

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
PUBLIC UTILITIES COMMISSION

IN RE: REVIEW OF ENERGY EFFICIENCY AND
ADVANCED GAS TECHNOLOGY INCENTIVES
OFFERED by the NARRAGANSETT ELECTRIC
COMPANY d/b/a NATIONAL GRID to TORAY
PLASTICS, INC. FOR A 12.5MW COMBINED HEAT
AND POWER SYSTEM

DOCKET NO. 4397

REPORT AND ORDER

1. Background

In 2012, the R.I. General Assembly amended the Least Cost Procurement Act (“LCP Act” or “Act”) to require the Narragansett Electric Company d/b/a National Grid (“National Grid” or “Company”) to support the installation and investment in clean and efficient combined heat and power (“CHP”) installations.¹ The Act requires the Company to document its support for CHP installations in its annual Energy Efficiency Program Plans (“EEPP” or “EEP Plan” or “Plan”).² According to the Act, National Grid is required to include in its annual EEPP a plan for identifying and recruiting qualified combined heat and power projects, incentive levels, contract terms and guidelines and achievable megawatt targets for investments in combined heat and power systems.³ The Company filed its 2013 Energy Efficiency Procurement Plan on November 2, 2012. The 2013 EEP Plan included a plan for the development of combined heat and power installations and was approved by the Commission by bench decision on December 18, 2012. The 2013 Plan provided that any CHP incentive offer exceeding \$3 million would be approved after thirty (30) days notice to the Commission unless the Commission suspends the filing and/or issues an order within such 30 day period to extend time for review.⁴

¹ R.I.G.L. §39-1-27.7(c)(6)(ii)

² Id.

³ R.I.G.L. §39-1-27.2(c)(6)(iii)

⁴ National Grid’s 2013 Energy Efficiency Procurement Plan, p.20.

II. National Grid's Petition for Approval of Energy Efficiency and Advanced Gas Technology Incentives for a 12.5MW Combined Heat and Power System

On March 8, 2013, National Grid filed a Petition for Approval of Energy Efficiency and Advanced Gas Technology Incentives for a 12.5MW Combined Heat and Power System ("Petition"). On March 28, 2013, the Division of Public Utilities and Carriers ("Division") requested that the Petition be suspended for further review. On April 1, 2013, National Grid voluntarily suspended the Petition to facilitate a thorough and complete review of the \$15.9 million incentive offering.

The Petition sets forth the financial incentives offered to Toray Plastics to install a 12.5MW CHP project at its facilities in North Kingstown, R.I. The Company offered a \$15.9 million incentive package to Toray Plastics which consisted of two energy efficiency incentives of \$13,500,000 and \$590,000, respectively, and an Advanced Gas Technology incentive in the amount of \$1,800,000. The Company described the CHP system as a pair of Kawasaki reciprocating engines totaling 12MW (net) and generating a total of 11,500 pounds per hour (pph) of 135 per square inch gauge (psig) steam and 1000 tons of chilled water.⁵ This system was determined to be the optimal system for Toray Plastics based on a technical assistance ("TA") study performed in March 2012 by Waldron Engineering and National Grid.⁶ The recommendation to install this particular CHP system was based on Toray's 2011 energy uses and anticipated energy and preventive maintenance costs.⁷ The project is expected to reduce electricity consumption of centrally generated grid-supplied energy by 87,473 MWh/year with a total system efficiency of 58% and conserve approximately 65,000 decatherms of natural gas per

⁵ Petition, p.5.

⁶ Id.

⁷ Id.

year.⁸ The project is expected to reduce CO₂ emissions by 4000 short tons per year or 57,000 tons over the life of the system.⁹ The total estimated total cost of the project is \$22.7 million.¹⁰ National Grid's \$15.9 million incentive package equates to approximately 70% of the total cost of the project.¹¹

According to the Petition, the CHP project at Toray Plastics must be installed prior to June 30, 2014.¹² Eighty percent (80%) of the \$13,500,000 installation incentive would be paid to Toray upon demonstration of operability of the CHP system.¹³ The remaining twenty percent (20%) would be paid upon final commissioning of the project.¹⁴ The performance incentives would be paid semi-annually until either the maximum amount of \$590,000 is paid or the date which is four years following final commissioning.¹⁵ The AGT incentive of \$1,800,000 would be paid in three (3) annual payments of \$500,000 followed by one final payment of \$300,000.¹⁶ The energy efficiency incentives are offered pursuant to the Company's 2013 Energy Efficiency Procurement Plan which was approved by the Commission on December 18, 2012.¹⁷ The Advanced Gas Technology incentive is authorized pursuant to the Advanced Gas Technology Program which was approved by the Commission in 1996.¹⁸ Since the AGT incentive is more than \$500,000, Commission approval is required.¹⁹

III. Division Memoranda filed May 17, 2013

⁸ Id.

