Synapse
Energy Economics, Inc.

Energy Efficiency Screening: Application of the TRC Test

Energy Advocates Webinar

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Recent Research on EE Screening

- Synapse Energy Economics, *Energy Efficiency Cost-Effectiveness Screening: How to Properly Account for Other Program Impacts and Environmental Compliance Costs*, prepared for the Regulatory Assistance Project, November 2012.

- Synapse Energy Economics, *Best Practices in Energy Efficiency Program Screening: How to Ensure that the Value of Energy Efficiency is Properly Accounted for*, prepared for the National Home Performance Council, July 2012.

- Both are available at www.synapse-energy.com.

Main Take-Away Points

- There is considerable debate over whether using the Total Resource Cost (TRC) test is better than using the Program Administrator Cost (PAC) test.
  - My view: it depends.
- Most states do not apply the TRC test properly, leading to a significant undervaluation of energy efficiency benefits.
- Applying the TRC test properly requires fully accounting for Other Program Impacts (e.g., non-energy benefits).
- Consumer concerns should be addressed:
  - By addressing customer equity issues.
  - By applying the PAC test strategically.

The Five Standard Cost-Effectiveness Tests

	Participant Test	RIM Test	PAC Test	TRC Test	Societal Cost Test
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	---
Avoided Cost of Environmental Compliance	---	Yes	Yes	Yes	Yes
Other Program Impacts (utility perspective)	---	---	Yes	Yes	Yes
Other Program Impacts (participant perspective)	Yes	---	---	Yes	Yes
Other Program Impacts (societal perspective)	---	---	---	---	Yes
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
Non-Energy Costs	Yes	---	Yes	Yes	Yes
Lost Revenues to the Utility	---	Yes	---	---	---

Other Program Impacts

- We use the term “other program impacts” (OPIs) to include non-energy impacts or non-energy benefits.
- OPIs are those costs and benefits that are not part of the costs, or the avoided cost, of the energy from the utility.
- Examples: increased safety, improved health, reduced O&M costs, increased worker and student productivity, increased comfort, improved aesthetics.
- OPIs also include “other fuel savings,” which are the other fuels that are not provided by the utility, e.g., oil savings.

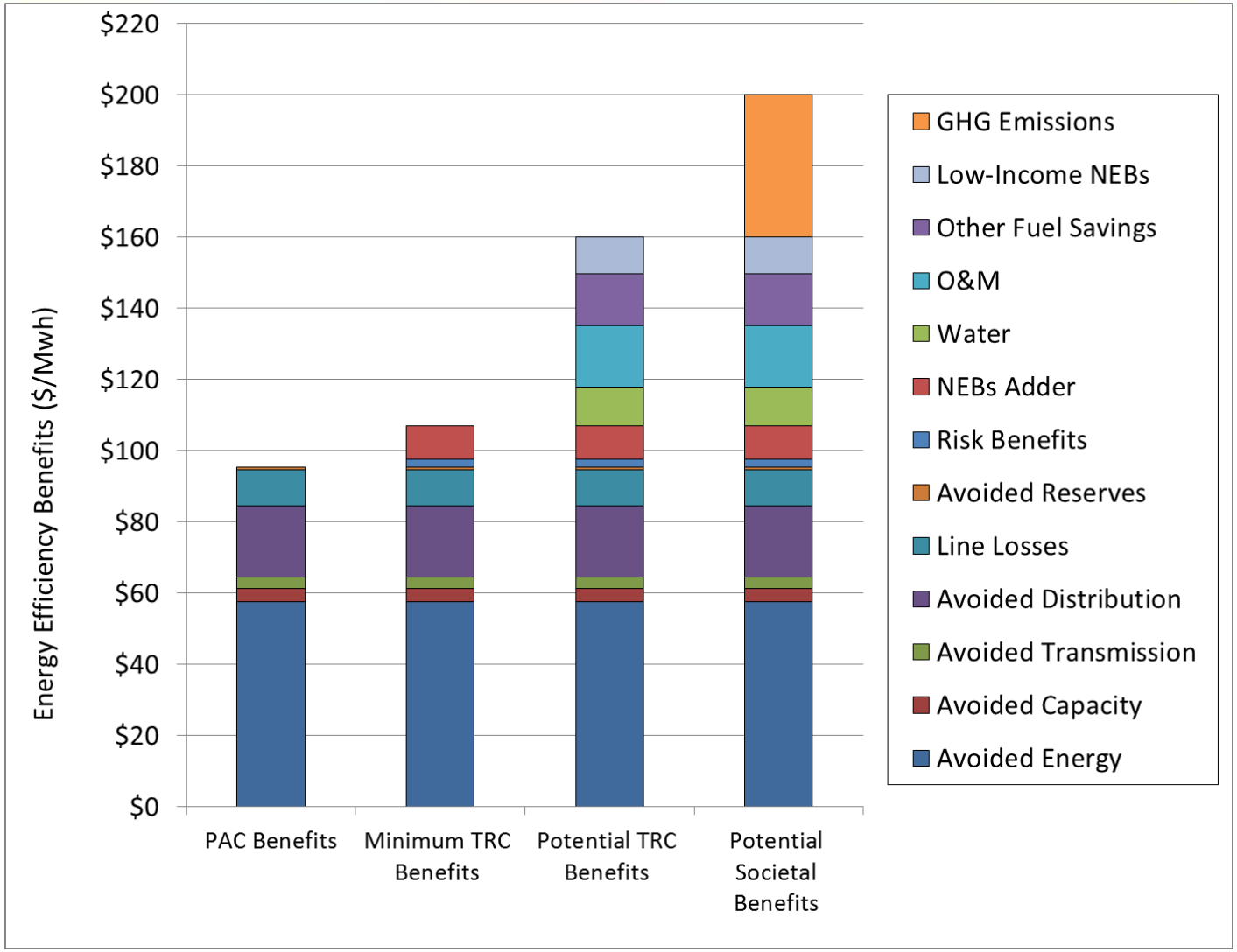
Current Treatment of Other Program Impacts

