



STATE OF RHODE ISLAND  
**ENERGY EFFICIENCY &  
RESOURCE MANAGEMENT COUNCIL**

## **MEETING MINUTES**

**Thursday, August 17, 2017 | 3:30 - 5:30 PM**  
Conference Room B, 2<sup>nd</sup> Floor, Department of Administration, Providence, RI

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**Members in Attendance:** Chris Powell, Michael McAteer, Tom Magliocchetti, Karen Verrengia, Joe Cirillo, Carol Grant, Shigeru Osada, Roberta Fagan, Anthony Hubbard, Bob Bacon, Diane Williamson.

**Others Present:** Mike Guerard, Nick Ucci, Mark Kravatz, Becca Trietch, Carrie Gill, Danny Musher, Chris Kearns, Jeff Loiter, Kate Desrochers, Lindsay Foley, Rachel Henschel, Courtney Lane, Sean Carney.

**Public Comments Provided By:** Doug Gablinske, Brigid Ryan, Kat Burnham, Erika Niedowski, Seth Handy

### **1. Call to Order**

Chairman Chris Powell called the meeting to order at 3:35PM.

### **2. Approval of Meeting Minutes**

Chairman Chris Powell requested a motion to approve the minutes for May. Shigeru Osada requested that the April meeting minutes, although they had been approved previously, be updated to indicate that he was present at the meeting. OER will adjust the April meeting minutes accordingly. Regarding the May meeting minutes, Shigeru Osada stated that the minutes did not include his comment about the EERMC's Annual Report. Specifically, he requested to modify the meeting minutes to reflect his opinion that energy usage trends be included in the EERMC Annual Report. Chairman Chris Powell then requested a motion to approve May's Meeting minutes with the modification from Shigeru Osada. Joe Cirillo made a motion, and Anthony Hubbard seconded it. All approved.

Chairman Chris Powell requested a motion to approve July's meeting minutes. Shigeru Osada asked the Council to modify the minutes to reflect his comments about it being unnecessary to approve the retreat minutes from June's meeting, his opinion that the budget and SBC rate indicated in the Three-Year Plan for 2020 be lowered, and his comment that there are still several meeting minutes missing from the EERMC website. Chris Powell requested a motion to approve July's meeting minutes with the modifications requested by Shigeru Osada. Tom Magliocchetti made a motion, and Shigeru Osada seconded it. All approved.

### **3. Executive Director Report**

#### *a) General Update*

Commissioner Carol Grant reported that at the time of the last Council meeting the State had not yet passed a budget. Since then, the legislature did pass a State budget. The budget has two items relevant to energy efficiency: one is addressed in the Three-Year Plan, and is the \$12.5 Million reallocation of energy efficiency dollars to General Revenue in 2018. The other is that an energy efficiency program budget cap was included in the State's budget article. The cap language in the State's budget article is different from the cap language that was put forth by the House and Senate in separate pieces of proposed legislation. Because of the timing, and difference in language, it was prudent that National Grid did not try to reflect the cap in the Three-Year Plan, but will instead address the budget cap in the 2018 Annual Plan. Shigeru Osada then asked if current legislation is now reflected in the Three-Year Plan. Commissioner Carol Grant explained that the Three-Year Plan reflects the \$12.5 Million reallocation to General Revenue, but only acknowledges the potential for budget cap in the Plan's narrative. National Grid did specifically include language pointing out to the public, the Commission, and the Council, that it will address the budget cap issue in the 2018 Annual Plan.

### **4. Chairperson Report**

Chairman Chris Powell reported that much of today's meeting will be focused on the 2018-2020 Three-Year Plan, written by National Grid, and that the Council will be voting on the approval of this plan tonight. A new structure for the meeting will also be tested: public comments will be made after the presentations on the Three-Year Plan from National Grid and the Consultant team, but prior to the Council voting on the final draft of the Three-Year Plan. Chairman Chris Powell also reported that even though the agenda says we will be voting on the cost effectiveness report, the PUC has granted the EERMC a short filling extension, to allow us to review the final version at our September meeting. The Council will also be voting on a New Chief Purchasing Officer and that Officer's authority. The Communications Working Group will also give an update on the website, and the education RFP, as well as the Final Consultant Services RFP. Lastly, although the Council would normally be reviewing National Grid's Quarter 2 Program Report, due to a packed agenda, this item has been postponed until the September meeting. He stated that the Quarter 2 report is included in today's packets, to please go ahead and review it ahead of time so that we can discuss it during September's meeting.