⁹ Id., p.6.

¹⁰ Id., p.5.

¹¹ Id., p.7; Offer Letter, p.1.

¹² Petition, Attachment A (Offer Letter dated January 28, 2013)

¹³ Id., p.7.

¹⁴ Id.

¹⁵ Id.

¹⁶ Id.

¹⁷ National Grid files an energy efficiency procurement plan on November 1 of each year pursuant to the Least Cost Procurement Act (R.I.G.L. §39-1-27.7).

¹⁸ See Compliance Settlement (June 18, 1996), Docket 2025.

¹⁹ Commission Order No.20231 (Docket 4196).

On behalf of the Division, Timothy Woolf of Synapse Energy Economics, Inc. reviewed the \$13.5 million energy efficiency incentives offered by the Company to Toray Plastics, Inc. and filed a memorandum on May 17, 2013 summarizing his findings and recommendations. After reviewing the energy incentive package, Mr. Woolf recommended that the energy efficiency incentive of \$13.5 million be funded from the Company's 2013 and 2014 energy efficiency budgets, instead of funding the entire incentive solely from the 2013 energy efficiency budget, as proposed by the Company. Specifically, Mr. Woolf recommended that the Company set aside \$7 million from its 2013 energy efficiency budget and \$6.5 million from its 2014 energy efficiency budget. Mr. Woolf advised that spreading the funding for the incentive over two years would put less strain on the 2013 budget and minimize the need for the Company to transfer funds from other programs or sectors.

Mr. Woolf found that the Company's assessment of economic development benefits associated with the Toray project had a very large impact on the results of the cost effectiveness test. The Company's analysis of economic development benefits was based on the methodology approved in the Company's 2013 Energy Efficiency Plan. The Company calculated that \$35 million in economic development benefits would flow from the Toray project. Mr. Woolf pointed out that this \$35 million in economic development benefits accounted for approximately 85% of the benefits considered in the benefit cost analysis. He further noted the benefit cost ratio would have been 0.41 if the economic development benefits of \$35 million had been excluded from the calculation of the benefit cost ratio.²⁰ Given the large impact of the economic development benefits on the cost effectiveness analysis, Mr. Woolf recommended that the Company work with the DSM Collaborative to refine the methodology for assessing the economic impact of future CHP Projects.

²⁰ Division 6, p.3.

Steven Scialabba, Chief Accountant for the Division, filed a memorandum with the Commission on May 17, 2013 reviewing his findings and recommendations regarding the Company's proposed AGT incentives of \$1.8 million. Mr. Scialabba found the Toray project to be consistent with the intent of the AGT program and the amount of the AGT incentive within the parameters established for the AGT program. Mr. Scialabba noted that the AGT program was approved by the Commission in Docket 2025.²¹ He stated that the AGT program is designed to promote the development and use of natural gas technologies that will increase the use of natural gas during periods of low demand.²² Increased off-peak usage reduces the unit cost of gas for all customers by increasing distribution revenues to support fixed costs associated with resources needed during peak demands.²³ The AGT program is funded through base rates in the amount of \$300,000 and is also a component of the DAC. Mr. Scialabba reported that for the present DAC period, the AGT component of the DAC is \$0.00/Dkt, and therefore the total annual amount currently collected is \$300,000 through base rates only.²⁴ In past years, the AGT fund had also collected an additional \$300,000 through the DAC for an annual total of \$600,000, but that amount was decreased in the last DAC docket at the Division's request due to lack of program activity for an extended period.²⁵ Mr. Scialabba reported that the present balance in the AGT fund is \$2.3 million.²⁶ The last AGT incentive to be awarded, prior to Toray's AGT incentive, was \$187,000 to help fund a local waste-hauler's on-site CNG filling station.²⁷

In his memorandum, Mr. Scialabba posed the following 4 questions to National Grid. Mr. Scialabba asked the Company to explain its right to inspect Toray's records concerning

²¹ Division 7, p.1.

²² Id.

²³ Id.

²⁴ Id.

²⁵ Id.

²⁶ Id.

