWh
Fan Controller for Res. Air Conditioner	2448	\$520	\$0.22
Commercial Ice Machine	2484	\$192	\$0.08
Agricultural Clean Water Pump	2526	\$145	\$0.06

Table 1: Measure kWh and \$ Benefit

More Information on TSB

- The Total System Benefit Guidance document is available for comment on the PDA through August 26th
 - <https://pda.energydataweb.com/#!/documents/2530/view>
- The TSB Guidance Document will be updated to include policy language from the Potential and Goals Decision.
- Final document will be released to service list and posted on website