Commissioner Carol Grant introduced Carrie Gill, the new Programming Services Officer for OER, who is working closely with Becca.

Chairman Chris Powell also informed the Council that the Ethics Commission stated that Karen Verrengia must recuse herself from voting on the Three-Year Plan. Her ethics ruling is still being reviewed, but for now she will remain a member of the Council and simply recuse herself from certain votes.

## **5. National Grid Plans**

### *a) Summary of Changes to Three-Year Plan*

Mike Guerard provided an overview of the changes made to the Three-Year Plan from the first draft reviewed by the Council. He also summarized what topics the Three-Year Plan is required to cover.

As Mike Guerard was about to go over the EERMC Consultant team memos on the Three-Year Plan, Shigeru Osada and Karen Verrengia indicated that the meeting materials should be sent out at least one week prior to the meeting, and not the day of. By sending the meeting materials the day of, it does not allow enough time for the members of the Council to go over everything prior to starting the meeting. Becca Trietch and Mike Guerard stated that going forward the team will try to make sure materials are sent out further in advance of the meetings.

Mike Guerard then went over the memos put together by the EERMC Consultant team (see attached). Shigeru Osada voiced his concerns about "Increasing 25,000 MWh just simply to match up with 2019 Projected savings in the Three-Year Target plan as "innovation" Is just guessing, with no logical support. Further, using the exact same cost of data of conventional saving in this "innovation" measure is also not logical or supportable." Shigeru Osada wanted to consider changing the MWh amount, stating last year's MW amount was more reasonable than the one being proposed. He then asked why the Consultant Team was comfortable with such a high MWh goal. Mike Guerard explained that this number was included in the Targets document that the Consultant Team developed, was approved by the Council, and then approved by the PUC. In the evolving potential section of the Targets document, the Consultant Team qualified multiple sources for additional savings. This is where the MWh goal originated. The Consultant team also submitted further information on qualitative potential that they believe could yield further savings. Mike Guerard explained that the Standards directed them on behalf of the EERMC to develop/propose strategies to achieve the energy saving targets that are proposed by the EERMC and approved by the PUC for that Three-Year period. The Standards direct the Consultant Team on behalf of the EERMC to draw a plan that meets the Targets. Chairman Chris Powell stated that these Targets were what the Council had voted and approved.

Shigeru Osada then asked about comments that were made to National Grid on behalf of the EERMC members by the Consultant Team during Collaborative discussions about cost-effectiveness, savings targets and budget. He stated that if any comments were to be made on behalf of the EERMC, there must be a letter of agreement, or a notification, to which he states he was never aware of either. Chairman Chris Powell answered Shigeru Osada question by reading a memo letter from the EERMC attorney, Marisa Desautel, that presented findings that the Consultant Team was operating on Council direction since their actions were in accordance with the scope of work approved by the EERMC in January. Mike Guerard reported that the positions that the Consultant Team took were

in full alignment with what the Least Cost Procurement Standards, approved by the Council and PUC, set for the outcomes expected of the Three-Year Plan.

Chairman Chris Powell also added that the legislation is clear, the EERMC is meant to go after all cost-effective energy efficiency without any limits/restrictions, other than possibly a cap that would be put on the program by the Legislature if they chose to do so.

Diane Williamson and Shigeru Osada both asked for further information about the cost ratios presented. Jeff Loiter, in response, provided background on cost-effectiveness variables, including details on the various benefit categories that contribute to the cost-effectiveness ratio.

#### *b) Review of Final Draft of Three-Year Plan*

Rachel Henschel from National Grid gave an overview of the Three-Year Energy Efficiency Plan. Afterwards Courtney Lane and Lindsay Foley presented on the System Reliability Procurement Plan. Betsy Stubblefield Loucks could not be present at today's meeting, so she asked Chairman Chris Powell to read her comments about National Grid's Three-Year Plan final draft (see attached). Diane Williamson asked if the Council could approve and vote on different sections of the Three-Year plan, or if their vote is for everything as is. Chairman Chris Powell answered that, the Council can agree to change, or amend, and approve as such. Shigeru Osada also asked National Grid about their level of confidence in regards to the innovation line item included in the Three-Year Plan. Rachel Henschel answered that they were still very uncertain about it. However, National Grid is constantly looking for new, innovative ways to achieve more energy savings, and the Company also got the assurances from the settling parties that the innovation line item will be adjusted as needed when more information is available during the development of annual plans.

