Recommendations for Reforming Efficiency Cost-Effectiveness Screening in the US

Synapse
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National Home
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Overview of the Resource Value Framework

Essential elements of the framework:

1. Allows flexibility for each state to determine an efficiency screening test that best meets its goals and interests.
2. Builds off of the existing screening tests; and prevents states from getting stuck in a testing straightjacket.
3. Clarifies the objective of efficiency screening: to identify resources that are in the public interest.
4. Accounts for the energy policy goals of each state.
5. Allows for consideration of relevant hard-to-quantify benefits.
6. Provides an explicit, transparent process to identify the appropriate screening test for each state.

Background: Five Cost-Effectiveness Screening Tests

- Participant test: includes costs and benefits experienced by the program participants.
- Ratepayer Impact Measure (RIM) test: includes costs and benefits that affect utility rates.
- Utility Cost test: includes the costs and benefits that affect the utility system. (Sometimes called the Program Administrator Cost test.)
- Total Resource Cost (TRC) test: includes the costs and benefits experienced by all utility customers, including participants and non-participants.
- Societal Cost test: includes costs and benefits experienced by all members of society.

Current Application of the Primary Screening Tests

- The CA Standard Practice Manual and many states note that multiple tests should be applied when screening energy efficiency, so that multiple perspectives are taken into account.
- However, in practice most states use one test as the primary criterion for screening.
- Most states use the TRC test as the primary test:
  - TRC test (roughly 71% of states)
  - Societal Cost test (roughly 15% of states)
  - Utility Cost test (roughly 12% of states)
  - *Source: ACEEE 2012, based on state self-reporting*
- But in many cases the tests are modified somehow.
  - Thus they vary considerably around the country.