²⁷ Id.

performance of the project for a period of four years. He asked the Company to explain the discrepancy between the terms of the Offer Letter and the Company's response to a data request. Specifically, he asked the Company to explain why National Grid's Offer Letter to Toray requires Toray to return the full rebate to National Grid within 4 weeks from the date of the termination letter, in the event of under-performance, when the Company had responded to a data request that it had no form of guarantee from Toray regarding its estimated incremental margin revenue. Mr. Scialabba also inquired as to how ratepayers would be protected from the inefficient use of ratepayer provided rebate funds in the event of Toray's under performance. Mr. Scialabba asked the Company to provide the Commission and the Division with a copy of the draft gas service agreement between Toray and National Grid regarding the provision of firm gas service to the CHP system. Finally, Mr. Scialabba asked the Company to explain why it had originally reported that the Toray project would necessitate the expenditure of construction costs totaling \$249,482 then later responded in a data request that the Toray project would require capital upgrades totaling \$886,010. According to the data response, it would cost the Company an estimated \$886,010 to install a new main near the project to serve the additional load and to ensure the reliability of its gas distribution system in southern RI. Mr. Scialabba asked the Company to confirm whether the \$886,010 is a re-estimate of the original \$249,482 in construction costs and if so, to explain the large increase. He also asked the Company to explain how these additional costs would affect the economics of the project both from Toray's perspective and the ratepayers' perspective, and he asked the effect of processing this \$886,010 through CIAC.

IV. National Grid's Reply Memorandum

National Grid filed a memorandum on May 30, 2013 in response to the issues raised by Mr. Woolf and Mr. Scialabba. The Company also agreed to adopt all of the recommendations

made by the Division. It agreed to fund the energy efficiency incentives from its 2013 and 2014 energy efficiency budgets. It agreed to work with the Collaborative to refine the methodology for estimating the economic impact of future CHP projects.²⁸ The Company explained that since it is paying for the AGT incentive over a period of four (4) years, it feels it is appropriate to collect performance data for the Toray project over a period of four (4) years.²⁹ The Company explained the discrepancy raised by Mr. Scialabba regarding the so called clawback provision in the Offer Letter versus the Company's statement that it had no form of guarantee from Toray regarding its estimated incremental margin revenue. The Company stated that AGT guidelines provide that Toray would be required to pay back the full rebate to National Grid within four (4) weeks from the date of a letter of termination from National Grid.³⁰ The AGT guidelines provide this termination right during the first 2 years of the project's operation.³¹ Since the size of the Toray AGT incentive is substantially larger than previous incentives, the Company stated that a four (4) year repayment period would be a more efficient use of customer provided rebate funds.³² The Company further noted that its Minimum Requirements Documents allowed National Grid to adjust any remaining incentive amounts in the event of Toray's underperformance.³³ The Company agreed to include the four (4) year repayment period in the final gas service agreement between Toray and National Grid.³⁴

Simultaneously with the filing of its May 30 Reply Memorandum, National Grid filed with the Commission and the Division the draft gas service agreement between Toray and

²⁸ National Grid 4, p.6.

²⁹ Id., p.3.

³⁰ Id., p.4.

³¹ Id.

³² Id.

³³ Id.

³⁴ Id.

National Grid.³⁵ The Company explained the increase in the original capital spending estimate from \$249,482 to approximately \$886,010. It explained that the original capital spending estimate was made in 2012 before new customers had come online changing the Company's system dynamics.³⁶ In order to adapt to these changes, the Company stated that a minimum of 2495 ft. of 12-inch main needed to be installed to maintain the proper pressure to existing customers.³⁷ The Company stated that this additional capital spending would have no effect on the original AGT financial analysis and resulted in the same CIAC of \$600.00 when inputted into the 5 year financial CIAC model.³⁸

V. Division Memorandum (June 7, 2013)

On June 7, Stephen Scialabba filed a memorandum in response to the Company's Reply Memorandum. Mr. Scialabba recommended approval of the \$1.8 million AGT incentive with the following recommendations. Mr. Scialabba was satisfied with the Company's explanation of capital spending requirement associated with the 12.5MW Toray CHP project but recommended that the final, executed gas service agreement between National Grid and Toray Plastics, Inc. include a provision specifying the Company's right to inspect Toray's records for performance during the 4 year AGT payment period. He also recommended that the final, executed gas service agreement include a provision requiring Toray to return the full incentive to National Grid if the project underperforms during the 4-year repayment period. Finally, he recommended that a copy of the final, executed gas service agreement be filed with the Commission.

VI. Hearing and Decision

³⁵ Division 5.

³⁶ National Grid 4, p.5.

³⁷ Id.

³⁸ Id.

Following public notice, the Commission held a hearing in this matter on June 20, 2013 at the Commission's offices located at 89 Jefferson Boulevard, Warwick, Rhode Island. The following appearances were entered:

FOR NATIONAL GRID:	Jennifer Brooks Hutchinson, Esq.
FOR THE DIVISION:	Jon Hagopian, Esq. Karen Lyons, Esq.
FOR THE COMMISSION:	Amy K. D'Alessandro, Esq.