#### *c) Public Comment on the Three-Year Plan*

Doug Gablinske from TEC-RI stated that he believes that the targets are too high. That in order to keep reaching for innovative methods such targets need to be reasonably reduced. In regards to the budget, he believes it is a big mistake to assume that legislation will pass in September that will change the budget cap. He also stated that there needed to be more time between the 2<sup>nd</sup> and 3<sup>rd</sup> drafts of the Three-Year Plan to allow for more stakeholder engagement and consideration. He believes the process should have been started earlier. Lastly, Doug stated that he has doubts about the energy saving projections and the ability to achieve the innovation savings included in the Three-Year Plan.

Brigid Ryan from RI Housing shared that she appreciated the collaborative process used to develop the Three-Year Plan. She also appreciates National Grid's efforts to enhance their multi-family and residential energy efficiency programs. And lastly, as a participant in the Collaborative, she felt that although things moved quickly, she was kept informed of what was happening.

Kat Burnham from People's Power and Light (PP&L) stated that she believes the \$12.5 million reallocation of funds to General Revenue is not good public policy and is extremely unfair to Rhode Island ratepayers who pay for these programs. She wishes the consequences of the reallocation of funds were put on page 1, instead of page 69, in the Three-Year Plan in order to educate stakeholders and prevent such re-allocations in the future. She also stated that PP&L will continue to advocate for more energy efficiency savings with more emphasis on lifetime savings in addition to annual energy saving metrics in National Grid's energy efficiency plans. She believes the programs are not yet capturing all the cost-effective energy efficiency opportunities in Rhode Island, but applauds the inclusion of the innovation line item in the Three-Year Plan as a means of ensuring continued efforts to find more cost-effective energy efficiency.

Erika Niedowski from Acadia Center stated that, while this plan does not meet the energy savings targets for all three years, it does capture significantly more savings than initially identified. The Acadia Center lends its support for the 2018-2020 Three-Year Plan, including the innovation line item. However, it strongly opposes the \$12.5 million cut, and the cap on the 2018 Budget. Moreover, Erika mentioned Acadia Center's support for continued

integration of energy efficiency efforts with the on-going Power Sector Transformation work and highlighted the fact that Rhode Island's economy and environment are better off due to the State's energy efficiency programs.

Seth Handy from Handy Law strongly supports the efforts outlined in the Three-Year Plan to support strategic electrification and thermal efficiency. He believes both of these topics are an extremely important part of our State's energy plan. He added he would like to see more detail in the Three-Year Plan about integrating energy efficiency initiatives with renewable energy programs. He provided written comments for the Council as well (see attached).

*d) Vote to Approve the Final Draft of the Three-Year Plan*

Karen Verrengia shared that even though she cannot vote on the Three-Year Plan, she fully supports it, and would vote yes to approve it. Joe Cirillo commented that the State needs to adopt the latest International Codes and set money aside for trainings on codes in order to increase building energy efficiency. Karen Verrengia stated that trainings are indeed available to Rhode Island code officials. Joe Cirillo explained that it's not just about trainings and implementation, it is about the codes themselves and adopting the most current versions. Michael McAteer, in response, stated that the Three-Year Plan does address the needs for advancing building codes.

Shigeru Osada reiterated his point that the budget and rate are exceeding what he believes to be acceptable limits. He stated that the renewable energy and energy efficiency charges on a bill equate to about 40% of the total distribution charge. He believes the increase in the energy efficiency charge described in the Three-Year Plan is too much. Therefore, he does not support the Three-Year Plan.

Chairman Chris Powell requested a motion to approve the Final Draft of the Three-Year Plan. Joe Cirillo made a motion, and Bob Bacon seconded it. All but Shigeru Osada approved. Karen Verrengia had recused herself from the vote.

*e) Vote to Approve Cost-Effectiveness Report*

Jeff Loiter and Mike Guerard went over the draft Cost-Effectiveness report prepared by the EERMC Consultant Team. The draft report shows that the Three-Year Plan, as written, is indeed cost effective. Mike Guerard also explained that the PUC extended the deadline for the EERMC to submit the final cost-effectiveness report, which will allow the Council to review and vote on the final report at the EERMC's September meeting.

*f) Update on 2018 Annual Plan*

Courtney Lane shared that the incorporation of the budget cut will take some work from stakeholders to determine where program offerings should be cut. This will be addressed, if a budget cap remains in place.

The first draft of National Grid's 2018 Annual Plan will be shared by September 14<sup>th</sup>, and they will present on it at the EERMC meeting on September 21<sup>st</sup>. She added that if the members have comments about the first draft to please submit them to National Grid by September 22<sup>nd</sup>. On October 12<sup>th</sup>, the final draft will be distributed and the Council will vote on approving the Plan on October 19<sup>th</sup>. From there the Plan will be sent to the parties who are willing to sign onto it, and National Grid will submit it to the PUC by November 1<sup>st</sup>.

