Q. Page 2-15, lines 2-3: Please explain why the Rate Impact Measure test is no longer widely used in evaluating customer energy conservation programs.

A. The specific approach to cost effectiveness evaluation for customer energy conservation programs is established to reflect the policy objectives in each jurisdiction. Typically, North American jurisdictions have adopted a mix of the five industry standard economic cost-benefit tests that assess impacts from a variety of perspectives.[1] The Ratepayer Impact Measure ("RIM") is one of these five tests.

The RIM test provides an indication of the impact of energy efficiency programs on utility rates with a focus on those customers that do not participate in the energy efficiency programs. The costs considered in the RIM test include all the expenditures by the utility, as well as the lost revenues to the utility as a result of lower sales. The benefits include the avoided utility supply costs.[2]

The RIM test was widely used as a primary cost effectiveness screen by utilities in the late 1980s and early 1990s. Recent research indicates only one Canadian utility and 2% of United States jurisdictions currently use the RIM test as a primary benefit cost test for program screening.[3]

This trend appears to reflect a number of key factors. Most importantly, when a utility's customer rates are higher than the marginal cost of supply which would be avoided, the RIM test calculation will typically result in a cost-benefit ratio of less than one. In other words, each kilowatt hour conserved results in lost revenue to the utility which exceeds the value of its avoided supply. This situation exists in many jurisdictions, causing potential programs to fail the RIM economic screening.[4] Use of the RIM test was observed to result in "limited energy efficiency investment, as it is the most restrictive of the five cost-effectiveness tests."[5]

In recent years this effect has been increasingly significant, particularly in regions where the marginal costs of electricity supply have been impacted by lower costs of natural gas, which is frequently the fuel used by marginal generators. For example, Ameren Missouri

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1 The five tests include: Societal Cost, Total Resource Cost, Program Administrator (or Utility) Cost, Ratepayer Impact Measure, and Participant Cost. A number of jurisdictions have adopted modifications to the standard calculations, as originally defined in the California Standard Practice Manual.

2 See the Ontario Independent Electricity System Operator, *Conservation and Demand Management Energy Efficiency Cost Effectiveness Guide*, March 2015, page 12.

3 See Schedule B in the *Five-Year Conservation Plan: 2016 - 2020, Volume 2, Exhibits & Supporting Materials, Reports, Tab 1.*

4 All of Newfoundland Power's residential customer energy conservation programs in 2016 would not pass the RIM test. This is primarily due to forecast reductions in the marginal costs arising from the Muskrat Falls project. Currently, the marginal energy cost primarily reflects fuel burned at Holyrood. By contrast, the Muskrat Falls project, which is expected to have high fixed costs, is expected to have low marginal energy costs.

5 See U.S. Environmental Protection Agency National Action Plan for Energy Efficiency *Understanding Cost-Effectiveness of Energy Efficiency Programs, November 2008*, page ES-2.

reported in 2014 that it's avoided cost of energy had been reduced to almost half of that used in its previous conservation planning cycle, which was based on data from 2009/10. The most significant contributing factor cited was the decrease in the market price of natural gas.[6]

At the same time, the average cost per kilowatt hour conserved through programming has increased in many jurisdictions. An abundance of opportunities may in the past have allowed many efficiency measures to easily pass economic screening. However, as these low-hanging fruit are harvested, and baseline energy consumption is improving, the remaining efficiency improvement opportunities present tighter economic margins.[7]

The RIM test typically presents a simplistic indication of whether rates will increase or decrease. It does not provide an indication of the extent to which rates will increase, the timing of the rate increase, or the number of participants that will experience reduced bills. The RIM test is also sensitive to projections of long-term rates and marginal costs, which can be hard to predict.[8]

A report conducted by the U.S. National Efficiency Screening Project states "The rate impacts from efficiency resources are essentially a matter of customer equity, but the RIM test is not a good indicator of customer equity: It is overly narrow, ignores many of the benefits of energy efficiency programs, is inconsistent with the assessment of supply-side resources, does not necessarily reflect the actual impact on rates, and deprives customers of the opportunity to lower their bills through energy efficiency measures."[9]

British Columbia is one example of a jurisdiction that removed the requirement for the RIM test in energy efficiency program screening. In the fall of 2008, the Province of British Columbia enacted regulations to support the government's energy policy, specifically its strategy to increase energy efficiency, reduce energy bills, and achieve provincial greenhouse gas emission reduction targets.[10] This included prescribing a modified Total Resource Cost test as the primary cost-effectiveness screening approach, with the Utility Cost Test (or Program Administrator Cost test) to be used as the secondary screen, and excluding use of the RIM test.[11]

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6 See Ameren Missouri, *2016-2018 Energy Efficiency Plan, December 2014,* pages 26-27.

7 See American Council for an Energy-Efficient Economy (ACEEE*), Screening DSM: When the TRC Blocks Efficiency, What's Next?, 2012,* page 6-82. This effect also impacts outcomes of other standard economic tests, including the Total Resource Cost test.

8 See the Independent Electricity System Operator's *Conservation and Demand Management Energy Efficiency Cost Effectiveness Guide,* March 2015, page 13.

9 The National Efficiency Screening Project is a group of organizations working together to improve the way that utility customer-funded electricity and natural gas energy efficiency resources are screened for cost-effectiveness. See their report *The Resource Value Framework: Reforming Energy Efficiency Cost Effectiveness Screening,* The National Efficiency Screening Project, August 2014, Page 6.

10 See *B.C. Reg 326/2008 Demand Side Measures Regulation*. Also see the BC Ministry of Energy and Mines Electricity and Alternative Energy Division's *Guide to the Demand-Side Measures Regulation*, August 2012.

11 The Program Administrator Cost test or PAC represents the total impact to the utility revenue requirement.