DIVISION OF PUBLIC UTILITIES & CARRIERS
JOINT PRE-FILED DIRECT TESTIMONY
(PART 2)

DIRCT TESTIMONY OF
TIM WOOLF AND BEN HAVUMAKI

On the Topic of

Macroeconomic Impacts
and Their Role in Assessing Cost-Effectiveness

November 17, 2021

Table of Contents

1. INTRODUCTION

Tim Woolf

Q. Please state your name, title, and employer.

A. My name is Tim Woolf. I am a Senior Vice President at Synapse Energy Economics, located at 485 Massachusetts Avenue, Cambridge, MA 02139.

Q. Please describe Synapse Energy Economics.

A. Synapse Energy Economics is a research and consulting firm specializing in electricity and gas industry regulation, planning, and analysis. Our work covers a range of issues, including economic and technical assessments of demand-side and supply-side energy resources; energy efficiency policies and programs; power sector transformation; integrated resource planning; electricity market modeling and assessment; renewable resource technologies and policies; and climate change strategies. Synapse works for a wide range of clients, including state attorneys general, offices of consumer advocates, trade associations, public utility commissions, environmental advocates, the U.S. Environmental Protection Agency (EPA), U.S. Department of Energy, U.S. Department of Justice, the Federal Trade Commission, and the National Association of Regulatory Utility Commissioners. Synapse has over 40 professional staff with extensive experience in the electricity industry.

Q. Please summarize your professional and educational experience.

A. Before joining Synapse Energy Economics, I was a commissioner at the Massachusetts Department of Public Utilities (DPU) from 2007 through 2011. In that capacity, I was responsible for overseeing a substantial expansion of clean energy policies, including significantly increased ratepayer-funded energy efficiency programs; an update of the DPU energy efficiency guidelines; the implementation of decoupled rates for electric and gas companies; the promulgation of net metering regulations; review and approval of smart grid pilot programs; and review and approval of long-term contracts for renewable power. I was also responsible for overseeing a variety of other dockets before the Commission, including several electric and gas utility rate cases.

Prior to being a commissioner at the Massachusetts DPU, I was employed as the Vice President at Synapse Energy Economics; a Manager at Tellus Institute; the Research Director at the Association for the Conservation of Energy; a Staff Economist at the Massachusetts Department of Public Utilities; and a Policy Analyst at the Massachusetts Executive Office of Energy Resources.

I hold a Masters in Business Administration from Boston University, a Diploma in Economics from the London School of Economics, a BS in Mechanical Engineering and a BA in English from Tufts University. My resume is attached as Exhibit TW/BH-1.

Q. Have you previously testified before the Rhode Island Public Utilities Commission?

A. Yes. I have testified before the Rhode Island Public Utilities Commission (the Commission) on behalf of the Division of Public Utilities and Carriers (the Division) multiple times:

- On National Grid's (the Company) energy efficiency plans in many dockets since 2001
- On National Grid's recent rate case in Dockets 4770 and 4780
- On National Grid's advanced metering functionality pilot in Docket 4783

In addition, I was an active member of the Docket 4600 Working Group that developed the Rhode Island Test for assessing the cost-effectiveness of utility investments.

Ben Havumaki

Q. Please state your name, title, and employer.

A. My name is Ben Havumaki. I am a Senior Associate at Synapse Energy Economics, located at 485 Massachusetts Avenue, Cambridge, MA 02139.

Q. Please summarize your professional and educational experience.

A I have approximately five years of experience in the energy field and am formally trained as an economist. At Synapse, where I have been employed since 2018, I focus on macroeconomic modeling, benefit-cost analysis (BCA), and regulatory issues related to ratemaking, rate design, and performance-based regulation. Prior to being hired by Synapse, I worked for the World Bank on a consulting team that authored a field manual on cost-benefit analysis for practitioners in the developing world. I hold a master's in

applied economics from the University of Massachusetts and a bachelor's degree with honors in history from McGill University. My resume is attached as Exhibit MW-BH-2.