## **6. Council Business**

*a) Vote on EERMC Chief Purchasing Officer & Authority*

Chairman Chris Powell read the email from attorney Marisa Desautel that outlined the job description of the Chief Purchasing Officer (see attached). The email indicated that Commissioner Carol Grant could act as the Chief Purchasing Officer for the EERMC.

Shigeru Osada asked who would be part of a technical review team for RFP submission reviews. In addition, he asked about the timing for the upcoming consultant services RFP. Chairman Chris Powell answered that for the upcoming Consultant Services RFP submission review, the Council will be asking for three volunteers to serve on an

evaluation team. These reviewers will be determined at the September meeting and Becca Trietch will speak more about the Consultant Services RFP later in today's meeting.

Chairman Chris Powell requested a motion to approve Commissioner Carol Grant as the EERMC Chief Purchasing Officer with the authorities described in Marisa Desautel's email. Diane Williamson made a motion, Karen Verrengia seconded it. All approved.

#### *b) Communications Working Group Update*

Becca Trietch reported that the website is still in process. The Communications Working Group submitted its comments to adjust a few items, and once these changes are implemented, they will show and ask the Council for their feedback. As of right now, the website is expected to launch in late September.

Becca Trietch also shared that the Education RFP deadline had been extended to September 28<sup>th</sup>, since the University of Rhode Island's Outreach Center had reached out saying they did not believe the original deadline provided them enough time to submit a proposal.

#### *c) EERMC Q2 Budget Update*

Becca Trietch went over the 2017 budget to show the Council what has or has not been spent to date. Overall, the EERMC has spent about 43% of its budget, which is less than expected. However, the contract for Dunsky is written so that they will receive the majority of their funds once they've completed about 90% of the work. Therefore, about \$90,000 is expected to be withdrawn from the account in Quarter 4 for Dunsky. In addition, Becca Trietch also reported that she just started receiving invoices for the Stretch Code Development work. Therefore, she believes the Council is on-track in terms of spending for the year.

#### *d) Final Consultant Services RFP Review*

Last meeting, Becca Trietch had asked the Council for feedback on the Scope of work for the Consultant Services RFP. No comments were received, so she took the scope of work as-is and put it into the Council-approved RFP template. The only changes made were the inclusion of submission deadline dates to the front page of the RFP. Becca Trietch requested that the Council review these dates now to make sure it is good timing for the Council. October 5<sup>th</sup> is the deadline for submissions which provides over five weeks for any interested party to pull together a proposal. The goal will be to review the submissions with an evaluation team and present a recommendation to the full council at the October full council meeting. This should still leave enough time to get a contract in place by December.

Chairman Chris Powell asked about the scoring criteria in the RFP. Becca Trietch explained that this is a standard division of points often used in RFPs issued from the RI Division of Purchasing. She explained that the Council can modify it, but they would have to vote on it in order to do so. The scoring criteria, as shown, was approved by the Council when they approved the RFP template. Becca Trietch also explained that each of the scoring categories has a description within the RFP. Chairman Chris Powell stated that an evaluation team will work with Commissioner Carol Grant on the evaluation process. He informed the Council that by next EERMC meeting in September, they must choose members for the evaluation team. Chairman Chris Powell also mentioned that the Scope of Work is a Three-Year contract, that has to be renewed at the end of each year.

Commissioner Carol Grant stated that if anyone would like to join the evaluation team to let her, or Becca Trietch, know right away instead of waiting until September's meeting.

Michael McAteer took a moment to thank everyone involved in the Three-Year Plan, and thanked the Council for approving the Three-Year Plan.

## **7. Other Public Comment**

No public comment was made.

## **8. Adjournment**

Chairman Chris Powell requested a motion to adjourn the meeting. Tom Magliocchetti made a motion and Joe Cirillo seconded it. All approved. The meeting was adjourned at 5:50PM.