- Most states use the TRC test, however…
- Most states completely ignore or significantly undervalue OPIs.
- The outcome:
  - The results of the TRC tests are skewed.
  - The value of efficiency is significantly understated.
  - Significantly less efficiency is identified as cost-effective.
  - Some key programs become uneconomic.
  - Less efficiency is implemented.
  - Customers pay higher costs than necessary.

Rationale for Including Other Program Impacts

- OPIs should be included in cost-effectiveness tests in order to ensure that the tests are internally consistent.
  - If the participating customer's costs are included, then that customer's benefits should be included as well.
- Participant's costs can be quite large.
- Participant's non-energy benefits can also be quite large.
- Experience indicates that these non-energy benefits are very important to many customers, sometimes more important than the energy benefits.

One Example of Other Program Impacts (VT)

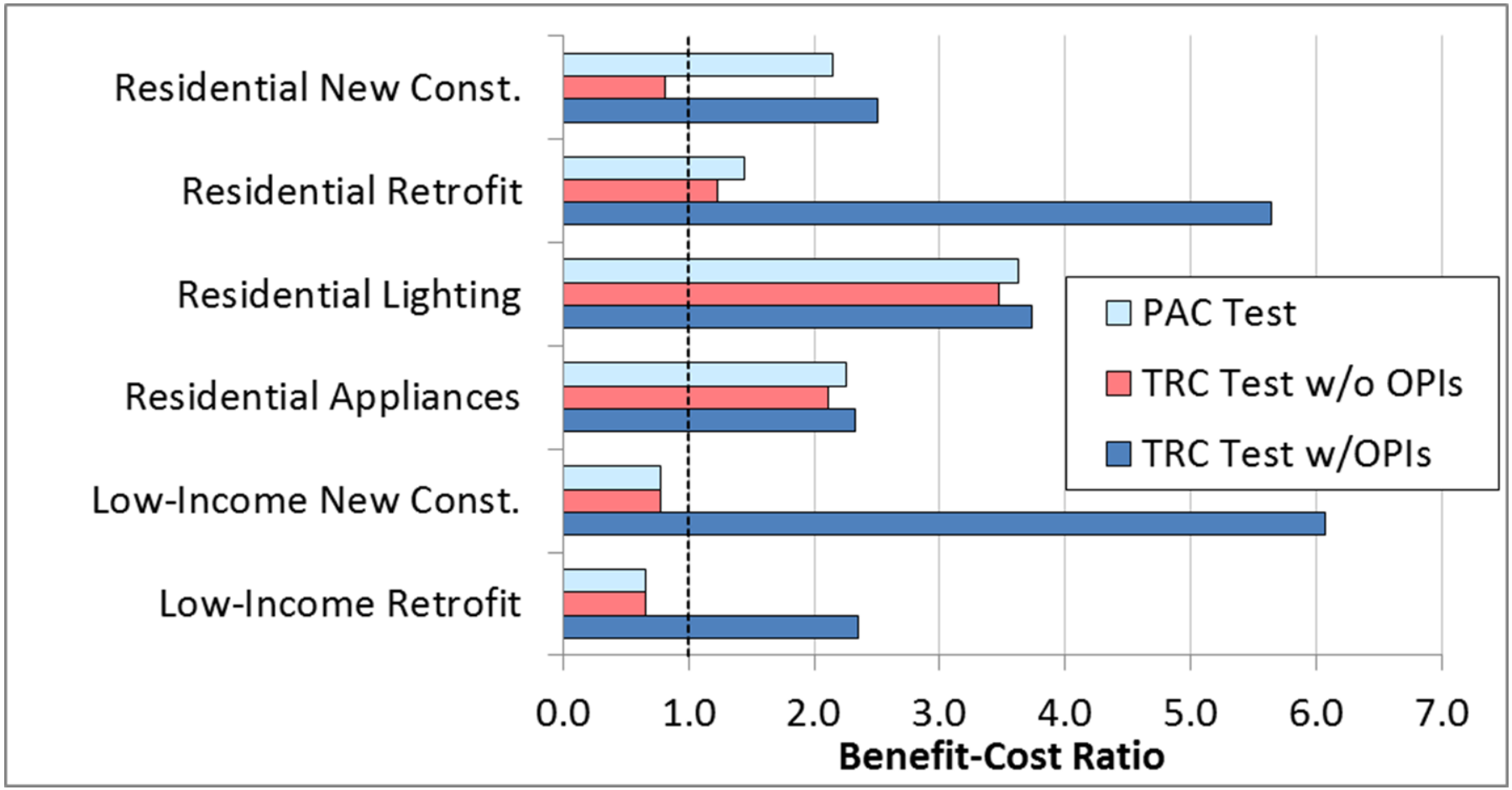


Implications of Including Other Program Impacts

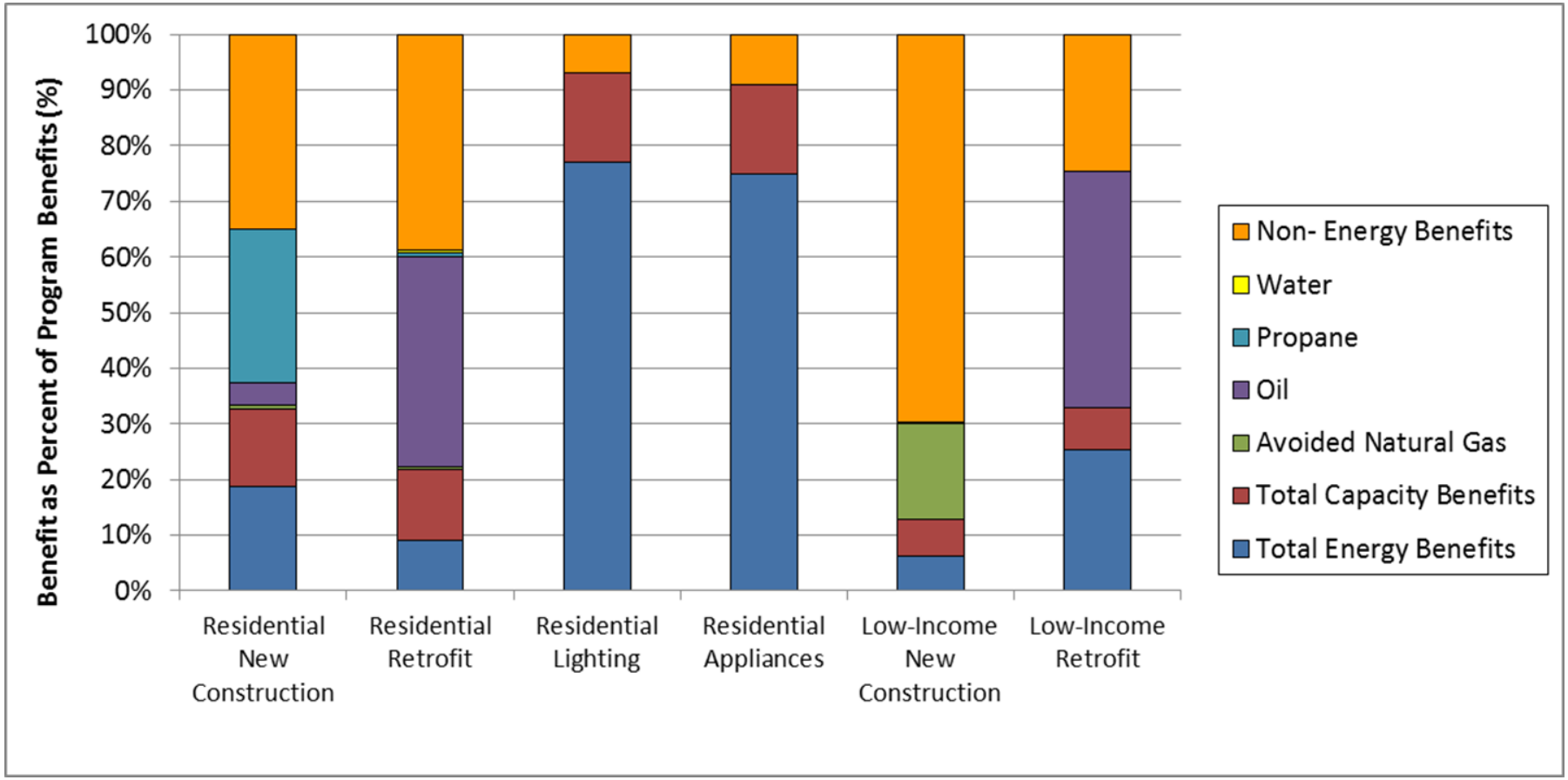
- Other program impacts can have significant impacts on low-income programs, residential retrofit programs and residential new construction programs.
- Ignoring OPIs has the effect of creating lost opportunities, limiting comprehensive treatment, and hindering customer equity.

- [Note: Much of this presentation focuses on residential programs and OPIs, but commercial and industrial customers also have significant OPIs. The same concepts apply there as well.]

Actual Cost-Effectiveness Results For 2012 EE Plan for a Massachusetts PA



Same Cost-Effectiveness Results: Breakout of Benefits by Type



OPIs Raise Certain Key Customer Concerns

- Including OPIs in the TRC test is likely to expand the universe of cost-effective efficiency.
- This may result in increased energy efficiency budgets, or a different mix of energy efficiency programs within given budgets.
- Including OPIs in the TRC test will also require electric and gas utility customers to pay for efficiency programs that result in non-energy benefits.
  - These benefits could be seen as being outside the sphere of electric and gas utility responsibility.