Q. Have you previously testified before the Rhode Island Public Utilities Commission?

A. No, I have not previously testified before the Commission.

Purpose of This Testimony

Q. On whose behalf are you testifying in this case?

A. We are testifying on behalf of the Division of Public Utilities and Carriers.

Q. What is the purpose of your testimony?

A. The purpose of our testimony is to discuss the macroeconomic impacts of the energy efficiency programs in the Company's 2022 Energy Efficiency Plan (2022 EE Plan). We describe the role of macroeconomic impacts in the Rhode Island Test developed as part of Docket 4600, and we discuss how those impacts should be accounted for when reviewing the energy efficiency programs for cost-effectiveness. We explain why the monetary values of macroeconomic impacts should not be added to the monetary values in the Company's BCA, and why those impacts should be presented separately alongside the rest of the BCA results.

Q. Are you providing any studies to support your testimony?

A. Yes. Exhibit TW/BH-3 is a March 2021 report prepared by Synapse Energy Economics for the Division of Public Utilities and Carriers, titled *Macroeconomic Impacts of the Rhode Island Community Remote Net Metering Program*. This report was developed as part of a BCA of the Community Remote Net Metering (CRNM) program. The analysis

of macroeconomic impacts in Exhibit TW/BH-3 is directly relevant to the application of macroeconomic impacts in the Company's 2021 EE Plan, so we draw upon that report in this testimony.

Q. Is the Division sponsoring other witnesses that address issues related to your testimony?

A. Yes. The Division is also sponsoring testimony from Joel Munoz and Jennifer Kallay on National Grid's 2022 EE Plan. That testimony is referred to as Part 1 of the Division's testimony, and our testimony is referred to as Part 2.

2. SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

Q. Please summarize your conclusions.

A. We summarize our conclusions as follows:

- The Rhode Island Test clearly requires National Grid to account for macroeconomic impacts in assessing the cost-effectiveness of energy efficiency and other utility resources. However, the Docket 4600 Working Group report and relevant Commission orders provide little guidance on how to account for those impacts.
- Economic impact analyses (EIA), used to calculate macroeconomic impacts, by their nature have significant overlaps with BCAs. Consequently, combining the results of an EIA and a BCA is likely to result in double-counting of the macroeconomic impacts.
- The monetary values of macroeconomic impacts should not be added to the monetary values of the BCA in order to avoid double-counting of these impacts.

Instead, the macroeconomic impacts should be presented separately from, but alongside, the other BCA results. This is the most transparent and accurate way to account for the macroeconomic impacts.

- Gross domestic product (GDP) is not the only or the best indicator of macroeconomic impacts. Other indicators of interest include jobs, state taxes, business income, and personal income.
- These conclusions are applicable to all EIAs for any type of investment made by National Grid.

Q. Please summarize your recommendations.

A. We recommend that the Commission direct the Company to:

- Not add the monetary values of macroeconomic impacts to the monetary values of the BCA in the 2022 EE Plan.
- Present the macroeconomic impacts separately and alongside the BCA results.
- Present the full amount of macroeconomic benefits, not the "net incremental" amount as estimated by the Company.
- Report jobs, GDP, state income taxes, business income, and personal income as metrics for macroeconomic impacts when applying the Rhode Island Test. These metrics should be presented for the energy efficiency portfolio as a whole. For each energy efficiency program, only the job impacts need to be presented.
- Use the same practices outlined above any time the Rhode Island test is used to assess utility programs and investments.

3. MACROECONOMIC IMPACTS IN THE RHODE ISLAND TEST

Q. What is the Rhode Island Test?

A. The Rhode Island Test is used by National Grid to assess the cost-effectiveness of energy efficiency programs and other utility investments. It was developed in Docket 4600 and is described in the Commission orders and the Stakeholder Working Group report from that docket.[1] It is also described in Attachment 4 in the Company's 2022 EE Plan.

