

November 27, 2018

**BY HAND DELIVERY AND ELECTRONIC MAIL**

Luly E. Massaro, Commission Clerk  
Rhode Island Public Utilities Commission  
89 Jefferson Boulevard  
Warwick, RI 02888

**RE: Docket 4888 – The Narragansett Electric Company d/b/a National Grid  
2019 Energy Efficiency Program Plan  
Responses to PUC Data Requests – Set 1**

Dear Ms. Massaro:

I have enclosed eleven copies of National Grid's<sup>1</sup> responses to: PUC 1-20, PUC 1-22, PUC 1-23, and PUC 1-24 in the above-referenced docket. I have also enclosed a revised response to PUC 1-21.

Please note that the Company's response to PUC 1-16, which is the only response remaining in this set, is pending.

Thank you for your attention to this filing. If you have any questions, please contact me at 781-907-2121.

Sincerely,



Raquel J. Webster

Enclosures

cc: Docket 4888/4889 Service List  
Jon Hagopian, Esq.  
John Bell, Division

---

<sup>1</sup> The Narragansett Electric Company d/b/a National Grid (National Grid or Company).

Certificate of Service

I hereby certify that a copy of the cover letter and any materials accompanying this certificate was electronically transmitted to the individuals listed below.

The paper copies of this filing are being hand delivered to the Rhode Island Public Utilities Commission and to the Rhode Island Division of Public Utilities and Carriers.

\_\_\_\_\_  
Joanne M. Scanlon

November 27, 2018  
Date

**Docket No. 4888 - National Grid – 2019 Energy Efficiency Plan (EEP)**  
**Docket No. 4889 - National Grid – 2019 System Reliability Procurement Report (SRP)**  
**Service list updated 10/18/18**

<b>Name/Address</b>	<b>E-mail Distribution List</b>	<b>Phone</b>
Raquel Webster, Esq. <b>National Grid</b> 280 Melrose St. Providence, RI 02907	<a href="mailto:Raquel.webster@nationalgrid.com">Raquel.webster@nationalgrid.com</a> ;	781-907-2121
	<a href="mailto:Joanne.scanlon@nationalgrid.com">Joanne.scanlon@nationalgrid.com</a> ;	
	<a href="mailto:Celia.obrien@nationalgrid.com">Celia.obrien@nationalgrid.com</a> ;	
	<a href="mailto:Rachel.henschel@nationalgrid.com">Rachel.henschel@nationalgrid.com</a> ;	
	<a href="mailto:Matthew.Chase@nationalgrid.com">Matthew.Chase@nationalgrid.com</a> ;	
Jon Hagopian, Esq. <b>Division of Public Utilities and Carriers</b>	<a href="mailto:Timothy.Roughan@nationalgrid.com">Timothy.Roughan@nationalgrid.com</a> ;	401-784-4775
	<a href="mailto:Jon.hagopian@dpuc.ri.gov">Jon.hagopian@dpuc.ri.gov</a> ;	
	<a href="mailto:Macky.McCleary@dpuc.ri.gov">Macky.McCleary@dpuc.ri.gov</a> ;	
	<a href="mailto:Jonathan.Schrag@dpuc.ri.gov">Jonathan.Schrag@dpuc.ri.gov</a> ;	
	<a href="mailto:john.bell@dpuc.ri.gov">john.bell@dpuc.ri.gov</a> ;	
Tim Woof Jennifer Kallay Synapse Energy Economics 22 Pearl Street Cambridge, MA 02139	<a href="mailto:Ronald.Gerwatowski@dpuc.ri.gov">Ronald.Gerwatowski@dpuc.ri.gov</a> ;	
	<a href="mailto:Albert.DeMiranda@dpuc.ri.gov">Albert.DeMiranda@dpuc.ri.gov</a> ;	
Marisa Desautel, Esq. ( <b>EERMC</b> ) Law Office of Marisa Desautel, LLC 55 Pine St. Providence, RI 02903	<a href="mailto:twoolf@synapse-energy.com">twoolf@synapse-energy.com</a> ;	401-477-0023
	<a href="mailto:jkallay@synapse-energy.com">jkallay@synapse-energy.com</a> ;	
Mike Guerard, Optimal Energy	<a href="mailto:marisa@desautelesq.com">marisa@desautelesq.com</a> ;	
Mark E. LeBel, Esq. <b>Acadia Center</b> 31 Milk Street Suite 501 Boston, MA 02108	<a href="mailto:guerard@optenergy.com">guerard@optenergy.com</a> ;	617-742-0054 Ext. 104
	<a href="mailto:mlebel@acadiacenter.org">mlebel@acadiacenter.org</a> ;	
Carol Grant, Commissioner	<a href="mailto:ENiedowski@acadiacenter.org">ENiedowski@acadiacenter.org</a> ;	
	<a href="mailto:Carol.grant@energy.ri.gov">Carol.grant@energy.ri.gov</a> ;	

