Q. Takecharge Electrification, CDM Plan 2021-2025 ("The 2021-2025 Plan")

Page 14, footnote 34. What other types of cost effectiveness testing are other utilities using for electrification programs, and how do they compare to the Modified Total Resource Cost (mTRC) used to evaluate the electrification programs in the 2021-2025 Plan.

A. Table 1 shows the primary economic tests used to evaluate electrification programs in North American jurisdictions.[1]

Table 1:
Current North American Utility Practice
Electrification Economic Evaluation Practices

Jurisdiction	Rate Impacts Assessment	Overall Cost Assessment	Not assessing cost effectiveness
Arizona			X
British Columbia			X
California		X[2]	
Kansas			X
Maryland			X
Massachusetts			X
Missouri		X	
New York		X	
Ohio	X	X	
Oregon	X	X[2]	
Rhode Island	X	X	
Utah			X
Vermont		X	
Washington			X
Total	**3**	**7**	**7**

The majority of jurisdictions that evaluate the cost-effectiveness of electrification programs do so by way of an overall cost assessment. Overall cost assessments evaluate

[1] See the *2021 Electrification, Conservation and Demand Management Application*, Volume 2, Schedule I, page 3.

[2] California and Oregon are using multiple tests in the Overall Cost Assessment category to evaluate cost effectiveness.

programs from the perspective of the customer and the utility, and in some cases account for benefits related to specific policy objectives.

Common utility approaches to overall cost assessments include:

(i) **Total Resource Cost ("TRC") test** - The TRC test includes utility system impacts plus customer impacts.[3] This test typically considers: the avoided cost of energy and capacity on the system; the incremental cost for customers to purchase more efficient technologies; and program administration costs. The key question answered by the TRC test is whether utility system costs and customers' costs will collectively be reduced.[4]

(ii) **Societal Cost test** – Similar to the TRC test, the Societal Cost test considers utility system impacts and customer impacts, including the avoided cost of energy and capacity, the incremental cost for customers to purchase more efficient technologies, and program administration costs. The Societal Cost test differs from the TRC test in that it also considers societal impacts, such as environmental and economic development impacts (e.g. greenhouse gas emission reduction, job creation).[5] The key question answered by the Societal Cost test is whether total costs to society will be reduced.[6]

(iii) **Modified Total Resource Cost (mTRC) test** – Referred to in the National Standard Practice Manual as a jurisdiction-specific test, the mTRC test includes utility system impacts and customer impacts, and can also include impacts associated with achieving applicable policy goals.[7] The key question answered by the mTRC is whether the cost of meeting utility system needs will be reduced, while achieving applicable policy goals.[8]

Newfoundland Power's application proposes to use the mTRC test in evaluating the cost-effectiveness of customer electrification programs. Newfoundland Power's mTRC test is conceptually similar to the TRC test used for the Company's CDM programs, but includes non-electrical benefits for customers.[9] These non-electrical benefits are the

[3] See National Efficiency Screening Project, *National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources*, 2020, page 3-14.

[4] Ibid, page 3-14.

[5] Ibid, page 3-14.

[6] Ibid, page 3-14.

[7] Ibid, page 3-14.

[8] Ibid, page 3-14.

[9] While Newfoundland Power's mTRC includes non-electrical benefits from customer fuel and maintenance savings, other jurisdictions incorporate non-energy benefits in other ways. For example, BC Hydro incorporates a 15% benefit adder in their mTRC calculation to recognize non-energy benefits such as longer product life and reduced maintenance costs. In addition, they also account for greenhouse gas emission reduction benefits. In the Ontario Conservation First Framework, non-energy benefits incorporate a broad range of environmental and economic benefits, including emission reductions, improved air and water quality, and economic competitiveness. They include these benefits using a 15% adder like BC Hydro. See Econoler, *DSM Jurisdictional Scan*. 2019, page 8. These tests are currently used for DSM programs in these jurisdictions.

result of lower fuel and maintenance costs associated with owning an electric vehicle, which are essential to the customer economics of electrification.

Unlike the Societal Cost test, Newfoundland Power's mTRC does not account for other societal benefits, such as job creation benefits or greenhouse gas emission reductions.[10]

Three of 17 jurisdictions shown in Table 1 use a rate impact assessment to evaluate electrification programs. The Rate Impact Measure ("RIM") test is one approach to rate impact assessment. The RIM test can provide an indication of whether or not a program will put upward pressure on rates, but does not define the magnitude of the change.[11] The National Standard Practice Manual does not recommend using the RIM test to assess cost-effectiveness or rate impacts.[12]

In addition to using the mTRC test to evaluate the cost-effectiveness of electrification programs, Newfoundland Power also assessed the customer rate impacts of its electrification programs through a net present value analysis.[13]

[10] See response to Request for Information PUB-NP-031 for more information on the mTRC test.

[11] See National Efficiency Screening Project. *National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources*, 2020, page A-4.

[12] Ibid., page E-5-6.

[13] See the *2021 Electrification, Conservation and Demand Management Application*, Volume 1, Exhibit 2, Appendix A.