## **Meeting Materials**



STATE OF RHODE ISLAND  
**ENERGY EFFICIENCY &  
RESOURCE MANAGEMENT COUNCIL**

## **MEETING AGENDA**

**Thursday, August 17, 2017 | 3:30 - 5:30 PM**

Conference Room B, 2nd Floor, Department of Administration, Providence, RI

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**1. Call to Order**

**2. Approval of Meeting Minutes**

**3. Executive Director Report (5 min)**

*a) General Update*

**4. Chairperson Report (5 min)**

*a) General Update*

1. National Grid Quarter 2 Energy Efficiency Program Update

**5. National Grid Plans (50-60 min)**

*a) Summary of Changes to Three-Year Plan (10 min)*

EERMC Consultant Team to provide context for and thoughts regarding the final draft of the 2018-2020 Energy Efficiency and System Reliability Procurement Plan

*b) Review of Final Draft of Three-Year Plan (10 min)*

National Grid to provide an overview of the final draft of the 2018-2020 Energy Efficiency and System Reliability Procurement Plan

*c) Public Comment on the Three-Year Plan*

Two (2) minute limit per person and/or affiliation

*d) Vote to Approve the Final Draft of the Three-Year Plan (15 min)*

The Council to discuss key topics within the draft Three-Year Plan and to provide general feedback to National Grid. The Council will vote on approving the Final draft of the Three-Year Plan.

*e) Vote to Approve Cost-Effectiveness Report (10 min)*

EERMC Consultant Team to present a cost effectiveness report on the Three-Year Plan. The council will discuss and vote on approving this report for submission to the PUC.

*f) Update on 2018 Annual Plan (5 min)*

National Grid to present key topics and deadlines for the 2018 Annual Plan

**6. Council Business (30 min)**

*a) Vote on EERMC Chief Purchasing Officer & Authority (10 min)*

The Council to appoint a Chief Purchasing Officer and to specify this Officer's authority

*b) Communications Working Group Update (5 min)*



The Communications Working Group will update the Council on recent efforts and present any recommendations: website update and education RFP

*c) EERMC Q2 Budget Update (5 min)*

OER will update the Council on the status of the 2017 budget

*d) Final Consultant Services RFP Review (10 min)*

The Council to review the final Consultant Services RFP and provide feedback before the RFP is issued.

**7. Other Public Comment**

**8. Adjournment**



STATE OF RHODE ISLAND  
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*Vote to Approve the Final Draft of the Three-Year Plan*

- Key Discussion Question(s):
  - Does the Plan sufficiently address the concerns of the stakeholder groups represented by Council members?
  - Does the Plan meet the Targets and follow the Standards that were recommended by the EERMC and approved by the PUC?
  - Does the Plan identify strategies and an approach to program planning and implementation to secure all cost-effective energy efficiency resources that are lower than the cost of supply? I.e. does the Plan fulfill the requirements of Least Cost Procurement? (The Standards include the following language: “Least-cost procurement, which shall include procurement of energy efficiency and energy conservation measures that are prudent and reliable and when such measures are lower cost than acquisition of additional supply, including supply for periods of high demand.”)
  - Are there any adjustments to the Plan that should be made to better fulfill Least Cost Procurement requirements?
  - Will the PUC approve the Plan? (“The commission shall issue an order approving all energy efficiency measures that are cost effective and lower cost than acquisition of additional supply, ... 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...”)
- **Recommended vote language:**
  1. To approve all sections of the Three-Year Plan as currently written, including the changes presented at the meeting by National Grid to the SRP section of the Plan.
  2. To approve all sections of the Three-Year Plan as currently written, contingent on the following changes \_\_\_\_\_.

*Vote to Approve Cost-Effectiveness Report*

- Key Discussion Question(s):
  - Is the Three-Year Plan cost-effective?
  - Does the memo accurately reflect whether the Plan is cost-effective?
  - Does the report include the system reliability report’s proposed activities?
  - Are there any changes or edits that should be made to the memo to better inform the PUC?
- **Recommended vote language:**
  1. to postpone the vote on the report to the September 21, 2017 full council meeting. To meet the PUC extended deadline of September 22, 2017.

*Vote on EERMC Chief Purchasing Officer & Authority*

- Key Discussion Question(s):
  - Who can best act as an objective authority on Purchasing Processes?
  - Who is best positioned to ensure continued compliance with State Purchasing laws?
  - Are the powers described in the recommended vote language, reasonable and clear?

- **Recommended vote language:** Pursuant to Sections II and IIIA and IIIB of the EERMC Procurement Guidance Document, I make a motion to approve \_\_\_\_\_*NAME/the EERMC Executive Director*\_\_\_\_\_ as Chief Purchasing Officer. The duties of the Chief Purchasing Officer shall include designation of a technical review team to review Request for Proposals responses.

*Final Consultant Services RFP Review*

- Key Discussion Question(s):
  - Are all consultant services needed by the Council described in the RFP?
  - Are there any changes that should be made to the scope of work to provide clarity for respondents?
  - Is the Council comfortable with the proposed timeline for submissions?
  - Do Council members have recommendations on how to best share/distribute this RFP?