Q. Please summarize the Rhode Island Test.

A. The Rhode Island Test builds off the Total Resource Cost Test that has been used for many years to assess the cost-effectiveness of energy efficiency in Rhode Island. The Rhode Island Test includes all utility system costs and benefits, all host customer (i.e., program participant) costs and benefits, and several societal benefits. The societal impacts in the test include: greenhouse gas externality impacts, criteria pollutant and other environmental externality impacts, conservation and community benefits, economic development impacts,[2] innovation and knowledge spillover, societal low-income impacts, and national security and U.S. international influence.

[1] Rhode Island Public Utility Commission, *Guidance on Goals, Principles and Values for Matters Involving the Narragansett Electric Company d/b/a National Grid*, October 27, 2017, Docket No 4600.
Rhode Island Public Utilities Commission, *Report and Order*, In Re: Investigation into the Changing Electric Distribution System and the Modernization of Rates in Light of the Changing Distribution System, Docket No. 4600.

[2] In this testimony we use the term "macroeconomic impacts" synonymously with economic development impacts.

Q. Are there any materials from Docket 4600 that provide guidance on how to account for the macroeconomic impacts of energy efficiency or other investments?

A. There is little information in either the Working Group Report or the Commission orders in Docket 4600 on how to account for macroeconomic impacts. The Working Group report refers to state GDP, employment, and state property taxes. It also notes that "quantitative estimation requires detailed economic modeling."[3] Other than that, no guidance is provided.

Q. Has the issue of how to account for macroeconomic impacts been litigated before the Commission prior to this docket?

A. Not to our knowledge. All of the energy efficiency plans filed since Docket 4600 have included estimates of macroeconomic impacts in the cost-effectiveness analyses. These plans, however, have all been settled by the intervenors; thus, the issue of macroeconomic impacts has not been questioned in depth before the Commission.

We are aware of several other dockets in which National Grid included macroeconomic impacts in its cost-effectiveness analyses.[4] However, these impacts were apparently not dispositive in those analyses and were not questioned in depth before the Commission.

[3] Docket 4600 Stakeholder Working Group, *Report to the Rhode Island Public Utility Commission*, April 5, 2017, Appendix B.

[4] Rhode Island Public Utility Commission, *The National Grid Review of Power Purchase Agreement*, Docket No. 5011, Report and Order, March 30, 2020.
Rhode Island Public Utility Commission, *The National Grid Review of Power Purchase Agreement*, Docket No. 4929, Report and Order, June 7, 2019.

4. ECONOMIC IMPACT ANALYSES

Q. Please provide an overview of how macroeconomic impacts are typically estimated.

A. There are many methods available for estimating macroeconomic impacts.[5] Input-output models, such as REMI and IMPLAN, are frequently used for this purpose because they allow for a relatively detailed assessment of an economy but are not as resource-intensive as some of the other modeling options. Input-output models depict inter-industry relationships within an economy, showing how output from one industrial sector may become an input to another industrial sector. They provide a vast amount of information on how money "flows" through an economy and they produce multiple metrics that help explain economic activity and development.

Q. Please explain the key indicators used to portray macroeconomic impacts.

A. There are many metrics used to quantify, assess, and portray macroeconomic impacts. The key metrics most frequently used include the following:

- *Job creation*. This refers to all the jobs created by the economic activity. Job creation is best represented in terms of job-years. A job-year is equivalent to a full-time employment opportunity for one person for one year (e.g., five job-years could be five jobs for one year or one job for five years).

- *Personal Income*. Personal income refers to the incremental income collectively received by all individuals or households in a country or state. Personal income

[5] See Synapse CRNM Study, Section 3.4.

includes compensation from several sources including salaries, wages, and bonuses received from employment or self-employment.

- *Business Income*. Business income reflects incremental earnings taken by businesses and is equivalent to income earned less costs.
- *State Tax Revenue*. State tax revenue changes are due to incremental changes in economic activity and employment that affect property taxes, sales and gross receipts taxes, individual income taxes, and more.