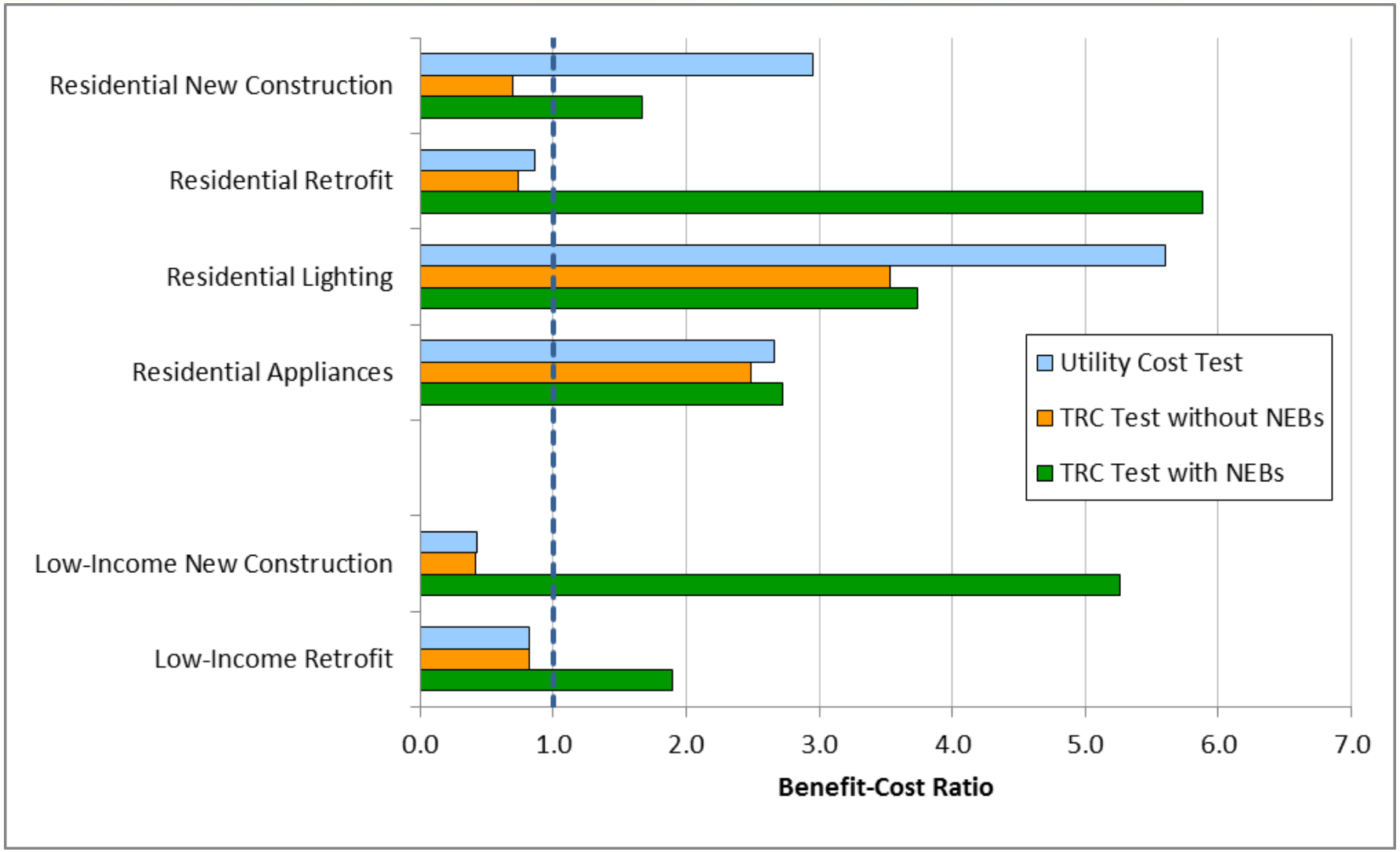
The Three Primary Screening Tests

	Utility Cost Test	Total Resource Cost Test	Societal Cost Test
Energy Efficiency Program Costs:			
Program Administrator Costs	Yes	Yes	Yes
EE Measure Cost: Program Financial Incentive	Yes	Yes	Yes
EE Measure Cost: Participant Contribution	---	Yes	Yes
Energy Efficiency Program Benefits:			
Avoided Energy Costs	Yes	Yes	Yes
Avoided Capacity Costs	Yes	Yes	Yes
Avoided Transmission and Distribution Costs	Yes	Yes	Yes
Wholesale Market Price Suppression Effects	Yes	Yes	Yes
Avoided Cost of Environmental Compliance	Yes	Yes	Yes
Other Resource Savings (e.g., water, oil)	---	Yes	Yes
Non-Energy Benefits (utility perspective)	Yes	Yes	Yes
Non-Energy Benefits (participant perspective)	---	Yes	Yes
Non-Energy Benefits (societal perspective)	---	---	Yes

Examples of Non-Energy Benefits

- Utility Perspective:
  - Reduced arrearages.
  - Reduced carrying costs on arrearages.
  - Reduced bad debt.
- Participant Perspective:
  - Improved safety.
  - improved health.
  - reduced O&M costs.
  - increased worker and student productivity.
  - increased comfort.
  - reduced water use.
  - improved aesthetics.
- Societal Perspective:
  - Environmental benefits.
  - Economic development and jobs.
  - Health care cost savings.

Implications of the TRC Test & Non-Energy Benefits



Challenges With Current Screening Practices

- Many states use the TRC test to screen efficiency resources, but most of them ignore or undervalue the participant non-energy benefits.
  - Consequently, the tests are internally inconsistent, and are skewed against efficiency.
  - This leads to under-investment in efficiency, and higher costs for customers.
- Many states have environmental goals or requirements that are not adequately captured in the screening tests.
- Several states are considering terminating their gas efficiency programs due to cost-effectiveness results.
  - Should they implement them anyway?
- States use a range of different tests, assumptions and methodologies.
  - Why so many differences? Are they all correct?
- Several states are revisiting their efficiency screening practices.
  - Including California. What does this say about the Standard Practice Manual?

Responses to Recent Screening Challenges

- Various responses to current screening challenges:
  - Develop new methods for measuring benefits and costs (e.g., conduct further research on non-energy benefits).
  - Proposals to reconsider the most appropriate screening test:
    - For example switch from the TRC test to the Utility test.
- However, these responses are not addressing the core causes:
  - Requirement to monetize every cost and benefit.
  - Some public policy goals are ignored.
  - Overly limited application of the tests.
- Our proposal is designed to address these core causes.

Cause #1: Requirement to Monetize Everything

- Every state essentially requires that all costs and all benefits be quantified and monetized.
- Costs are relatively easy to quantify and monetize.
- Some benefits are very difficult to quantify and monetize.
- Many states are not willing to quantify some of the benefits, due to the uncertainties, contention and costs involved.
- Result: key benefits are ignored.

Cause #2: Some Energy Policy Goals are Ignored

- There are many energy policy goals that energy efficiency resources might help to achieve:
  - Reduce electricity and gas bills.
  - Assist low-income customers with high energy burdens.
  - Reduce environmental impacts. Address climate change.
  - Promote local job growth and economic development.
  - Increase the reliability of electricity and gas systems.
  - Reduce the risks associated with electricity and gas systems.
  - Increase the diversity of electricity and gas resources.
  - Reduce the consumption of fossil fuels, or imported fuels.
  - Promote customer equity.
- However, some of these goals are not addressed when applying the current efficiency screening tests.
  - Some of the benefits are difficult to quantify and monetize.
- Result: Key public policy goals are ignored.