<b>Office of Energy Resources (OER)</b>	<a href="mailto:Christopher.Kearns@energy.ri.gov">Christopher.Kearns@energy.ri.gov</a> ;	
	<a href="mailto:Nicholas.Ucci@energy.ri.gov">Nicholas.Ucci@energy.ri.gov</a> ;	
	<a href="mailto:Becca.Trietch@energy.ri.gov">Becca.Trietch@energy.ri.gov</a> ;	
	<a href="mailto:Carrie.Gill@energy.ri.gov">Carrie.Gill@energy.ri.gov</a> ;	
Andrew Marcaccio, Esq. Dept. of Administration Division of Legal Services One Capitol Hill, 4 <sup>th</sup> Floor Providence, RI 02908	<a href="mailto:Andrew.Marcaccio@doa.ri.gov">Andrew.Marcaccio@doa.ri.gov</a> ;	401-222-8880
Larry Chretien, Executive Director <b>Green Energy Consumers Alliance</b>	<a href="mailto:Larry@massenergy.org">Larry@massenergy.org</a> ;	
<b>Original &amp; 9 copies file w/:</b> Luly E. Massaro, Commission Clerk Public Utilities Commission 89 Jefferson Blvd. Warwick, RI 02888	<a href="mailto:Luly.massaro@puc.ri.gov">Luly.massaro@puc.ri.gov</a> ; <a href="mailto:Cynthia.WilsonFrias@puc.ri.gov">Cynthia.WilsonFrias@puc.ri.gov</a> ; <a href="mailto:Alan.nault@puc.ri.gov">Alan.nault@puc.ri.gov</a> ; <a href="mailto:Todd.bianco@puc.ri.gov">Todd.bianco@puc.ri.gov</a> ; <a href="mailto:Margaret.hogan@puc.ri.gov">Margaret.hogan@puc.ri.gov</a> ;	401-780-2107
Frederick Sneesby Dept. of Human Services	<a href="mailto:Frederick.sneesby@dhs.ri.gov">Frederick.sneesby@dhs.ri.gov</a> ;	
Douglas W. Gablinske, Executive Director The Energy Council of RI (TEC-RI)	<a href="mailto:doug@tecri.org">doug@tecri.org</a> ;	
Kat Burnham, PPL	<a href="mailto:kat@ripower.org">kat@ripower.org</a> ;	
Chris Vitale, Esq., RI Infrastructure Bank	<a href="mailto:cvitale@hvlawltd.com">cvitale@hvlawltd.com</a> ;	

PUC 1-20

Request:

Referencing the annual reductions in combined electric and gas bills over the lifetime of the installed measures compared to not having the 2019 EE charge, is the savings on the low income bill based on the undiscounted rate or the discounted rate (Bates page 6)?

Response:

The low income bill savings calculation referenced on Bates page 6 is based on the following:

- RIPUC Docket No. 4770 for effect on September 1, 2018
  - A-60 Rate
  - Low Income Residential Heating Rate 13
- RIPUC Docket Nos. 4872 (GCR) and 4846 (DAC) for effect on November 1, 2018

The calculation on Bates page 6 inadvertently did not include the 25% discount on the total electric and gas bills for income eligible customers, as stipulated in RIPUC Docket No. 4770.<sup>1</sup>

When the 25% discount on the electric and gas bills for income eligible customers is applied, it does not change the percent that income eligible customers save on their bills as a result of having an energy efficiency plan. However, there is a decrease in the cumulative dollars savings for low income customers because the baseline from which the savings is applied has decreased as a result of the 25% discount.

By applying the 25% discount on the total electric and gas bills for income eligible customers, the calculation on Bates 6 is updated to: 2.49% (\$44.91).

---

<sup>1</sup> Based on Docket No. 4770, a 30% total bill discount will be applied to the total bill of low income customers who qualify for Medicaid, Food Stamps, General Public Assistance, or Rhode Island Works Program. For the purposes of this bill impacts analysis, the 25% discount on total electric and gas bills for income eligible customers is applied.

Revised  
PUC 1-21

Request:

Please provide the calculations for the numbers on the top of Bates page 6. Please also provide the live Excel spreadsheet.