Q. Please explain the key types of macroeconomic impacts.

A. There are three types of macroeconomic impacts:

- *Direct impacts* consist of the economic activity created from the direct investment in the project, including activity from the design and engineering, construction, operation, and maintenance of the project.
- *Indirect impacts* consist of the economic activity from the supply chain that is necessary to support the direct investment in the project.
- *Induced impacts* consist of the economic activity from employees in newly created direct and indirect jobs spending their paychecks locally on goods and services.

Q. Are all three of these types of impacts relevant to understanding the macroeconomic impacts of energy efficiency and other utility investments?

A. Yes. All three of them play a role in influencing economic development and all three of them affect the four key metrics listed above.

Q. Are there other important aspects to estimating macroeconomic impacts?

A. Yes. When analyzing macroeconomic impacts of a utility program or investment it is important to account for the *net* macroeconomic impacts.

Q. What do you mean by *net* macroeconomic impacts?

A. Utility spending can lead to both an increase and a decrease in economic development. In the case of energy efficiency, the *increased* development is the result of the purchase, installation, and maintenance of more efficient equipment in homes and businesses, while the *decreased* economic development results from investments in generation, transmission, and distribution facilities that were avoided by the energy efficiency. The net macroeconomic impact includes both the increases and the decreases in economic development.

Further, there is another effect that should be accounted for in macroeconomic analyses. When electricity customers experience a reduction in their electric bills, this money saved is assumed to be put back into the economy somehow, leading to additional economic development. This is referred to as the customer respending effect. When utility investments reduce customer bills on average, the customer respending effect leads to increased economic development.[6] When utility investments increase customer bills on average, the customer respending effect leads to decreased economic development.[7]

[6] This is the case for the energy efficiency programs in National Grid's 2022 EE Plan because the utility system benefits exceed the utility system costs.

[7] This is the case for the CRNM program in the Synapse CRNM study, because the utility system benefits do not exceed the utility system costs.

In sum, the net macroeconomic impacts should include increased economic development from increased utility and customer spending, plus reduced economic development from reduced utility spending, plus the customer respending effect.

5. BENEFIT-COST ANALYSES AND ECONOMIC IMPACT ANALYSES

Q. Please describe some of the key similarities between BCAs and EIAs.

A. BCAs and EIAs are both used to inform decisions about whether to proceed with specific investments, programs, or activities. When conducting a BCA and an EIA for a specific investment or program, such as the 2022 EE Plan, both analyses should use the same inputs and same general assumptions. That is, the same energy efficiency costs and benefits used in the BCA should also be used in the EIA.

Q. Please describe some of the key differences between BCAs and EIAs.

A. The two analyses are used for different purposes. BCAs are used to identify the net benefits of a proposed program to inform whether to proceed with the program. EIAs are used to estimate whether and to what extent a proposed program will increase jobs and economic development in a specific state or region.[8]

The two analyses also use very different methods. BCAs estimate the direct costs and benefits associated with the program, while EIAs estimate how money "flows" through the economy. In a BCA, once a dollar is spent (or avoided), it has no further effect on the

[8] See Table 7 in the Synapse CRNM Report for an overview of the differences between BCAs and EIAs.

analysis. EIAs, on the other hand, estimate how a dollar spent will affect multiple industries and parties by being spent and re-spent throughout the economy.

Further, BCAs and EIAs provide very different types of results. BCAs analyze costs and benefits to utilities, customers, and society—costs which are by design mutually exclusive and can be added together. EIAs, on the other hand, analyze different indicators such as jobs, GDP, state taxes, and personal income that are not mutually exclusive and cannot be added together.[9]

