

Conservation Program Cost-Effectiveness Tests

Presentation to the:

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Background

- A utility may serve customer load with:
 - Supply-Side Resources:
 - Generation
 - Purchased Power
 - Demand-Side Resources:
 - Energy Efficiency Programs
 - Load Management Programs

- Each option has associated costs that must be borne by ratepayers

- How to analyze the benefits and costs of Demand-Side Management (DSM) Programs?

Cost-Effectiveness Tests

- FEECA requires DSM programs to be cost-effective but does not define that term
- Beginning in the early 1980s - Development of cost-benefit procedures for analyzing the economics of DSM programs from different perspectives:
 - DSM program participants
 - Non-participants
 - All ratepayers
 - The utility
- California Standard Practice Manual
- FPSC Rule 25-17.008, F.A.C., provides minimum filing requirements for DSM cost-effectiveness
 - Participant Test
 - Rate Impact Measure Test
 - Total Resource Cost Test

Example DSM Program

Heat Pump Changeout

Pay an incentive to remove strip heat and install a heat pump at an efficiency level higher than code.

- Benefits:
 - kW reduction - Capacity cost deferral
 - kWh reduction – Fuel cost savings
 - Reduced bills - participants
 - Incentives – participants

- Costs
 - Heat Pump: participant
 - Program costs: utility (all ratepayers)
 - Reduced utility revenues

Participant Test

Benefits	Costs
<p>Reduction in Customer Bills</p> <p>Incentive Paid by the Utility (ratepayers)</p>	<p>Out of Pocket Expenses to Participate in the Program:</p> <ul style="list-style-type: none"> - Equipment Costs - Maintenance Costs

Participant Test

- Will the customer be better off by participating in the program?
 - Are the bill savings greater than the cost of participating (i.e. investing in a heat pump)
- This test ignores the impact on the utility, non-participants, and all ratepayers of participating or not participating in the program
- May be used by utilities as a screen – e.g. if payback is less than two years, customer should invest in DSM measure on their own.

Rate Impact Measure Test

Benefits	Costs
Avoided Supply Costs (Capital and O&M) - Generation - Transmission - Distribution Net Fuel Impact	Program Costs - Equipment, Administration Program Incentives Decreased Revenues

Rate Impact Measure Test

- What is the impact of the program on utility revenues (rates) and what is the effect on the non-participating customer?
- A program passing the RIM test will cause rates to go up, but not as high as they otherwise would.
- Eliminates DSM cross subsidies as participants and non-participants benefit.
- Programs with relatively higher kWh reductions will result in higher revenue losses and reduce the potential to be cost-effective under RIM.

Total Resource Cost Test

Benefits	Costs
<p>Avoided Supply Costs (Capital and O&M)</p> <ul style="list-style-type: none"> - Generation - Transmission - Distribution <p>Net Fuel Impact</p>	<p>Program costs</p> <ul style="list-style-type: none"> - Equipment, Administration <p>Participant's Out of Pocket Expenses</p> <ul style="list-style-type: none"> - Equipment Costs - Maintenance Costs

Total Resource Cost Test

- Measures the overall economic efficiency of a DSM program from the perspective of society.
- Measures the net costs of a DSM program based on total program costs, including both the participants and utility's costs.
- Incentives and revenue losses are not included as costs, and are treated as transfer payments among ratepayers (no net cost).
- Because revenue losses are not included, programs with relatively higher kWh reductions are more likely to be cost-effective under TRC.

RIM vs. TRC

- RIM and TRC calculate benefits identically
- Treatment of costs differ greatly

	Benefits	Costs
RIM	Avoided Supply Costs	Program Costs Incentives Lost Revenues
TRC	Avoided Supply Costs	Program Costs

Cost-Effectiveness Tests

- IOUs must file, at a minimum, cost effectiveness data on a DSM program:
 - Participant Test
 - TRC Test
 - RIM Test

- Tests are filed for:
 - DSM goal setting
 - DSM plan approval
 - DSM program approval
 - DSM program modifications
 - As part of ongoing monitoring of cost-effectiveness

- Historically, the FPSC’s focus has been on ensuring reliable electric service at the lowest possible cost

- DSM programs approved by the PSC have benefited all utility ratepayers