STATE OF RHODE ISLAND  
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## **MEETING MINUTES**

**Thursday, May 18<sup>th</sup> 2017 | 3:30 - 5:30 PM**

Conference Room A, 2<sup>nd</sup> Floor, Department of Administration, Providence, RI

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**Members in Attendance:** Abigail Anthony, Chris Powell, Michael McAteer, Tom Magliocchetti, Karen Verrengia, Joe Cirillo, Carol Grant, Betsy Stubblefield Loucks, Marisa Desautel, Shigeru Osada, Scudder Parker and Anthony Hubbard.

**Others Present:** Mike Guerard, Nick Ucci, Savannah Harik, Mark Kravatz, Becca Trietch, Sara Canabarro, Rachel Henschel, Ben Rivers, Courtney Lane, Matt Ray, Ilene Mason, Alex Hill, Sam Nutter, Brigid Ryan, Hannah Abelow and Brian Pine.

### **1. Call to Order**

Chairman Chris Powell called the meeting to order at 3:31pm.

### **2. Approval of Meeting Minutes**

Chairman Chris Powell stated that because we did not have a quorum, we could not vote on the approval of the meeting minutes for April.

### **3. Executive Director Report**

#### *a) General Update*

Commissioner Carol Grant reported that the Financing Technical Session went well earlier today, and the PUC, who had asked for this technical session, was extremely thankful for it. Commissioner Carol Grant also reported that OER has been working on a draft RGGI Allocation Plan Proposal to spend \$3.4m dollars in four areas: the Renewable Energy Fund; to support DEM's Agricultural Energy Grant Program; to support DEM's Trees Program; and lastly, to Pilot a Program that's designed to provide energy savings through zero energy buildings for Low- to- Moderate Income customers. There will be a Public Hearing on the RGGI Plan on June 1<sup>st</sup> 2017. More information about the RGGI Proposal can be found on OER's website.

Because we did not have a quorum earlier, Chairman Chris Powell now requested a motion to approve the minutes for April. Shigeru Osada made a motion, and Betsy Loucks seconded it. All approved.

### **4. Executive Committee Report**

#### *a) General Update*

Chairman Chris Powell reported that there was no Executive Committee meeting earlier this month due to a light agenda. He then asked Abigail Anthony to give a brief update on how the Financing Technical Session went earlier today. Abigail Anthony reported that the purpose of the technical session was to give the Commission an overview of all the Financing Options that are available for Energy Efficiency Programs in conjunction with the programs we have in pace now, and to discuss what trends and issues we will be facing in the next 2018-2020 efficiency plans.

#### *b) Purchasing Process Update*

Marisa Desautel shared a Memorandum about the Consultant Contracts and Procurement requirements for the EERMC. It was concluded that the EERMC, when purchasing services or goods, should follow the State's procurement requirements under the State Purchases Act.

### **5. Council Business**

#### *a) Vote on EERMC Annual Plan*

Becca Trietch reviewed the Annual Report before requesting the Council to vote to approve it. After some discussion amongst the members, Chairman Chris Powell requested a motion to approve the report. Betsy Loucks made a motion, and Karen Verrengia seconded it. All approved.

*b) Communications Working Group Update*

Becca Trietch reported that BasicsGroup has been selected to design the EERMC website, and the Communications Working Group will discuss the main topics and high level pages that need to be highlighted on the website. Overall, progress is being made, and hopefully the site will be live by mid-Summer. Becca Trietch shared with the council a scope of work for the Energy Education RFP. She asked for the Council members to please review it and share any feedback, thoughts and/or recommendations via email.

*c) Consultant Team Updates*

Scudder Parker concluded that, the Consultant Team recommends that the EERMC continue to monitor the progress of the Power Sector Transformation Initiative to see how it can advance the principles of Least Cost Procurement and System Reliability in Rhode Island. While the Consultant Team's Scope of work only assumed active participation through the completion of Docket #4600 proceedings, the Consultant team is within budget and scope to continue monitoring, at a high level, any ensuing developments from the Power Sector Transformation Initiative and will continue to provide periodic updates to the EERMC on key issues and developments.

Mark Kravatz reported that the EERMC Retreat is scheduled for June 15<sup>th</sup>, at 400 Smith Street, Providence. The EERMC Consultant team is working with OER and National Grid to build out the topics for the retreat. Mark Kravatz also stated that after reviewing the Teaching and Learning Survey results, the Consultant team thought it would be best to create a Council handbook that will cover all the topics discussed on the survey, as well as create webinars available to the members and the public. The launch date for the Webinars and the Handbook will be in September.