What is the Objective of Efficiency Screening?

- The objective of energy efficiency screening is to determine which energy efficiency resources are in the public interest.
  - The term "in the public interest" refers to the concept of balancing the multiple interests affected by the electric and gas industries, including the interests of the customers, the utilities, other market actors, and the public at large.
  - Commissions apply this standard in several aspects of utility regulation.
- This objective may be very different than what many states do, which is to determine whether the monetized benefits exceed the monetized costs.

The Resource Value Framework

Essential elements of the framework:

1. Allows flexibility for each state to determine a screening test that best meets its goals and interests.
2. Builds off of the existing screening tests; and prevents states from getting stuck in a testing straightjacket.
3. Clarifies the objective of efficiency screening: to identify resources that are in the public interest.
4. Accounts for the energy policy goals of each state.
5. Allows for consideration of relevant hard-to-quantify benefits.
6. Provides an explicit, transparent process to identify the appropriate screening test and methodologies for each state.

Building off of Existing Screening Tests

- Both the Utility Cost test and the Societal Cost test are reasonable options for screening energy efficiency. However,
  - Strict application of the Utility Cost test does not allow consideration of energy policy benefits: some of which are key to commissioners, legislatures, etc.
  - The Societal Cost test is sometimes considered to be too broad and to difficult to implement properly in practice.
- The TRC test should only be used with great caution.
  - Participant costs should not be included unless participant NEBs are also included.
  - If a state is unwilling to include reasonable estimates of participant non-energy benefits, then it should not include participant costs either.
- The RIM test should never be used to screen energy efficiency.
- The Participant Cost test should not be used to screen efficiency.

The Importance of Addressing Energy Policy Goals

- Most, maybe all, states have already established energy policy goals that efficiency resources will affect.
- These goals are articulated in many ways:
  - Executive directives from governors; statutes; regulations; commission orders; guidelines; and other policy statements.
- These goals evolve over time. Screening practices should account for the most recent policy goals.
- A state's energy policy goals should be used to inform the decision of which efficiency resources are in the public interest.
- Consideration of energy policy goals helps states address some of the challenging situations that arise.

Options to Account for Hard-to Quantify Benefits

- Monetization: estimating benefits in terms of dollar impacts, which can then be added to the other dollar costs and benefits in the analysis.
- Quantification: developing quantified values of benefits, even if those values are not put into monetary terms.
- Proxy adders: adjustments (either in terms of a percent of benefits, or in terms of $/MWh or $/therm) that are meant to approximate the value of the benefit as closely as possible.
- Alternative screening benchmarks: developing screening standards that inherently account for the fact that some benefits are not accounted for.
- Regulatory judgment: regulators account for hard-to-quantify benefits without using any of the options above; by approving efficiency programs whose benefit-cost ratios are less than one, based upon the finding that the program helps achieve specific energy policy goals and is therefore in the public interest.

Key Benefits and Options to Account for Them

		Methodology to Account for Benefit:				
Primary Beneficiary	**Benefit**	**Monetiz-ation**	**Quan-tification**	**Proxy**	**Alternative Benchmarks**	**Regulatory Judgment**
The Utility System	Energy	1	--	--	--	--
	Capacity	1	--	--	--	--
	Transmission & Distribution	1	--	--	--	--
	Price Suppression	1	--	--	--	--
	Environmental Compliance	1	--	--	--	--
	Utility Non-Energy Benefits	1	--	--	--	--
The Utility System	Promote Customer Equity	--	--	--	2	1
	Avoid Lost Opportunities	--	--	--	2	1
	Market Transformation	--	--	--	2	1
The General Public	Reduced GHGs	1	2	3	--	--
	Reduced Other Pollutants	1	2	3	--	--
	Reduced Health Care Costs	1	2	3	--	--
	Economic Development	--	--	--	--	1
Participants	Other Resource Savings	1	2	3	--	--
	Low-Income Benefits	1	2	3	4	5
	Non-Energy Benefits	1	2	3	--	--

The number 1 indicates that this methodology is the first preference; 2 the second preference; etc.

Applying the Resource Value Framework

1. Clarify the objective of energy efficiency screening:
   - To determine whether energy efficiency resources are in the public interest.
2. Explicitly require that efficiency program screening practices account for energy policy goals.
   - Articulate which goals.
3. Explicitly require that efficiency program screening practices account for all the relevant benefits associated with the screening test used in that state.
   - Articulate which benefits.
4. Explicitly require that efficiency screening practices should not exclude relevant benefits because they are difficult to quantify and monetize.
   - Articulate which methodologies should be used for which benefits.
5. Explicitly decide whether to account for the participant cost of the efficiency resource.
   - If a state decides to include participant costs, then the screening test must also include reasonable estimates of the participant non-energy benefits.
   - If a state is unwilling or unable to include reasonable estimates of participant non-energy benefits, then it should not allow the participant costs to be included.
6. Use a standard template to document assumptions, methodologies and results.