Response:

For the electric programs, please see Revised Attachment PUC 1-21 for electric calculations, which provide the average participant annual electric bill savings over the lifetime of the measures by sector. Revised Attachment PUC 1-21 represents the final output of five separate electric bill impact models (not attached), which were adapted from models originally built by Synapse Energy Economics on behalf of the Division of Public Utilities and Carriers in 2013. In past years, Synapse Energy Economics has also reviewed these models prior to the submission of the annual plans. The five models each contain thirteen tabs with hundreds of calculations in each tab. For a more detailed description of the models and the methodology used to calculate Bill Impacts, please see Bates 316, Attachment 7 of the 2019 Energy Efficiency Program Plan filing.

For the gas programs, please see Revised Attachment PUC 1-21 for the final calculations, which provide the average participant annual gas bill savings over the lifetime of the measures by sector. The natural gas bill impacts were analyzed by adapting an existing gas bill impact model used by the Company in Dockets 4846 and 4872. Although not developed by Synapse Energy Economics, in previous years, Synapse Energy Economics has also reviewed the gas model in addition to the electric models developed by Synapse. For a more detailed description of the gas model and the methodology used to calculate Gas Bill Impacts, please see Bates 323 of the 2019 Energy Efficiency Program Plan filing.

Since the gas model is a simpler model than the electric models, the steps of the calculations for arriving for the gas portion of the numbers listed on Bates 6 are provided in Revised Attachment PUC 1-21. These calculations are listed below.

Please see Revised Attachment PUC 1-21 for live calculations.

Revised  
PUC 1-21, page 2

- 1) **Total 2019 Average Annual Gas Bill without EE Plan** (removes additional EE charge cost based on average annual therm consumption / customer without EE plan)
- 2) **Total 2019 Average Annual Gas Bill for Non EE participant with 2019 EE Plan** = Total 2019 Annual Gas Bill without EE Plan + (Average annual therm consumption with EE plan/ customer \* Gas EE charge)
- 3) **Total 2019 Average Annual Gas Bill for EE Participants with EE Plan** = Total 2019 Annual Gas Bill for Non-participants with EE Plan - (Average annual therm savings per EE participant \* cost/therm including EE charge)
- 4) **Average Additional Cost per customer in 2019 from EE charge** = Total 2019 Average Annual Gas Bill for Non-participant with EE Plan – Total 2019 Average Annual Gas Bill without EE Plan
- 5) **Annual Participant Bill Savings with EE Plan compared to Non Participant (no discount rate)** = Total Average Annual Gas Bill for Participant with EE Plan - Total 2019 Average Annual Gas Bill for Non-participants with EE Plan
- 6) **Net First Year Bill Impacts for Participant** = Average Additional Cost in 2019 from EE charge in 2019 - Annual Participant Bill Savings with EE Plan compared to Non Participant (no discount rate)
- 7) **2019 Present Value of Lifetime Savings** = Annual Participant Bill Savings with EE Plan compared to Non Participant / (1 + Discount rate) ^ (Average measure life for sector)
- 8) **2019 Present Value of Net Savings for Participant over the Lifetime of Measures** = 2019 Present Value of Lifetime Savings - Net First Year Bill Impacts for Participant
- 9) **Present Value of Participant Savings Divided over Lifetime of Measures** = 2019 Present Value of Net Savings for Participant over the Lifetime of Measures / Measure Life
- 10) Present Value of Participant Savings Divided over Lifetime of Measures provides an average gas bill reduction for gas measures over the lifetime of the measures while also taking into account the discount rate and impact of 2019 EE charge on customer bills. This figure is combined with the equivalent figure by customer segment from the electric models to provide the final figures listed on Bates 6 of the 2019 Energy Efficiency Program Plan filing.

Revised  
PUC 1-21, page 3

The revisions in Revised Attachment PUC 1-21 are as follows:

The revised spreadsheet has been updated with new input values from the original Attachment PUC 1-21. These updated values reflect the following three changes that were identified while completing the response to 4888-PUC 1-20:

- 1) Application of the 25% discount rate for A-60 low income electric customers, as approved in RIPUC Docket No. 4770 for effect on September 1, 2018.
- 2) Application of the 25% discount rate for Low Income Residential Heating Rate 13 customers, as approved in RIPUC Docket No. 4770 for effect on September 1, 2018.
- 3) A correction to gas rates utilized in the gas bill impact model for each gas customer segment.

The equations listed in the spreadsheet have not changed. Instead, the inputs have changed. The application of the 25% discounted rate<sup>1</sup> for low income electric and gas customers does not change the percent that they save on their bills as a result of having an energy efficiency plan. However, there is a decrease in the cumulative dollars savings for low income customers because the baseline from which the savings is applied has decreased as a result of the 25% discount rate.