The Commission received testimony from Mark DiPetrillo, Ian Springsteel and Jeremy Newberger of National Grid, as well as Stephen Scialabba and Timothy Woolf for the Division. The Company witnesses reviewed the terms of the Petition and responded to questioning from the Commission. The Company confirmed the total amount of the incentive package, \$15,890,000 was equivalent to approximately 70% of the project cost, consistent with the terms of the 2013 energy efficiency program plan. The Company confirmed that two estimates had been provided for the cost of the project. Waldron Engineering provided the Company with a capital cost estimate of \$26,950,000 for the Toray project, and Toray provided an estimate of \$22,700,000. The Company ultimately selected the lower cost estimate from Toray.

The Company confirmed that 80% to 90% of Toray's requirements met through self-generation would be free of the long-term renewable energy contracting factor and that any revenues not received from Toray would be made up from other distribution customers. The Commission inquired whether this lost distribution revenue was factored into the cost benefit analysis. Mr. Newberger testified that he believed the cost benefit analysis did account for lost

distribution revenue, although he was not certain.³⁹ The Commission issued a record request inquiring what the distribution revenue is today versus what the Company anticipates it to be during the first year of operation of the CHP facility. The Commission asked whether the increased capital spending estimate associated with the project affected the cost benefit ratio. The Company responded that the increased capital spending estimate associated with the project did impact the cost benefit ratio but confirmed that the project, with a cost benefit ratio of 1.89, was still considered cost effective.

The Chairman inquired what the cost of electricity to Toray would be after the installation of the CHP facility. The Commission agreed to receive the response to this question in the form of a record request. The Commission issued two additional record requests, one inquiring about the capacity rating of the Toray facility and another requesting a forecast of the 2014 shareholder incentive associated with the CHP project. The Company testified that it agreed to adopt all of the recommendations of the Division which were read into the record. Specifically, the Company agreed to fund the energy efficiency incentives from its 2013 and 2014 energy efficiency budgets, with \$7,000,000 to be funded from the 2013 energy efficiency budget and \$6,500,000 from the 2014 energy efficiency budget. It agreed to work with the Collaborative to refine the methodology for estimating the economic impact of future CHP projects. It agreed to include in the final, executed gas service agreement between Toray and National Grid a provision specifying that the Company will have the right to collect performance data for the Toray project over a period of four (4) years. It also agreed to include in the final gas service agreement a provision specifying a four (4) year repayment period for the AGT

³⁹ If you look at the aggregate amount of energy efficiency that's being done in Rhode Island, you might say the same thing, that those same costs are being avoided through the broad investment in hundreds of energy efficiency projects by Rhode Island customers, and those same costs that we are talking about might need to be paid for by somebody else. So I have to think that they've somehow accounted for that in their model, but I really can't say for sure. Testimony of Jeremy Newberger, Transcript, p. 36, lines 16-25.

incentive in the event of the project's under performance, and finally, it agreed to file a copy of the final executed gas service agreement with the Commission and the Division.

Timothy Woolf testified regarding his concerns about the Company's estimate of economic development benefits associated with the project. He testified that although the project has large economic development benefits there are substantial gas costs associated with the project that should be factored into the assessment for economic development benefits. He reiterated that the DSM Collaborative should be more involved in the estimate of economic development benefits of future CHP projects. On cross-examination, Mr. Woolf agreed, subject to check, that the \$35,000,000 estimate of economic development benefits applied to the 20-year life of the project which equated to economic development benefits of approximately \$1.75 million per year.

The Commission found that the energy efficiency and AGT incentives offered to Toray Plastics, Inc. totaling \$15,890,000 were consistent with R.I.G.L. §39-1-27.7, the 2013 Energy Efficiency Procurement Plan and AGT program guidelines, and approved the same subject to Division recommendations. As part of the 2013 Energy Efficiency Program Plan approved by the Commission in Docket 4366, and in accordance with R.I.G.L. §39-1-27.2, the Company modified the total resource cost test for CHP programs to include the value of economic development benefits, environmental benefits and local distribution benefits, and applied the same to the proposed 12.5MW CHP project located at the Toray's manufacturing facilities in North Kingstown, Rhode Island. Although environmental benefits were not included in the screening tool used to perform the total resource cost analysis for the Toray project, the record reflects that the Company calculated environmental benefits outside the screening tool and found

that they did not materially alter the benefit cost ratio for the Toray project.⁴⁰ The Company assumed zero local distribution benefits in its cost benefit analysis based on the fact that it already has adequate supply capacity to the area in which the Toray facility is located, and the new CHP system would therefore provide no benefit to the local distribution benefit system.⁴¹ The record further reflects that the Toray project has a cost benefit ratio of 1.89 rendering it cost effective. This cost benefit ratio of 1.89 includes economic development benefits of \$35,000,000 over the life of the project (20 years). The total energy efficiency incentive of \$15,890,000, comprised of a \$13,500,000 installation incentive and \$590,000 performance incentive, is equivalent to 70% of the Toray project's total cost of \$22,700,000, also consistent with the 2013 Energy Efficiency Program Plan approved in 2012 (Docket 4366).⁴²