## **6. National Grid Updates**

*a) National Grid Presentation*

Courtney Lane went over the 2016 Electric and Gas Sector Results, Ben Rivers followed by presenting the 2016 Jobs Study report, and lastly Matt Ray went over the 2017 First Quarter Results for the Electric and Gas Sectors.

## **7. Special topics Presentation**

*a) Financing*

Alex Hill gave a presentation on Dunsky's financing work and an overview of general financing topics, focusing on two main points: Part 1, Energy Efficiency Financing Overview and Part 2, Expanding Financing Coverage in Rhode Island.

*b) On Bill Repayment*

The National Grid team will present on OBR offerings.

Ben Rivers, Rachel Henschel and Ilene Mason from National Grid, gave a presentation about, the 3 Year Plan Financing Vision, and The Residential Heat Loan and the different ways National Grid is working to enhance financing options.

## **8. Public Comment**

No public comments were made.

## **9. Adjournment**

Chairman Chris Powell requested a motion to adjourn the meeting. Abigail made a motion and Karen Verrengia seconded it. All approved. The meeting was adjourned at 5:08pm.



STATE OF RHODE ISLAND  
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RESOURCE MANAGEMENT COUNCIL**

## **MEETING MINUTES**

**Thursday, July 20, 2017 | 3:30 - 5:30 PM**

Conference Room A, 2<sup>nd</sup> Floor, Department of Administration, Providence, RI

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**Members in Attendance:** Chris Powell, Michael McAteer, Tom Magliocchetti, Karen Verrengia, Joe Cirillo, Carol Grant, Betsy Stubblefield Loucks, Shigeru Osada, Roberta Fagan and Joe Garlick.

**Others Present:** Mike Guerard, Nick Ucci, Savannah Harik, Mark Kravatz, Becca Trietch, Rachel Henschel, Carrie Gill, Abigail Anthony

### **1. Call to Order**

Chairman Chris Powell called the meeting to order at 3:32PM.

### **2. Approval of Meeting Minutes**

Chairman Chris Powell requested motion to approve the minutes for June, Betsy made a motion, and Karen seconded it. All approved. Becca Trietch will provide May's meeting minutes at the next Full Council Meeting in August.

### **3. Executive Director Report**

#### *a) General Update*

Commissioner Carol Grant shared that the State is having their first demand response event today from 2:00PM-5:00PM. Employees have been asked to reduce their energy consumption during this time.

Commissioner Carol Grant also shared that the 2018 Budget as presented by the House, included a diversion of \$12.5 million from energy efficiency funds, into general revenue. As of right now, the budget proposal has not passed. The General Assembly left without a final approval on a State Budget although they may call a special session at any time. Therefore, Commissioner Carol Grant stated that nothing should be changed in the current energy efficiency programs, but we should all be ready to plan effectively for the 2018 year.

### **4. Chairperson Report**

#### *a) General Update*

Chairman Chris Powell shared that Abigail Anthony has accepted a job at the Public Utilities Commission, so she is resigning from the Council. The Executive Committee Meetings are now on hold, until the Governor's Office appoints a new Vice-Chair for the Council.

Chairman Chris Powell also introduced Joe Garlick as the newest member of the Council. He will be representing small non-profits. Joe Garlick introduced himself and shared his background information with the members.

### **5. Council Business**

#### *a) Vote on EERMC Procurement Procedure Document & RFP Template*

Becca Trietch quickly provided a summary of the Procurement Procedure Document and RFP Template, that Marisa Desautel worked on with the State's Legal Department. When the EERMC procured services or goods in the past, the process wasn't standardized. This Procurement Procedures Document and RFP Template are going to serve as a guide for any future purchases. Chairman Chris Powell requested motion to vote to approve this guidance document and the RFP template. Joe Cirillo made a motion, Joe Garlick seconded it. All Approved.

*b) Vote on 2018 Energy Expo Sponsorship*

Cheryl Bond, John Marcantonio, Lou Latoya and Emily from RIBA, gave a quick presentation and went over the packet that was distributed amongst the Council members. They shared that between 2014-2018, Energy Expo attendance has been climbing each year. Moreover, the show as doubled the amount of energy efficiency and renewable energy exhibitors.