By applying the 25% discount on the total electric and gas bills for income eligible customers, the calculation on Bates 6 is updated to: 2.49% (\$44.91).

While making this update to the discount rate, a minor correction was identified for gas rates.

Table 7 RI Gas Bill Impact Analysis on Bates 324 should be updated to the following:

Rate Group	Rate Impact (% of 2019 Total Rate)	Average Participant Bill Savings (as a % Change in 2019 Bills)	Average Customer Bill Savings (as a % Change in 2019 Bill)
Residential Heating	4.66%	1.59%	0.90%
Low Income Heating	4.70%	25.08%	5.44%
Small Commercial	3.23%	7.31%	0.03%
Large Commercial	3.38%	5.30%	0.31%

<sup>1</sup> Based on Docket No. 4770, a 30% total bill discount will be applied to the total bill of low income customers who qualify for Medicaid, Food Stamps, General Public Assistance, or Rhode Island Works Program. For the purposes of this bill impacts analysis, the 25% discount on total electric and gas bills for income eligible customers is applied.

\*Looks at annual impacts to bills over lifetime of the measures

Customer Segments	Total Average Annual Energy Bill for Participants with EE Plan \$	Total Average Annual Energy Bill without EE Plan \$	Participant Annual Bill Reduction Compared to no EE Plan %	Participant Annual Energy Bill Reduction Compared to no EE Plan \$
Residential	\$ 2,447.91	\$ 2,471.22	-0.94%	\$ 23.31
Income Eligible	\$ 1,760.86	\$ 1,805.77	-2.49%	\$ 44.91
Small C&I	\$ 6,646.26	\$ 6,087.01	-17.82%	\$ 1,440.75
Medium C&I	\$ 21,229.34	\$ 23,763.08	-10.66%	\$ 2,533.74
Large C&I	\$ 519,168.49	\$ 536,175.48	-3.17%	\$ 17,006.99

Rate group	Total Average Annual Electric Bill for Participants with EE Plan \$	Total Average Annual Electric Bill without EE Plan \$	Participant Annual Electric Bill Reduction Compared to no EE Plan %	Participant Annual Electric Bill Reduction Compared to no EE Plan \$
Residential (A-16)	\$ 1,203.19	\$ 1,223.88	-1.69%	\$ 20.70
Income Eligible (A-50)	\$ 848.08	\$ 879.42	-3.56%	\$ 31.34
Small C&I (C-06)	\$ 4,828.91	\$ 6,259.02	-22.85%	\$ 1,430.11
Medium C&I (G-02)	\$ 19,412.00	\$ 21,935.09	-11.50%	\$ 2,523.10
Large C&I (G-32,G-62)	\$ 275,409.20	\$ 291,159.05	-5.41%	\$ 15,749.85

Customer Segment	Total Average Annual Gas Bill for Participants with EE Plan \$ (with PV applied)	Total Average Annual Gas Bill without EE Plan \$	Participant Annual Electric Gas Reduction Compared to no EE Plan %	Participant Annual Gas Bill Reduction Compared to no EE Plan \$
Residential Heating	\$ 1,244.73	\$ 1,247.34	-0.21%	\$ 2.61
Income Eligible Heating	\$ 912.79	\$ 926.36	-1.46%	\$ 13.57
Small C&I Heating	\$ 1,817.34	\$ 1,827.99	-0.58%	\$ 10.65
Large C&I Heating	\$ 243,759.29	\$ 245,016.44	-0.51%	\$ 1,257.14

Customer Segment	Total 2019 Average Annual Gas Bill for EE Participants with EE Plan \$	Total 2019 Average Annual Gas Bill for Non-EE participants with EE Plan \$	Total 2019 Average Annual Gas Bill without EE Plan \$	Average Additional Cost per customer in 2019 from EE charge	Annual Participant Bill Savings with EE Plan compared to Non Participant (no discount rate)	Net First Year Bill Impacts for Participants	2019 Present Value of Lifetime Savings	2019 Present Value of Net Savings Per Participant over the Lifetime of Measures	Present Value of Participant Savings Divided over Lifetime of Measures
Residential Heating	\$ 1,300.05	\$ 1,310.76	\$ 1,247.34	\$ 63.42	\$ 10.71	\$ 52.71	\$ 73.62	\$ 20.91	\$ 2.63
Income Eligible Heating	\$ 957.07	\$ 975.92	\$ 906.36	\$ 47.57	\$ 16.85	\$ 30.71	\$ 274.97	\$ 244.25	\$ 13.57
Small C&I Heating	\$ 1,876.94	\$ 1,893.02	\$ 1,827.99	\$ 65.03	\$ 16.08	\$ 48.95	\$ 187.35	\$ 138.40	\$ 10.65
Large C&I Heating	\$ 258,080.23	\$ 260,837.97	\$ 245,016.44	\$ 15,821.53	\$ 2,757.74	\$ 13,063.79	\$ 26,892.36	\$ 13,828.56	\$ 1,257.14