The AGT incentive of \$1,800,000 offered to Toray Plastics, Inc. is consistent with AGT program guidelines approved by the Commission in Docket 2025 to the extent that it promotes the development and utilization of natural gas technologies and increases natural gas consumption during off peak periods. The record reflects that Toray's CHP system will increase gas consumption by approximately 3,000 to 4,000 therms per day during off peak months thereby improving the system load factor. The Division noted this increase in off-peak gas consumption is one of the primary goals of the AGT program. The Division further found the amount of the AGT incentive, \$1,800,000, consistent with AGT program guidelines. The Commission finds, based on the recommendations of the Division, that the amount of the incentive is both reasonable and consistent with AGT program guidelines which authorize an incentive based on 75% of the lifetime net present value of projected annual incremental gas distribution margin from the project. As noted by the Division, the Company calculated the

⁴⁰ Commission 2.

⁴¹ Id.

⁴² 2013 Energy Efficiency Program Plan, Attachment 2, p.37.

incentive, based on a projected annual incremental gas distribution margin of \$475,261, in a manner consistent with AGT program guidelines. The Company then reduced the incentive to comply with the terms of the Company's 2013 Energy Efficiency Program Plan, yielding the final AGT incentive of \$1,800,000. Based on the foregoing recommendations of the Division, the Commission finds the Company's proposed \$1.8 million AGT incentive to Toray Plastics, Inc. to be reasonable and consistent with AGT guidelines and the 2013 Energy Efficiency Program Plan. The Commission approves the AGT incentive of \$1.8 million to Toray Plastics, Inc. subject to the Division's recommendations.

Mr. Woolf recommended that the Company work with the DSM Collaborative to refine the methodology for assessing the economic impact of future CHP Projects. Mr. Woolf also recommended that the Company set aside \$7 million from its 2013 energy efficiency budget and \$6.5 million from its 2014 energy efficiency budget. The Commission agrees with Mr. Woolf that spreading the funding for the incentive over two years will remove some of the burden on the 2013 budget and minimize the need for the Company to transfer funds from other programs or sectors. Mr. Scialabba recommended that the final, executed gas service agreement between National Grid and Toray Plastics, Inc. include a provision specifying the Company's right to inspect Toray's records for performance during the 4 year AGT payment period. He also recommended that the final, executed gas service agreement include a provision requiring Toray to return the full incentive to National Grid if the project underperforms during the 4-year repayment period. Finally, he recommended that a copy of the final, executed gas service agreement be filed with the Commission. The Commission finds the recommendations of both Mr. Woolf and Mr. Scialabba to be reasonable and appropriate and hereby adopts the same.

Accordingly, it is hereby

(21122) ORDERED:

1. The energy efficiency incentives offered by the Narragansett Electric Company, d/b/a National Grid to Toray Plastics, Inc. in the amount of \$15,890,000, comprised of a \$13,500,000 installation incentive and \$590,000 performance incentive, to be awarded upon completion of the project, are consistent with R.I.G.L. §39-1-27.7 and the terms of the Company's 2013 Energy Efficiency Program Plan, and are hereby approved, subject to the conditions contained in this Order;

2. The Advanced Gas Technology incentive offered by the Narragansett Electric Company, d/b/a National Grid to Toray Plastics, Inc. in the amount of \$1,800,000 is consistent with the terms of the AGT guidelines and is hereby approved;

3. The Narragansett Electric Company, d/b/a National Grid shall fund the energy efficiency incentive of \$13,500,000 from the 2013 and 2014 energy efficiency budgets such that \$7,000,000 shall be funded from the Company's 2013 energy efficiency budget, and the remaining \$6,500,000 shall be funded from the Company's 2014 energy efficiency budget;

4. The Narragansett Electric Company, d/b/a National Grid shall work with the DSM Collaborative to refine the methodology for estimating the economic development benefits associated with future CHP projects;

5. The Narragansett Electric Company, d/b/a National Grid shall include the following provisions in the final, executed gas service agreement between National Grid and Toray Plastics, Inc.:

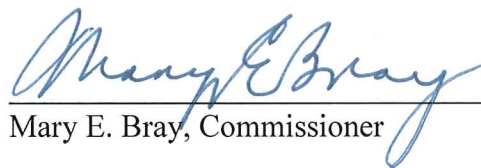
- a. The Company shall have the right to inspect Toray's records for performance during the four (4) year AGT payment period.
 - b. The Company shall have a four (4) year repayment period in which Toray will be obligated to return the full AGT incentive to National Grid in the event of the project's underperformance.
6. The Narragansett Electric Company, d/b/a National Grid shall file a courtesy copy of the final executed gas service agreement with the Commission and the Division.