Resource Value Framework

	Program Name		Date	
Required	**Utility Monetized Costs**		**Utility Monetized Benefits**	
	Program Administration		Avoided Energy Costs	
	Incentives Paid to Participants		Avoided Capacity Costs	
	Shareholder Incentive		Avoided T&D Costs	
			Avoided Environmental Compliance costs	
	NPV Total Utility Cost		NPV Total Utility Monetized Benefits	
Recommended	**Public Monetized Costs**		**Public Monetized Benefits**	
			Public Benefits of Low Income Programs	
			Reduced GHG Emissions	
			Reduce Pollution	
			Reduce Public Health Care Costs	
	NPV Total Policy Costs		NPV Total Policy Monetized Benefits	
Optional - Not Recommended	**Participant Monetized Costs**		**Participant Monetized Benefits**	
	Participant Contribution		Participants' Savings of other fuels	
			Participant Non Energy Benefits:	
			Low Income Participant Non-Energy Benefits	
			Participants' Reduced O&M Benefits	
			Participants' Health Impacts	
			Participant Employee Productivity	
			Participant Comfort	
	NPV Total Participant Cost		NPV Total Monetized Participant Benefits	
	Summary of Monetized Costs and Benefits			
	Total Monetized Costs		**Total Monetized Benefits**	
	Monetized Benefits- Cost Ratio		**Net Monetized Benefits**	
Recommended	**Consideration of Non-Monetized Benefits and Costs**			
	Non Monetized Impacts	**comments**		
	Promotion of Customer Equity			
	Avoided lost opportunity			
	Promoting Market Transformation			
	Economic Development			

Example:
Blank Template

Note that this list of costs and benefits is not meant to be exhaustive.

Resource Value Framework

	Commercial New Construction			Date	
Required	**Utility Monetized Costs**		**Utility Monetized Benefits**		
	Program Administration	XXXXX	Avoided Energy Costs	XXXXX	
	Incentives Paid to Participants	XXXXX	Avoided Capacity Costs	XXXXX	
	Shareholder Incentive	XXXXX	Avoided T&D Costs	XXXXX	
		XXXXX	Avoided Environmental Compliance costs	XXXXX	
	NPV Total Utility Cost	XXXXX	NPV Total Utility Monetized Benefits	XXXXX	
Recommended	**Public Monetized Costs**		**Public Monetized Benefits**		
			Public Benefits of Low Income Programs		
			Reduced GHG Emissions	XXXXX	
			Reduce Pollution		
			Reduce Public Health Care Costs		
	NPV Total Policy Costs		NPV Total Policy Monetized Benefits	XXXXX	
Optional - Not Recommended	**Participant Monetized Costs**		**Participant Monetized Benefits**		
	Participant Contribution		Participants' Savings of other fuels		
			Participant Non Energy Benefits:		
			Low Income Participant Non-Energy Benefits		
			Participants' Reduced O&M Benefits		
			Participants' Health Impacts		
			Participant Employee Productivity		
			Participant Comfort		
	NPV Total Participant Cost		NPV Total Monetized Participant Benefits		
	Summary of Monetized Costs and Benefits				
	Total Monetized Costs	XXXXX	**Total Monetized Benefits**	XXXXX	
	Monetized Benefits- Cost Ratio	XXXXX	**Net Monetized Benefits**	XXXXX	

Recommended	**Consideration of Non-Monetized Benefits and Costs**	
	Non Monetized Impacts	**Description**
	Promotion of Customer Equity	Program serves an important cusomter group.
	Avoided lost opportunity	Program has significant lost opportunity benefits
	Promoting Market Transformation	Program trains architects & builders and supports building codes.
	Economic Development	Program is estimated to create X thousand jobs.