The revisions in Revised Attachment PUC 1-21 are as follows:

The revised spreadsheet has been updated with new input values from the original Attachment PUC 1-21. These updated values reflect the following three changes that were identified while completing the response to 4888-PUC 1-20:

- 1) Application of the 25% discount rate for A-60 low income electric customers, as approved in RIPUC Docket No. 4770 for effect on September 1, 2018.
- 2) Application of the 25% discount rate for Low Income Residential Heating Rate 13 customers, as approved in RIPUC Docket No. 4770 for effect on September 1, 2018.
- 3) A correction to gas rates utilized in the gas bill impact model for each gas customer segment.

The equations listed in the spreadsheet have not changed. Instead, the inputs have changed.

The application of the 25% discounted rate for low income electric and gas customers does not change the percent that they save on their bills as a result of having an energy efficiency plan. However, there is a decrease in the cumulative dollars savings for low income customers because the baseline from which the savings is applied has decreased as a result of the 25% discount rate.

By applying the 25% discount on the total electric and gas bills for income eligible customers, the calculation on Bates 6 is updated to: 2.49% (\$44.91).

While making this update to the discount rate, a minor correction was identified for gas rates.

Table 7 RI Gas Bill Impact Analysis on Bates 324 should be updated to the following to the right:

Table 7 RI Gas Bill Impact Analysis

Rate Group	Rate Impact (% of 2019 Total Rate)	Average Participant Bill Savings (as a % Change in 2019 Bills)	Average Customer Bill Savings (as a % Change in 2019 Bill)
Residential Heating	4.66%	1.59%	0.90%
Low Income Heating	4.70%	25.08%	5.44%
Small Commercial	3.23%	7.31%	0.03%
Large Commercial	3.38%	5.30%	0.31%

PUC 1-22

Request:

For each pilot, demonstration, or assessment, please provide a table with the name, budget, and savings.

Response:

Please see the tables below:

**Table 1: Commercial and Industrial Pilots, Demonstrations and Assessments**

Ref. No. Bates Pgs. 327 – 332 and 134	Name	Budget (Includes Incentives, PPA, STAT, Marketing, Evaluation)	Savings Estimations Electric	Savings Estimations Gas and Oil
<b>Pilot</b>				
1	Zero Energy Buildings	\$178,500	unknown	N/A
2	Gas DR	\$357,356	N/A	50 DTh/Hr
<b>Demonstrations</b>				
1	Performance Based Procurement (Accelerate Performance)	\$52,693	306 MWh	32,214 Therms
2	Strategic Energy Management (SEM)	\$360,846	1,600 MWh	56,000 Therms
4	Implement Underutilized Energy efficiency Technologies on Mechanical Power Transmission Systems	\$75,932	58 MWh	N/A
11	Heat Pump demonstration	\$270,846	28.74 MWh	174 MMBtus
10	Online Trade Ally Training on Advanced Lighting Systems	This training was listed incorrectly as a demonstration in Table 1. It is an education and training initiative.		
12	Storage Demonstration	The Energy Storage Initiative was listed incorrectly as a demonstration in Table 1 on Bates page 0135. It is not a demonstration.		
<b>Assessments</b>				

The Narragansett Electric Company  
d/b/a National Grid  
RIPUC Docket No. 4888  
In Re: 2019 Energy Efficiency Plan  
Responses to Commission's First Set of Data Requests  
Issued on November 9, 2017

PUC 1-22, page 2

3	Behavior Change through education of small/ medium Plant Personnel	\$50,948	unknown	unknown
5	Secure Light Spec (SLS)	\$82,116	unknown	unknown
6	Lighting as a Service		unknown	unknown
7	One-Fit-Lighting, Manufacturer based Turn-Key Lighting design		unknown	N/A
8	Web-based Performance Lighting PLUS App <sup>1</sup>	Removed from 2019 assessments		
9	Automated Window Shade Systems Assessment	\$120,193	unknown	unknown

**Table 2: Residential Pilots, Demonstrations and Assessments**

Ref. No. Bates Pgs. 77, 332 - 335	Name	Budget (includes, incentives, PPA, STAT, Marketing, Evaluation)	Savings Estimations
	<b>Pilot</b>		
1	Path to Zero Energy Ready	\$215,850	unknown

<sup>1</sup> The Company no longer anticipates launching the Web-based Performance Lighting PLUS App as an assessment in 2019. The Company launched Rhode Island Digital Application Portal (RIDAP) platform on October 16, 2018 and will leverage this application process for Performance Lighting PLUS applications instead of the planned assessment. RIDAP automates the front-end of the application process so customers and vendors do not need to complete paper forms and submit them to National Grid.