EFFECTIVE AT WARWICK, RHODE ISLAND ON JUNE 20, 2013 PURSUANT TO A BENCH DECISION. WRITTEN ORDER ISSUED AUGUST 9, 2013.

PUBLIC UTILITIES COMMISSION



Elia Germani, Chairman*



Mary E. Bray, Commissioner

Paul J. Roberti, Commissioner**

*Chairman Germani participated in the decision but was not available for signature.

** Commissioner Roberti concurs with the majority decision to approve the Petition for Approval of Energy Efficiency and Advanced Gas Technology Incentives for a 12.5 MW Combined Heat and Power System. However, he had further comments regarding the cost-benefit analysis. A separate concurring opinion is attached.

NOTICE OF RIGHT OF APPEAL PURSUANT TO R.I.G.L. SECTION 39-26.1-7(d) REFERENCING SECTION 39-5-1, ANY PERSON AGGRIEVED BY A DECISION OR ORDER OF THE COMMISSION MAY, WITHIN SEVEN DAYS (7) DAYS FROM THE DATE OF THE ORDER, PETITION THE SUPREME COURT FOR A WRIT OF CERTIORARI TO REVIEW THE LEGALITY AND REASONABLENESS OF THE DECISION OR ORDER.

Roberti, P., concurring.

I agree with the ultimate decision of the Commission to approve the Petition for Approval of Energy Efficiency and Advanced Gas Technology Incentives for a 12.5 MW Combined Heat and Power System (“Petition”). In doing so, I recognize that the proposed incentive structure and cost-benefit analysis complies with the terms of the 2013 Energy Efficiency Procurement Plan (“EEP Plan”) approved by the Commission on December 18, 2012.⁴³ However, I wish to raise concerns about the mechanics of the cost-benefit analysis and why I believe that the Commission should reexamine the underlying methodology as it applies to future energy efficiency projects such as Toray’s CHP project.

At the outset, I wish to emphasize the importance of energy efficiency as a least-cost planning tool for ratepayers. Rhode Island has always been at the forefront of encouraging energy efficiency and this is borne out by the fact that the State maintains its ranking as one of the lowest per capita electricity consumption states in the nation. I am also a strong believer that expanded use of natural gas warrants greater encouragement in light of the nation’s vast and proven shale gas resources. Deployment of Combined Heat and Power or “CHP” technologies makes sense given that the input fuel is natural gas and further that the systems provide one of the most efficient uses of the resource by combining electricity generation with waste heat recovery directed toward other beneficial uses.

The question presented to State policy makers is how best to capitalize on opportunities presented by not only CHP but all other energy efficiency efforts as well. All of these efforts are

⁴³ *Order No. 20911* (issued December 21, 2013). While the EEP Plan allows an incentive up to 70% of the total cost of the CHP project, I question the reasonableness of this in light of the fact that it requires such a large commitment of ratepayer funds which could have been used to fund several smaller projects. I believe this level of incentive sets up an irrational expectation of project payback periods for future projects.

directly underwritten by ratepayers in the form of a surcharge on customers' bills. In essence, the use of utility-administered energy efficiency funds represents a "transfer" payment from all ratepayers to a much smaller class of customers that participate in the programs. As the funds represent the "commonwealth" of ratepayers, the Commission must be vigilant in its stewardship to see that the funds are not only used wisely, but that ratepayer monies are leveraged as much as possible to achieve the expected societal benefits at the lowest possible cost.

In order to fulfill the Commission's responsibility, the allocation of ratepayer monies to a particular customer or project must be measured against some objective benchmark to justify its use in the first instance. The most generally accepted approach is to assess the cost-effectiveness of a particular measure or program by comparing the ascribed benefits of a particular initiative against the total costs of the initiative. While there are a number of available approaches for assessing cost effectiveness, beginning with the 2009 Demand Side Management Programs, this Commission has consistently used the Total Resource Cost ("TRC") Test which is a method commonly used in a number of other jurisdictions.⁴⁴

In the Order approving the 2013 Energy Efficiency Procurement Plan, the Commission stated as follows: "[T]he 2013 EEPP includes support for combined, heat and power ("CHP") installation pursuant to R.I.G.L. §39-1-27.7, including tariff amendments, incentives and streamlined technical assistance studies for eligible CHP customers, and has an estimated cost benefit ratio of 2.29 for electric and 1.91 for gas."⁴⁵ In this case, the calculated cost-benefit ratio was somewhat lower. In fact, even the most generous cost benefit analysis applied to this project