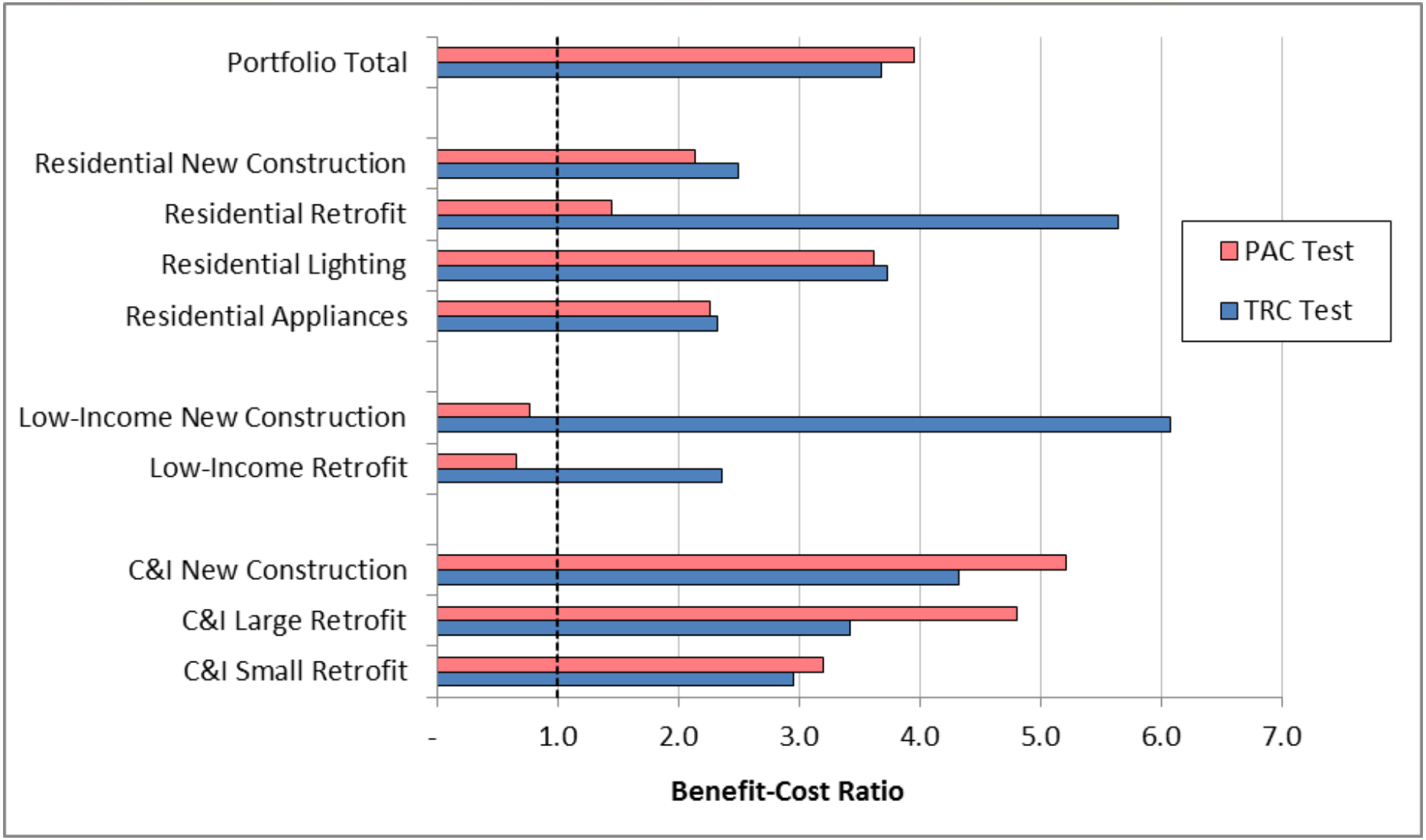
Addressing Customer Concerns

- Including OPIs is necessary to maintaining internal consistency in the TRC test.
  - If regulators decide they do not want to consider costs and benefits outside the utility's sphere, then they should not use the TRC test, use the PAC test instead.
- Including OPIs helps achieve public policy benefits, especially customer equity.
- Overall customer benefits can be ensured by applying the Program Administrator Cost test to the energy efficiency portfolio, as described below.

Recommendations for Applying the Tests

- The Societal Cost or the TRC test should be used to screen energy efficiency programs.
  - The TRC test should be used only if it includes reasonable estimates of OPIs.
- However, in order to address customer concerns, the PAC test should be applied to the entire portfolio of efficiency programs.
  - This will ensure that the entire set of programs will result in a net reduction in costs to utility customers.
  - In the example above, under the PAC test:
    - Utility benefits exceed utility costs by a factor of four.
    - Costs = $195 mil; Benefits = $773 mil; Net Benefits = $578 mil

Cost-Effectiveness Results; TRC and PAC; Portfolio and Program Level



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