PUC 1-23

Request:

Attachment 8 of the EE Settlement includes descriptions of the pilots with tables. Attachment 2, Bates pp. 175-181 includes a description of Retrofit Demonstrations and Assessments. Bates pp. 77-78 describes the Path to Zero Energy Ready as a demonstration.

- a. Please indicate whether there are any other demonstrations or assessments in the C&I programs and if so, provide a description comparable to those in Bates pp. 175-181.
- b. Please provide a description of all other demonstrations or assessments in the Residential Programs comparable to those in Bates pp. 175-181.
- c. For each demonstration, please provide the results of the cost effectiveness of the new technology or solution.
- d. Are the technologies or solutions included in the demonstration cost effective alone or because they are critically linked to another cost-effective program. If the latter, please explain the link.
- e. For each program that includes a demonstration, please provide the cost-effectiveness measure with and without the demonstration.
- f. Are the incremental savings resulting from the demonstration included in the savings targets? Why or why not?
- g. For each assessment, please describe the measure, bundle of measures, or a solution, that can be delivered as part of an existing program where the savings are not known but will be explored as part of the assessment.
- h. If the assessment measure, bundle of measures, or solution is being delivered as part of an existing program, how is that assessment affecting the savings targets for the program?
- i. For each program that includes an assessment, please provide the cost-effectiveness measure with and without the assessment.
- j. If a demonstration and assessment are each designed to test, please explain how they are different from pilots.

Response:

- a. The following are additional demonstrations and assessments in addition to those stated in Bates pages 175-181 and which are included in the C&I programs as part of the 2019 EE Plan.
  - o As part of the C&I New Construction program, the Performance Based Procurement demonstration that was launched in 2018 will continue in 2019. Please see Bates page 144 for a detailed description.
  - o As part of the small business program a Heat Pump demonstration has been proposed. Please see Bates page 185, Attachment 2 for a detailed description.

PUC 1-23, page 2

- b. There are no other residential demonstrations and assessments.
- c. Demonstrations are estimated to be cost effective based on data from other utility programs or technical estimates provided by market research on technologies. A preliminary cost effectiveness screening based on available estimates from other utility programs and market research was conducted for each demonstration. Please see the table below for cost effectiveness for each demonstration.

1. Table 1

<b>Ref. No. Bates Pgs. 327 and 134</b>	<b>Demonstration Name</b>	<b>BC Ratio</b>
1	Performance Based Procurement (Accelerate Performance)	1.9
2	Strategic Energy Management (SEM)	1.4
4	Implement Underutilized Energy efficiency Technologies on Mechanical Power Transmission Systems	6.3
11	Heat Pump demonstration	2.8

Since demonstrations in Rhode Island are still in the early stages of development or in the launch phase, savings and benefits are not verified. The verification process for savings and benefits for demonstrations will be similar to the custom application screening process the Company has in place for C&I programs in which complex custom measures are estimated, studied, and verified.

- d. The demonstrations are estimated to be cost effective alone per the preliminary screening as indicated in response c. above. In their current form, the technologies and solutions included in the demonstrations are critically linked to the program in which they are included. For example, the Strategic Energy Management (SEM) demonstration is a go-to-market strategy for manufacturing and industrial customers to achieve operations and maintenance savings and generate leads for capital improvements that lead to greater energy efficiency. The initiative is naturally complementary to the industrial initiative, which is part of the retrofit program.

PUC 1-23, page 3

In the case of Performance Based Procurement (Accelerate Performance), the demonstration engages with the developer or owner of the project at an early stage of a new construction project and influences the RFP selection of an architect and contractor, where they RFP's for the project are required to address energy goals set by owner/developer as part of the Accelerate Performance offering.

Hence, in all cases, the demonstrations are critically linked to the programs in which they are proposed in.

- e. Below are the cost-effectiveness results for programs with and without demonstrations. The Energy Storage Initiative in the Commercial Connected Solutions program and Online Trade Ally Training on Advanced Lighting Systems are incorrectly listed as a Demonstration in Table 1, Bates page 134 and 135. Please see the Company's response to PUC Data Request 1-22. The Energy Storage Initiative is offered in Commercial Connected Solutions, and the Trade Ally Training on Advanced Lighting Systems is an education and training initiative.