⁴⁴ See *Order Nos. 19608 (issued 4/6/09); 19621 (issued 4/17/09), 20308 (issued 3/14/11), 20697 (issued 4/9/12).*

⁴⁵ *Order No. 20911 at 3.*

shows a cost benefit ratio of 1.89.⁴⁶ Absent the inclusion of a positive economic benefit analysis, this CHP project might not have qualified for funding under the EEP Plan. As explained and amplified in Division witness Timothy Woolf's Memorandum to the Commission:

The economic development benefits have such a large impact on the results because the net benefits, after accounting for increased gas use, are relatively small. The Company estimates that there will be significant lifetime *electricity benefits* from this project – on the order of \$140 million in present value dollars. However, there will be increased *gas costs* – on the order to \$130 million in present value dollars. The difference between these two results is only \$9.7 million in energy benefits from the project....Relative to this amount, \$35 million in economic development benefits will have a large impact on the cost-effectiveness of the project.⁴⁷

It becomes rather clear that the energy savings alone would likely never justify the costs to ratepayers of supporting this CHP project. Moreover, when taking into account economic development impacts, the applied cost benefit analysis does not appear to take into account the additional costs that will be passed on to other ratepayers through lost distribution, transmission, transition, energy efficiency, renewable distribution energy charges.⁴⁸ Upon further inquiry at the hearing, National Grid's witness explained that the TRC inquiry does not focus on the "direct benefits to the customer," but rather the "broader benefits to the economy at large."⁴⁹ The assumption is that if Toray receives an economic benefit from the project, that benefit would then be re-injected into the economy at large, either by way of increased employment or

⁴⁶ Tr. 6/20/13 at 45; *See supra* Order at 10.

⁴⁷ Exhibit 6 (Memorandum of Timothy Woolf) at 3 (emphasis in original).

⁴⁸ Tr. 6/20/13 at 34-36. National Grid's Response to Commission Record Request 1 shows that at least \$1,135,049 will need to be recovered from other customers excluding transmission costs, some of which will be saved and some of which will need to be recovered from other customers. It also does not take into account the effect on the economy (discretionary income) of these increased costs to customers.

⁴⁹ Tr. 6/20/13, at 34.

increased spending. Under this theory, Toray could “take those funds, and they could shop in local businesses and spare [sic]⁵⁰ the local economy.”⁵¹

In my view, the TRC analysis fails to account for the wealth transfer among ratepayers. In Rhode Island, National Grid is a “fully decoupled” utility, meaning that the Commission must approve “revenue targets” on an annual basis. To the extent that revenues are less than the target, National Grid has a legal right to surcharge ratepayers for any shortfall during the following year.⁵² The record was mute on this point until the Commission questioned witnesses and then propounded record requests during the hearing. The responses, which came after the commission’s decision to approve the project, quantified the extent of lost electric distribution revenues that Toray will no longer have to pay: \$2,156,420 each year as long as the CHP unit operates as expected. Because National Grid’s existing rate structure collects most of the costs of service through volumetrically-based charges, Toray’s on-site generation will reduce the level of kilowatt-hours transmitted across the wires, and translate into a direct reduction of amounts billed for distribution service, transmission service, transition charges, energy efficiency charges, renewable energy programs and taxes on those sales that would otherwise inure to the State’s coffers.

There are a number of implications to be drawn from the record response: First, the State’s distribution and region’s transmission grid must continue to be maintained in a safe and reliable manner, and accordingly, the utility’s revenue requirement to achieve this task must not only be met, but further is essentially guaranteed under the decoupling provisions in existing law. If Toray is substantially alleviated from having to pay towards ongoing support of transmission

⁵⁰ Presumably the witness said or meant “spur”.

⁵¹ *Id.*

⁵² R.I. Gen. Laws § 39-39-1-27.7.1.

and distribution facilities, particularly all the facilities that have been constructed to meet Toray's current peak load demands,⁵³ then all other National Grid electric customers will end up carrying the ongoing financial burden.

Second, the lost contribution from Toray towards the State's renewable energy subsidies, while estimated to be only \$1,724 today, is expected to grow rapidly with the long-term contracts that were executed between National Grid and a number of qualified renewable energy projects, including the landfill gas generation project in Johnston, RI and the "demonstration" wind project off the southeast coast of Block Island.⁵⁴ In earlier dockets before this Commission in which Toray was an intervening party, the additional cost to Toray from just the offshore wind project alone were estimated at approximately \$287,000 in the first year, escalating 3.5 percent each year for twenty years – numbers which are simply not reflected in the lost revenue calculation used in this docket.⁵⁵ Those amounts will also need to be recouped from all other National Grid ratepayers, and combined with the other lost revenues, the annual liability for all other ratepayers will increase to approximately \$3 million per year.