Q. Are there areas of overlap between EIAs and BCAs?

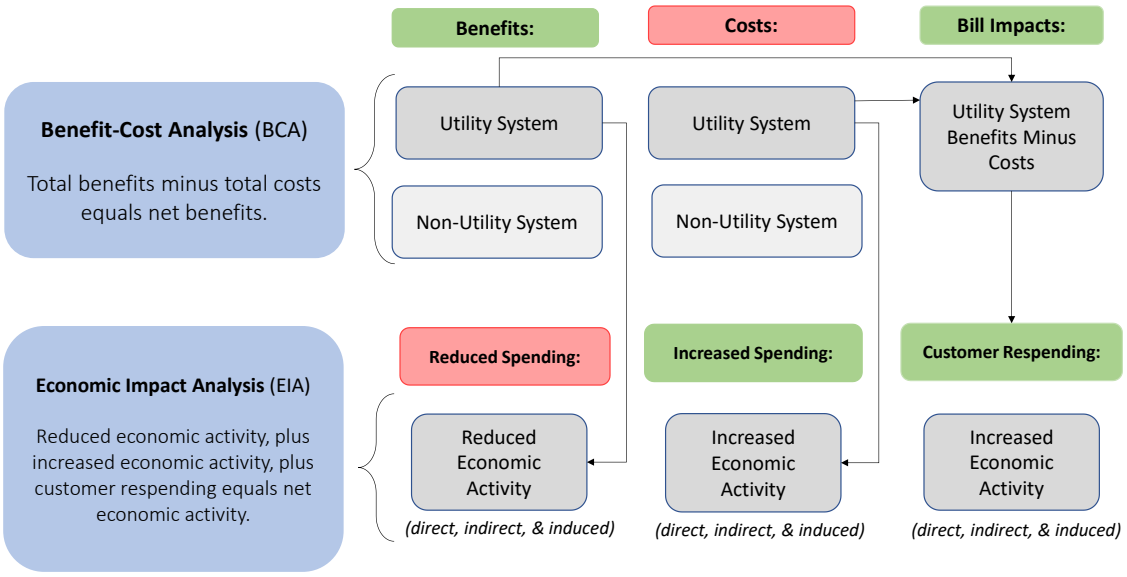
A. Yes, there are many areas of overlap between EIAs and BCAs. As noted above, both types of analysis should use the same assumptions regarding costs and benefits. In this sense, there is 100 percent overlap between the two.

Those same costs and benefits, however, are used for different purposes. In a BCA, money spent on an investment is considered a cost, but in an EIA that same money creates a benefit in terms of increased economic development. Similarly but conversely, in a BCA the money saved from an investment (i.e., the avoided cost) is considered a benefit, but in an EIA that same money saved creates a cost in terms of reduced economic development.

[9] See Figure 2 of the Synapse CRNM Study for a depiction of the inter-relationships between these macroeconomic indicators.

In addition, customer respending effects exist in both BCAs and EIAs, but they are represented in different ways. In a BCA for energy efficiency, the customer bill savings are the difference between the utility system costs and utility system benefits, which are included in the net benefits of the program and therefore do not create an additional benefit. In an EIA for energy efficiency, the customer bill savings result in customer respending effects, which are considered an additional benefit and are added to the other macroeconomic impacts.

The figure below depicts the overlaps between BCAs and EIAs.[10] It shows how the utility system impacts in a BCA feed into the economic activity in the EIA. It also shows how the bill impacts in a BCA relate to the customer respending in the EIA.



[10] This is adapted from Figure 4 of the Synapse CRNM Study.

In sum, BCAs and EIAs use common assumptions about dollars spent and dollars saved, but the implications of those dollars are fundamentally different and in some cases move in opposite directions.

Q. What do you conclude from these overlapping issues between BCAs and EIAs?

A. We conclude that the monetary results of an EIA should not be added to the monetary results of a BCA. To add those two types of results together would result in a significant amount of double-counting of the costs and benefits.

Q. Is this conclusion consistent with economic theory?

A. In preparing the Synapse CRNM Study, we found very little information in the literature addressing the overlap and double-counting between BCAs and EIAs. What we did find is described in Section 3.5 of that study.