Example:
Commercial
New Construction

State A

Resource Value Framework

	Low-Income Home Retrofit			Date	
Required	**Utility Monetized Costs**		**Utility Monetized Benefits**		
	Program Administration	XXXXX	Avoided Energy Costs	XXXXX	
	Incentives Paid to Participants	XXXXX	Avoided Capacity Costs	XXXXX	
	Shareholder Incentive	XXXXX	Avoided T&D Costs	XXXXX	
		XXXXX	Avoided Environmental Compliance costs	XXXXX	
	NPV Total Utility Cost	XXXXX	NPV Total Utility Monetized Benefits	XXXXX	
Recommended	**Public Monetized Costs**		**Public Monetized Benefits**		
			Public Benefits of Low Income Programs	XXXXX	
			Reduced GHG Emissions	XXXXX	
			Reduce Pollution		
			Reduce Public Health Care Costs		
	NPV Total Policy Costs		NPV Total Policy Monetized Benefits	XXXXX	
Optional - Not Recommended	**Participant Monetized Costs**		**Participant Monetized Benefits**		
	Participant Contribution	XXXXX	Participants' Savings of other fuels	XXXXX	
			Participant Non Energy Benefits:		
			Low Income Participant Non-Energy Benefits	XXXXX	
			Participants' Reduced O&M Benefits	XXXXX	
			Participants' Health Impacts	XXXXX	
			Participant Employee Productivity		
			Participant Comfort	XXXXX	
	NPV Total Participant Cost	XXXXX	NPV Total Monetized Participant Benefits	XXXXX	
	Summary of Monetized Costs and Benefits				
	Total Monetized Costs	XXXXX	**Total Monetized Benefits**	XXXXX	
	Monetized Benefits- Cost Ratio	XXXXX	**Net Monetized Benefits**	XXXXX	

Recommended	**Consideration of Non-Monetized Benefits and Costs**		
	Non Monetized Impacts	**Description**	
	Promotion of Customer Equity	Program serves an important cusomter group.	
	Avoided lost opportunity		
	Promoting Market Transformation		
	Economic Development	Program is estimated to create X thousand jobs.	

Example: Low-Income Home Retrofit

State B

Each state should use the same test to screen all types of efficiency resources.

Additional Screening Recommendations

- Discount rates:
  - Discount rates used for screening should account for the risk benefits of efficiency.
  - Efficiency resources provide benefits in terms of financial risk, project risk and portfolio risk.
  - The utility weighted average cost of capital is too high for a discount rate, as it does not account for these risk benefits of efficiency resources.
- Screening level:
  - Efficiency resources should not be screened at the measure level.
  - Instead, they should be screened at the program, sector or portfolio level.
- Study period:
  - Efficiency screening analyses should use study periods that are at least as long as the operating lives of the measures being evaluated.

Screening Issues to Address in Subsequent Work

- What constitutes “reasonable” estimates of participant non-energy benefits.
- What proxy values should be used to account for hard-to-monetize costs and benefits.
- When screening energy efficiency programs how should free-riders, spillover and market transformation be accounted for.
- How should customer rate and bill impacts be accounted for when screening energy efficiency programs.
- Maybe others.

Relevant Literature

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Appendix

Various Slides That May be of Use

The Five Standard Screening Tests

	Participant Cost Test	RIM Test	Utility Cost Test	TRC Test	Societal Cost Test
Energy Efficiency Program Costs:					
Program Administrator Costs	---	Yes	Yes	Yes	Yes
EE Measure Cost: Program Financial Incentive	---	Yes	Yes	Yes	Yes
EE Measure Cost: Participant Contribution	Yes	---	---	Yes	Yes
Lost Revenues to the Utility	---	Yes	---	---	---
Energy Efficiency Program Benefits:					
Customer Bill Savings	Yes	---	---	---	---
Avoided Energy Costs	---	Yes	Yes	Yes	Yes
Avoided Capacity Costs	---	Yes	Yes	Yes	Yes
Avoided Transmission and Distribution Costs	---	Yes	Yes	Yes	Yes
Wholesale Market Price Suppression Effects	---	Yes	Yes	Yes	Yes
Avoided Cost of Environmental Compliance	---	Yes	Yes	Yes	Yes
Other Resource Savings (e.g., water, oil)	Yes	---	---	Yes	Yes
Non-Energy Benefits (utility perspective)	---	Yes	Yes	Yes	Yes
Non-Energy Benefits (participant perspective)	Yes	---	---	Yes	Yes
Non-Energy Benefits (societal perspective)	---	---	---	---	Yes

RIM Test Should Never be Used for EE Screening

- The information provided by the RIM test is of no value for the purpose of efficiency screening.
  - Millions of dollars in savings might be foregone in order to avoid what might be very small rate impacts.
- The additional costs included in the RIM test (i.e., the lost revenues) are sunk costs.
  - These should not be used in deciding which projects are cost-effective.
- Nonetheless, consideration of rate impacts is very important.
  - Rate impacts should be considered separately from cost-effectiveness.
  - Rate impacts should be analyzed in a comprehensive and meaningful way:
    - Short-term and long-term rate impacts should be quantified.
    - Short-term and long-term bill impacts should be quantified.
    - Program participation rates should be quantified.
    - Customer equity should be addressed explicitly.

Example of a Comprehensive Rate & Bill Analysis

Based upon an actual three-year plan currently proposed by an electric utility, with savings on the order of 2.5% of retail sales per year.