Looking specifically at Toray's annual contribution to the State's energy efficiency fund (which incidentally is paying for approximately 70 percent or \$15,890,000 of the \$22.7 million CHP project), Toray's annual contribution to the EE fund is estimated to drop from \$911,038 today to \$129,911 once the CHP unit becomes fully operational. Under the TRC methodology,

⁵³ On this issue, the "distribution system" benefits were calculated to be zero, making it clear that the CHP unit will essentially "strand" investment that was built to meet Toray's peak load demands. Tr. 6/20/13, at 75. Thus, the avoided distribution cost estimate "came back as zero." *Id.*

⁵⁴ National Grid's Response to Record Request 1 at 2; *See* Docket No. 4371 (Commission Exhibit 2 – National Grid's Response to Commission DR-4-1); Docket No. 4391 (National Grid's Response to Commission Record Requests 3-5).

⁵⁵ Docket No. 4185 (Toray's Motion to Intervene).

the difference of \$781,127 is characterized as “savings.”⁵⁶ This characterization may be appropriate for Toray, but it is hardly fitting to capture the impact on an economy-wide basis, which is precisely what the TRC is supposed to do. The counter-intuitive outcome is driven by two realities: (1) the State’s energy efficiency fund will not only need to be replenished next year by all other ratepayers, but is further slated to grow aggressively over the next few years – but without the traditional support of Toray; and (2) what is deemed to be “savings” for Toray under the TRC methodology essentially will be billed to all other National Grid ratepayers pursuant to legislatively-imposed decoupling tariffs. As a matter of logic, the injection of Toray’s “savings” into the local economy must naturally be offset by the loss of discretionary income to all other ratepayers stemming from the increased costs of energy to all others. To conclude otherwise would represent – as previously recognized by this Commission – “willful blindness as to basic economics . . . that higher energy costs will lead to the loss of regular jobs at existing businesses.”⁵⁷

It was the Division’s witness that first raised the significance of collateral economic consequences in its initial position statement filed in the case.⁵⁸ At the hearing, Mr. Woolf agreed that this issue is “worth pursuing as we look at economic development better in the future.”⁵⁹ I acknowledge the Division’s and National Grid’s willingness to work within the Collaborative to further refine the cost benefit analysis to address the concerns stated above. Therefore, in its review of the 2014 Energy Efficiency Procurement Plan and the review of the next three-year Least Cost Procurement standards and guidelines for the period 2015-2017, I

⁵⁶ See NGrid response to Commission Record Request 1.

⁵⁷ See Order No. 20745 in Docket No. 4111 (issued 4/2/10), at 82.

⁵⁸ Division Exhibit 6 at 2-4.

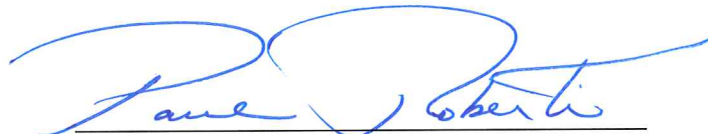
⁵⁹ Tr. 6/20/13, at 103.

believe the Collaborative and the Commission should re-examine the mechanics of the TRC in order to ascertain whether modifications are warranted given the circumstances described above.

In closing, it is important to understand the Commission's mandate under R.I. Gen. Laws § 39-1-27.7(c)(5), which states:

The commission shall issue an order approving all energy efficiency measures that are cost effective and lower cost than acquisition of additional supply, with regard to the plan from the electrical and natural gas distribution company, and reviewed and approved by the energy efficiency and resources management council, and any related annual plans, and shall approve a fully reconciling funding mechanism to fund investments in all efficiency measures that are cost effective and lower cost than acquisition of additional supply, not greater than sixty (60) days after it is filed with the commission.

This Section mandates continued oversight by the Commission for assessing cost-effectiveness of these programs. Cost-effectiveness is one of the core ingredients underlying the Commission's duty to set "just and reasonable" rates. The Commission may only approve the measures and associated rates for programs that are "cost effective and lower cost than acquisition of additional supply." The lynchpin of the Commission's determination to find that a project is, in fact, cost-effective must squarely rest on the logic and economic theory driving any cost-effective determination. The review of the cost-effectiveness for this CHP project highlights the need for the Commission to be vigilant in its review of the cost-effectiveness test used for each type of program or initiative in the Energy Efficiency Procurement Plans.



Paul J. Roberti, Commissioner