<b>Program</b>	<b>B/C with Demonstrations</b>	<b>B/C without Demonstrations</b>
Commercial New Construction	6.69	6.60
Commercial Retrofit	7.01	6.97
Direct Install	2.79	2.85

- f. The incremental savings for all demonstrations are included in the savings targets. In the case of SEM, the savings assumptions associated with the demonstrations are significant, while in the case of the rest of the demonstrations, the sizes of the demonstrations are small and the savings projected are negligible.

Please see the Company's response to PUC Data Request 1-22 for estimated savings from each demonstration. The incremental savings are included in the savings targets because they are critically linked to the program. The savings from the demonstrations are cost-effective and are necessary to achieve the annual and three-year targets. The Company already has a process for verifying savings on complicated, and sometimes new, measures through the custom path, and the demonstrations will use this process for savings verification. Please see the Retrofit Logic model on Bates page 0197 for illustration of existing process).

PUC 1-23, page 4

g.

- Behavior change through education of small/medium plant personnel is a solution under which customers in this segment, who typically may not be able to afford independent compressed air system specialists, will be provided access to independent compressed air systems specialists in order to facilitate an assessments of compressed air systems. Training materials will also be provided as part of this solution to plant personnel to conduct site assessments and collect data that can lead to energy efficiency measures. The goal is to drive energy efficiencies improvements related to compressed air systems and lead to participation in the retrofit program that promotes energy efficiency with compressed air systems along with other energy efficiency improvements in such facilities. Savings from this solution need to be determined.
- Secure Lighting Spec is a solution that involves a mutual agreement with Lighting Manufacturer Representatives (LMR's) to engineer and deliver lighting and controls that exceed energy code or Industry Standard Practice by 25%. This solution allows the company to incorporate energy efficiency incentives early in project quotes and, thereby, reduces the hurdle of initial costs associated with advanced lighting engineering and lighting systems costs. Engaging with LMR's will lead to higher participation in our retrofit programs. Savings garnered from a mutual agreement with LMR's for projects and by engaging with customers early in the design process need to be determined.
- Lighting as a Service is a new business model that would be offered under the umbrella of the Company's retrofit program. This service will be offered to customers who are interested in the best in class lighting equipment and ongoing commissioning and system optimization through a subscription-based model. The offering under this business model would leverage the Company's existing best in class lighting, controls, and optimization measures offered as part of the Company's retrofit program. Interest from customers and savings associated with this business model need to be determined.
- One-Fit-Lighting Manufacturer based Turn Key Lighting assessment would utilize lighting manufacturers to design all the lighting for a project based on modelling/calculations and include lighting controls. This initiative is a turn-key solution for customers and installers and will be based on Performance Lighting PLUS, which is part of the retrofit program. The concept of having manufacturers design capabilities leveraged for projects such that they result in energy savings needs to be tested and savings need to be determined.

PUC 1-23, page 5

- Automated Window Shade Assessment will determine whether automated window shades along with advanced lighting controls will provide increased energy savings from the thermal performance of the building. Savings from these bundle of measure, window shade along with advanced daylighting controls need to be determined for this assessment. This bundle of measures would then become part of the lighting solutions in the retrofit program.
- h. The assessments will be small in scale, and savings are unknown from these assessments. If any savings are gained, the Company anticipates that the savings will be small due to the scale of the assessment. For example, Behavior Change through education of small/medium Plant Personnel looks to engage with three customer sites for this assessment. If they are cost effective, savings from these assessments will be considered as part of the program. The assessments are part of innovative ways to keep participants active in energy savings and attract new customers. While not explicit in planning, the C&I sector needs to increase participant in order to reach the savings targets, and this is one way of doing it, though the anticipated savings are unknown and likely very small.
- i. Below are the cost-effectiveness results for each program that contains an assessment with and without the assessment. Since the energy savings and benefits for assessments are not yet known, they are not quantified in the benefit/cost model. Therefore, the benefit/cost ratio without the assessments only removes the assessment budget.

<b>Program</b>	<b>B/C with Assessment</b>	<b>B/C without Assessment</b>
Commercial Retrofit	7.01	7.07

- j. As defined in the Docket 4600-A Guidance Document: “A pilot is a small scale, targeted program that is limited in scope, time, and spending and is designed to test the feasibility of a future program or rate design. It is incumbent upon the proponent of a pilot to define these limits in a proposal for PUC review. Ideally, a pilot can provide net benefits and achieve goals, but the primary design and value of a pilot is to test rather than to achieve.”<sup>1</sup>

The Company clarified and evolved the definitions of demonstration and assessment to highlight new strategies and technologies that are necessary to continue a high level of

---

<sup>1</sup> Docket No. 4600-A PUC Guidance Document, October 27, 2017, Section V. Pilots.