Since the preparation of the Synapse CRNM Study, we found an additional document that addresses the relationships between EIAs and BCAs: the U.S. EPA's *Guidelines for Preparing Economic Analyses*.[11] This study notes that one of the main differences between BCAs and EIAs is that the former is interested in the total costs (in the case of the EPA, the total societal costs) while the latter is interested in the distribution of those costs.[12] By "distribution" of costs, the EPA means which industries and industry types will experience economic gains and which will experience economic losses. This term

[11] U.S. Environmental Protection Agency, *Guidelines for Preparing Economic Analyses*, National Center for Environmental Economics, Office of Policy, December 2010, updated May 2014.
[12] U.S. EPA 2014, page 9-2.

might also be referring to the fact that EIAs present information from different vantage points, such as jobs, GDP, state taxes, and personal income. In addition, this EPA study clearly states that the BCA results should be presented separately from the EIA results.[13]

Q. What do you recommend regarding the use of macroeconomic impacts in a BCA?

A. We recommend that the monetary values of results of an EIA should not be added to the monetary results of a BCA. Instead, the results of the EIA should be presented separately and alongside the results of the BCA.

Further, we recommend that when reporting EIA results it is important to present more than just the GDP results. Instead, the EIA should present results for jobs created (in job-years), GDP, state taxes, business income, and personal income. This provides a more holistic view of macroeconomic impacts. If a single metric is used to present macroeconomic impacts, the best metric for that is jobs created because this one result is easiest to understand and does not overlap with the other metrics.

6. MACROECONOMIC IMPACTS OF THE 2022 EE PLAN

Q. Please describe how National Grid estimates macroeconomic impacts for the 2022 EE Plan.

A. National Grid's method for estimating macroeconomic impacts for the 2022 EE Plan is described in Attachment 4 of the Plan. In sum, the Company relied upon studies prepared

[13] U.S. EPA 2014, page 11-2.

for them by the Brattle Group. These studies use the REMI model to estimate the macroeconomic impacts of the energy efficiency programs. They develop a GDP multiplier for each energy efficiency program that can be applied to the program budget to calculate the GDP benefits by program.

Q. How has National Grid used these macroeconomic impacts in the 2022 EE Plan?

A. National Grid does not include the macroeconomic impacts in its "primary" calculation of benefits because of concerns with double counting of these benefits with other benefits included in the BCA.[14] Instead, it presents a secondary set of results where the monetary values of the macroeconomic benefits, in terms of GDP, are added directly to the monetary results of the BCA. The results of the BCA without macroeconomic impacts are presented in Table 5-Primary in Attachment 5 of the 2022 EE Plan, and the results of the BCA with macroeconomic impacts are presented in Table 5-Secondary of that attachment.

Q. Do the macroeconomic impacts have a large effect when added to the BCA results of the energy efficiency programs?

A. Yes. The macroeconomic benefits essentially double the benefits of the energy efficiency programs. For the portfolio as a whole, the benefit-cost ratio without the macroeconomic benefits included is 1.64, but it increases to 3.50 when those benefits are added.[15]

[14] National Grid 2022 EE Plan, page 8.
[15] National Grid 2022 EE Plan, Attachment 5, Table 5-Primary and Table 5-Secondary.

Q. Does National Grid recognize that there is some double-counting between the energy efficiency BCA and the energy efficiency macroeconomic impact estimates?

A. Yes. National Grid recognized this several years ago and asked the Brattle Group to look into the issue. The Brattle Group's analysis was presented in a follow-up to its original report.[16]

Q. How did the Brattle Study address this issue?

A. The Brattle Study recognized that there is likely to be double-counting between the BCA and the macroeconomic impact results. The study concluded that this double-counting occurs as a result of the direct macroeconomic impacts of the customer respending effects of the energy efficiency programs, because these respending effects are essentially the same as the customer bill impacts that are already accounted for in the net benefits in the BCA. The Brattle Study addresses this double-counting by subtracting out the direct macroeconomic benefits created by customer respending, to create "net incremental" macroeconomic impacts. It uses these net incremental impacts to calculate the macroeconomic impacts for the 2022 EE Plan.