	Highest Single-Year Rate Increase	Average Long-Term Rate Increase	Range of Bill Savings	General Participation Conclusions For Cumulative Participation 1998-2017
Residential	7%	2%	-1% to 9%	Vast majority of customers participate.
Low-Income	8%	2%	-2% to 12%	Large majority of LI dwellings get retrofits.
Small C&I	6%	1%	37% to 47%	Roughly 30% of customers participate.
Large C&I	9%	0%	2% to 3%	Majority of customers participate.

The RIM test provides none of this information.

Address Customer Impacts and Interests

In determining whether efficiency resources are in the public interest, Commissioners should always keep customer impacts in mind:

- The Utility Cost test can be applied at the portfolio level to make sure that energy bills for all customers on average will be reduced.
- Customer equity should not be addressed with the RIM test. Instead:
  - Consider customer participation rates as an indication of customer equity (i.e., the extent to which customers will see lower bills).
  - Design programs to help promote customer participation; thereby offsetting rate impacts and promoting customer equity.
  - Design regulatory policies to promote customer participation:
    - Get better data on participation.
    - Use participation goals in program planning process.
    - Use participation goals in utility shareholder incentives.

Survey of Screening Practices in Northeast States

Cost-Effectiveness Metric		Connecticut	Delaware	District of Columbia	Massachusetts	New Hampshire	New York	Rhode Island	Vermont
Primary Policy Driver		Focus on electric system impacts only	Still under development	Energy efficiency programs must meet the Societal Cost test	All available cost-effective energy efficiency	Reduce market barriers to investments in cost-effective energy efficiency	Maximize cost-effectiveness given limited funding	All cost-effective energy efficiency	Least cost planning including environmental costs
Cost-Effectiveness Test(s) & Application	Primary Test	PAC	TRC	Societal	TRC	TRC	TRC	TRC	Societal
	Secondary Test	TRC	Societal; RIM						TRB; PAC
	Primary Screening Level	Program	Portfolio	Portfolio	Program	Program	Measure	Portfolio	Portfolio
	Additional Screening Level(s)		Program	Program, Project, Measure			Project, Program		Program, Project, Measure
	Discount rate used in Test	Utility WACC (currently 7.43%)	Societal Treasury Rate (rate TBD)	Societal 10Yr Treasury (currently 1.87%)	Low-Risk 10Yr Treasury (currently 0.55%)	Prime Rate (currently 2.46%)	Utility WACC (currently 5.5%)	Low-Risk 10Yr Treasury (currently 1.15%)	Societal (currently 3%)
	Study period over which Test is applied	Measure Life	Measure Life	Measure Life	Measure Life	Measure Life	Measure Life	Measure Life	Measure Life
Avoided Costs Included in Primary Cost-Effectiveness Test	Capacity Costs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Energy Costs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	T&D Costs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Environmental Compliance	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Price Suppression	Yes	Yes	Yes	Yes	No	No	Yes	No
	Line Loss Costs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Reduced Risk	No	Yes	Yes	No	No	No	No	Yes
OPIs/NEBs Included in Primary Cost-Effectiveness Test	Utility OPIs	No	No	No	Quantified	No	No	Quantified	Part of 15% Adder
	Participant OPIs								
	Resource	No	Yes - Calculation TBD	Quantified	Quantified	Quantified	Quantified	Quantified	Quantified
	Low-Income	Qualitative	No	Part of 10% Adder	Quantified	Qualitative	Qualitative	Quantified	Additional 15% Adder
	Equipment	No	No	O&M Quantified	Quantified	No	Qualitative	Quantified	O&M Quantified
	Comfort	No	No	Part of 10% Adder	Quantified	No	No	Quantified	Part of 15% Adder
	Health & Safety	No	No	Part of 10% Adder	Quantified	No	No	Quantified	Part of 15% Adder
	Property Value	No	No	Part of 10% Adder	Quantified	No	No	Quantified	Part of 15% Adder
	Utility Related	No	No	Part of 10% Adder	Quantified	No	No	Quantified	Part of 15% Adder
	Societal OPIs	No	No	Part of 10% Adder	No	No	No	Quantified	Part of 15% Adder

