

2.2 The Five Cost-Effectiveness Tests and Their Origins

Currently, five key tests are used to compare the costs and benefits of energy efficiency and demand response programs. These tests all originated in California. In 1974, the Warren Alquist Act established the California Energy Commission (CEC) and specified cost-effectiveness as a leading resource planning principle. In 1983, California's *Standard Practice for Cost-Benefit Analysis of Conservation and Load Management Programs* manual developed five cost-effectiveness tests for evaluating energy efficiency programs. These approaches, with minor updates, continue to be used today and are the principal approaches used for evaluating energy efficiency programs across the United States.¹

Table 2-2 summarizes the five tests in terms of the questions they help answer and the key elements of the comparison.

Table 2-2. The Five Principal Cost-Effectiveness Tests Used in Energy Efficiency

Test	Acronym	Key Question Answered	Summary Approach
Participant cost test	PCT	Will the participants benefit over the measure life?	Comparison of costs and benefits of the customer installing the measure
Program administrator cost test	PACT	Will utility bills increase?	Comparison of program administrator costs to supply-side resource costs
Ratepayer impact measure	RIM	Will utility rates increase?	Comparison of administrator costs and utility bill reductions to supply-side resource costs
Total resource cost test	TRC	Will the total costs of energy in the utility service territory decrease?	Comparison of program administrator and customer costs to utility resource savings
Societal cost test	SCT	Is the utility, state, or nation better off as a whole?	Comparison of society's costs of energy efficiency to resource savings and non-cash costs and benefits

Source: Standard Practice Manual: Economic Analysis of Demand-Side Programs and Projects.

2.3 Cost-Effectiveness Test Results in Best Practice Programs

Illustrating cost-effectiveness test calculations, Table 2-3 shows benefit-cost ratio results from four successful energy efficiency programs from across the country.² The Southern California Edison (SCE) Residential Energy Efficiency Incentive Program provides customer incentives for efficient lighting and appliances. Avista's results are for its Regular Income Portfolio, which includes a variety of programs targeted to residential users. Puget Sound Energy's Commercial/Industrial Retrofit Program encourages commercial customers to install cost- and energy-efficient equipment, adopt energy-efficient designs, and use energy-efficient operations