Q. Do you agree with the Brattle Study's recommendation for eliminating the double-counting?

A. No. We conclude that there is substantially more double-counting between BCAs and EIAs than just that from the customer respending effect. The figure above shows that

[16] Brattle Group, *Review of RI Test and Proposed Methodology*, prepared for National Grid, January 31, 2019 (the Brattle Study).

there are multiple ways that BCAs overlap with EIAs, including in the way that utility energy efficiency investments lead to increased economic activity and in the way energy efficiency avoided costs lead to reduced economic activity. Furthermore, because some costs in a BCA leads to benefits in an EIA, and vice versa, it is especially difficult to separate any sort of double-counting between the two. For these reasons, we conclude that it is not possible to eliminate the double-counting between BCAs and EIAs.

Q. Since you do not agree with the Brattle Study's recommended method for addressing the double-counting, what do you recommend for accounting for the macroeconomic impacts of the 2022 EE Plan?

A. As noted above, we recommend that the monetary values of macroeconomic impacts not be added to the monetary values for the BCA results—for energy efficiency or any other utility program or investment. Instead, the macroeconomic results should be presented separately alongside the BCA results.

Q. Does National Grid agree with this recommendation?

A. Yes. In response to a discovery request from the Division, the Company notes that "the projected monetary values of economic development benefits should be considered qualitatively or as a sensitivity in the BCA, not as an adder to bill savings or other measures of cost-effectiveness."[17]

[17] National Grid response to Discovery Request Division 2-8.

Further, National Grid provides the BCA results without the macroeconomic impacts included, in the 2022 EE Plan, Attachment 5, Table 6 – Primary. We recommend that the results in this table be used when considering the cost-effectiveness of the 2022 energy efficiency programs.

Q. Does this recommendation mean that the macroeconomic impacts are not important or should not be accounted for when considering the cost-effectiveness of the energy efficiency programs?

A. No. Macroeconomic impacts are important benefits of energy efficiency resources and they should be accounted for, as required by the Rhode Island Test. Our point is that the monetary values of the macroeconomic impacts should not be added to the monetary values of the BCA.

Q. Then how should the macroeconomic impacts of the energy efficiency programs be accounted for when assessing the cost-effectiveness of the programs?

A. The macroeconomic impacts should be considered separately from the BCA impacts. This not only prevents double-counting; it also allows for a more transparent presentation and assessment of the macroeconomic and BCA impacts.

In addition, we recommend that the Company not use the "net incremental" macroeconomic impacts estimated by the Brattle Study. This result does not reflect the full magnitude of macroeconomic impacts because it has subtracted out a portion of them. Since the macroeconomic impacts are no longer being added to the BCA results, there is no need to subtract out a portion of the former from the latter.

Further, we recommend that National Grid present more than just the GDP results from the macroeconomic analysis because GDP is only one metric for understanding macroeconomic impacts. We recommend that the Company also present jobs (in job-years), state taxes, personal income, and business income. There is no need to present this information for each energy efficiency program; it is sufficient to present this information for the portfolio as a whole. The one exception is that it would be useful to present the job impacts for each program separately. The job impacts are the simplest and easiest of the macroeconomic metrics to understand, and there may be some value in seeing how these impacts vary across the different programs.

Q. Do your conclusions and recommendations regarding the macroeconomic impacts of the 2022 EE Plan pertain to other utility programs and investments?

A. Yes. All the points made above regarding the macroeconomic impact of energy efficiency programs apply to other National Grid investments and programs.

Q. Aside from the issues described above, do you have any concerns with the macroeconomic impact estimates used by National Grid in the 2022 EE Plan?

A. We reviewed the macroeconomic analysis conducted by the Brattle Group for National Grid at only a very high level. Based on this review, we did not find any significant concerns with the methods used to prepare this analysis.

However, the macroeconomic values used in the 2022 EE plan are based on an analysis originally conducted in 2019. We recommend that for the 2023 EE Plan the Company

conduct a new macroeconomic analysis to reflect the significant changes that have occurred to the energy efficiency programs since 2019.

Q. Does this conclude your direct testimony?

A. Yes, it does.