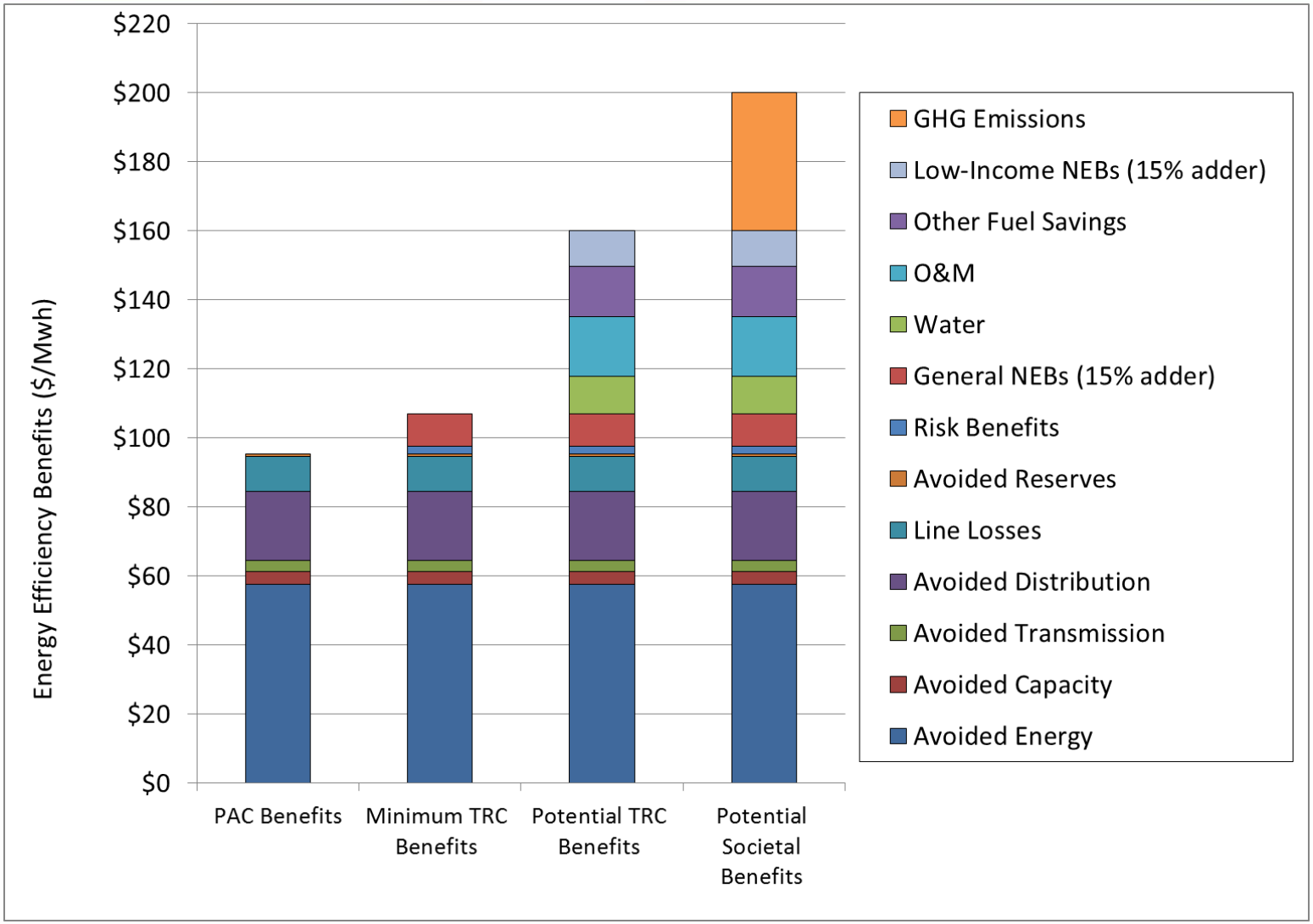
Source: Northeast Energy Efficiency Partnership, October 2013.