PUC 1-23, page 6

customer service and energy savings within cost-effective programs. This classification was also done to differentiate demonstrations and assessments (which are smaller in scale and embedded in programs) from the PUC's definition of pilots, which is to test a stand-alone program or rate design.

Pilots differ from demonstrations and assessments in the following ways.

1. Pilots are defined as a targeted program. For example, in 2017 and 2018, Demand Response was a pilot. In 2019, Demand Response will be a new program. This is not the case for demonstrations and assessments. Demonstrations are a solution, a technology or a go-to-market strategy, and not a standalone program. They are critically linked to an existing program. Similarly, in the case of assessments, they are a measure or a bundle of measures critically linked to an existing program and would not be a standalone program.
2. The primary purpose of a pilot is to test the feasibility of a new program or rate design.
3. Any savings that come from a pilot would not be counted towards the Company's Annual savings goals.

PUC 1-24

Request:

What are the key differences between pilots, demonstrations, and assessments?

Response:

As detailed on Bates page 326 of the 2019 Energy Efficiency Program Plan (EEPP) filing, the following are the definitions for pilots, demonstrations, and assessments.

Pilot: As defined in the Docket 4600-A Guidance Document, "A pilot is a small scale, targeted program that is limited in scope, time, and spending and is designed to test the feasibility of a future program or rate design. It is incumbent upon the proponent of a pilot to define these limits in a proposal for PUC review. Ideally, a pilot can provide net benefits and achieve goals, but the primary design and value of a pilot is to test rather than to achieve."<sup>1</sup>

Demonstration: A demonstration tests a new technology or solution that is delivered as part of an existing program where a technical assessment has estimated the savings and determined that the measure is likely to be cost effective. An example of a demonstration was beneficial electrification of heat in the HVAC program in 2018.

Assessment: An assessment tests a measure, a bundle of measures, or a solution, that can be delivered as part of existing program where the savings are not known but will be explored as part of the assessment. An example of an assessment is automated window shades in the C&I retrofit program.

The Company clarified and evolved the definitions of demonstration and assessment to highlight new strategies and technologies that are necessary to continue a high level of customer service and energy savings within cost-effective programs. This classification was also done to differentiate demonstrations and assessments, which are smaller in scale and embedded in programs, from the PUC definition of pilots, which is to test a stand-alone program or rate design.

---

<sup>1</sup> Docket No. 4600-A PUC Guidance Document, October 27, 2017. Section V. Pilots.

PUC 1-24, page 2

Demonstrations and assessments are similar in the following ways:

1. Demonstrations and assessments are delivered under an established cost-effective program, and are therefore critically linked.
2. Demonstrations and assessments cannot be delivered as stand-alone programs as they are critically linked to the program.

Demonstrations and assessments differ in the following way:

1. The savings from demonstrations can be estimated, they are included in the planned annual savings goals, and they are likely to be cost effective based on the Company's preliminary screening and/or deployment by other utilities or vendors. Whereas, savings for assessments are not known and hence the savings are not included in the planned savings goals.

Pilots differ from demonstrations and assessments in the following ways:

1. Pilots are defined as a targeted program. For example, in 2017 and 2018, Demand Response was a pilot. In 2019, Demand Response will be a new program. This is not the case for demonstrations and assessments. Demonstrations are a solution, a technology or a go-to-market strategy and not a standalone program, but critically linked to an existing program. Similarly, in the case of assessments, they are a measure or a bundle of measures critically linked to an existing program and would not be a standalone program.
2. The primary purpose of a pilot is to test the feasibility of a new program or rate design.
3. Any savings that were to come from a pilot would not be counted towards the Company's Annual savings goals.

PUC 1-24, page 3

The chart below assists in quickly determining the differences between pilots, demonstrations, and assessments.

	<b>Pilot</b>	<b>Assessment</b>	<b>Demonstration</b>
<b>Net benefits?</b>	Unknown	Likely	Likely
<b>Savings claimed to meet goals/shareholder incentive?</b>	No	Yes	Yes
<b>Cost effective?</b>	Unknown (Test)	Unknown (Test)	Likely (Confirm)
<b>May stand on its own vs delivered under an established program?</b>	May stand on its own	Established program	Established program

Luly E. Massaro, Commission Clerk  
Docket 4888 – 2019 Energy Efficiency Plan  
October 15, 2018  
Page 2 of 2