Energy Policy Goals in Legislation in Select States

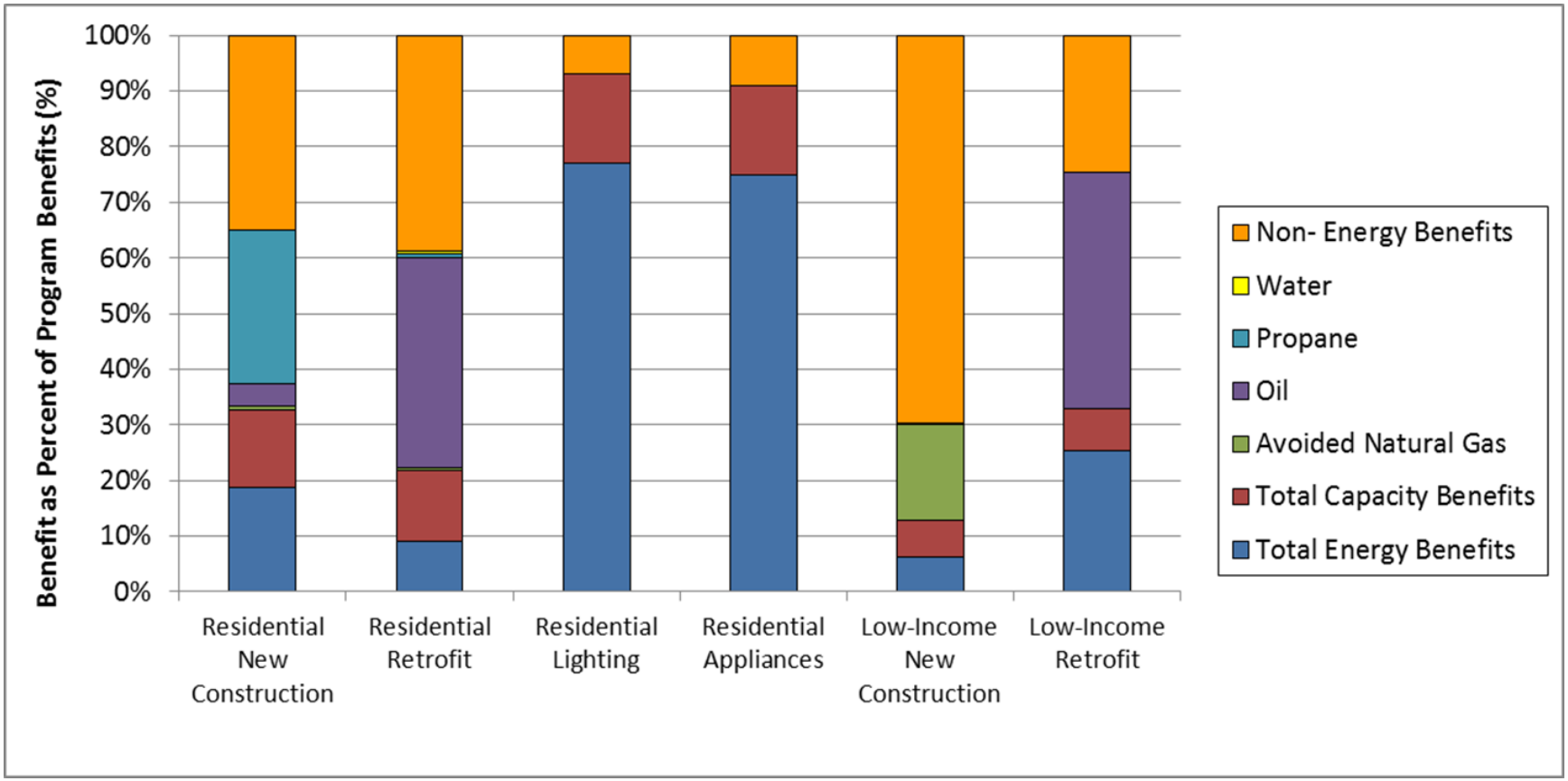
Public Policy	CA	CO	DE	IL	ME	MA	MI	NV	NM	NY	NC	RI	VT	VA	WA
All Available Energy Efficiency	✓				✓	✓			✓			✓	✓		✓
Utility System Policies:															
System Reliability*	✓		✓	✓				✓	✓	✓	✓	✓	✓	✓	
Affordability / Least Cost*	✓		✓	✓			✓		✓		✓	✓	✓	✓	
Resource Adequacy	✓		✓	✓			✓		✓	✓	✓	✓	✓	✓	
Resource Diversity*	✓	✓	✓	✓			✓	✓			✓	✓		✓	
Energy Security / Reduce Imported Fuels*	✓						✓		✓				✓		✓
Fair Utility Regulation				✓							✓				
Efficient Use of Resources / System Efficiency*			✓	✓				✓			✓	✓	✓	✓	
Economic Use of Resources*				✓				✓		✓	✓				
Consumer/Societal Policies:															
Public Interest (1)	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		✓	
Reasonable Rates	✓	✓	✓	✓			✓		✓		✓				✓
Reduce the Burden on Low-Income Customers*									✓			✓		✓	
Equity				✓							✓	✓			
Economic Development*	✓	✓	✓					✓		✓		✓	✓	✓	✓
Meet Long-Term Needs		✓	✓	✓						✓	✓				
Encourage Private Investment							✓								
Environmental Policies:															
Environmental Quality (2)*	✓	✓	✓	✓			✓	✓	✓	✓		✓	✓	✓	✓
** An asterisk indicates a policy goal that efficiency helps to achieve.*															

Source: Synapse. Preliminary, high-level summary to illustrate the types of policies in used in some states. Not meant to be exhaustive.

One Example of NEB Impact Treatment - Vermont



Impacts of NEB Assumptions – MA Utility Actual



Implications of Different Discount Rates