In the past year (2017), the EERMC contributed \$40k, to match National's Grid \$40k sponsorship for the Energy Expo. Because the Council does not have a projected Budget for 2018 yet, the Council vote today was only considering making a commitment to sponsoring the Energy Expo 2018. Today's vote was specifically seeking to keep the Energy Expo in the EERMC Budget in 2018, contingent on funding availability. Chairman Chris Powell requested a motion to vote, Betsy Stubblefield Loucks made a motion, Karen Verrengia seconded it. All Approved.

*c) Review of draft Scope of Work for consultant services*

Becca Trietch requested Council members to look over the draft of the Scope of Work, and send comments, questions, or concerns by August 10<sup>th</sup>, so she can compile the final RFP Draft for the Full Council Meeting in August.

*d) Communications Working Group Update*

Becca Trietch stated that the Communications Working Group has seen the beta EERMC Website, and has provided the website designer with many comments on how to improve it. The website will be shared with the Council once the Communications Working Group finalizes its comments/review.

Becca Trietch also shared that the Education RFP is out, and once they reach the due date at the beginning of August, they will share the proposals with the Council. In the meantime, Becca Trietch asked Council members to please share the RFP with anyone that would be interested in providing energy education to the public in Rhode Island.

**6. Draft Three- Year Plan**

*a) Context for draft Three- Year Plan*

Mark Kravatz, Mike Guerard and Emily Levin provided an overview of the draft Three-Year Plan.

*b) Review of first draft of the Three- Year Plan*

National Grid to provide an overview of the first draft of the 2018- 2020 Energy Efficiency and System Reliability Procurement Plan

Courtney L, Angela Li, Matt Ray, Laura Rodormer, Mona Chandra, Ben Rivers, Alice Hourihan, and Rachel Henschel reviewed the residential and Commercial program innovations, evaluations, impacts, and overall budget put forward in the draft 2018- 2018 Energy Efficiency and System Reliability Procurement Plan.

*c) Council Feedback & Discussion*

Chairman Chris Powell requested the Council to send feedback to the Consultant Team. Chairman Chris Powell requested that the final draft be sent to the Council at least one week before the August Council Meeting. Karen Verrengia asked National Grid to put contact information on their presentations for all the presenters going forward.

**7. Public Comment**

No public comment.

**8. Adjournment**

Chairman Chris Powell requested a motion to adjourn the meeting. Joe Cirillo made a motion and Karen Verrengia seconded it. All approved. The meeting was adjourned at 6:08pm.

# Rhode Island Energy Efficiency

Second Quarter 2017 | National Grid

August 10, 2017

## Overview

National Grid had a strong first half of 2017 and is on track to achieve its planned savings for the year. The company initiated customer segmentation in the residential sector to reach more low income customers while in the C&I sector the company is hitting its stride with LED streetlight annual MWh savings of over 6,800 MWh in the second quarter. At the end of the second quarter the company achieved 50.6% of the electric savings goal and 41.6% of the gas savings goal.

On the residential side in the Home Energy Reports program, the company sent the first Non-AMI high usage alerts to 31,535 Rhode Island customers through the second quarter. In the residential HVAC program the company provided ongoing outreach and programmatic support to participating contractors and trade allies to ensure they had the knowledge to effectively communicate program offerings to customers and the technical expertise to offer quality installations.

On the commercial side, the Commercial Retrofit program led the way by achieving savings of 40,386 annual MWh (52% of the annual goal) and 73,595 MMBtu (39% of the annual goal). These savings were achieved through the completion of a large CHP project and also over 6,800 MWh of savings from LED Streetlight programs in Providence, Cranston, and Bristol. In addition, National Grid welcomed Jennifer Parsons as the new Commercial Upstream Program Manager. Jennifer has been reaching out to vendors to investigate joint promotions which can be leveraged.

In the second quarter the Rhode Island Energy Challenge held multiple stakeholder engagement meetings which contributed to the towns of Cumberland, Smithfield, and North Kingstown committing to surpass their home energy assessment goals, promote energy efficiency programs, and create energy awareness task forces.

In the company's EnergyWise program, 345 HEAT loans were completed through the second quarter for a total of \$1.9 million in loans. In addition, the program implemented new weatherization job scoring software and processes for improved and timelier reporting to independent insulation contractors, helping us to improve our efficiency by saving time and money.

Looking to the future of energy efficiency, over 250 Ecobee Lytes were installed in the second quarter due to an overwhelming response to last year's Ecobee demand response offering. National Grid's Connected Solutions is also adding NEST to the selection of wifi thermostats that are eligible to participate in Rhode Island's Connected Solutions pilot program.

Based on the continued strong results in the second quarter, National Grid is confident that 2017 will be another strong year for energy efficiency in Rhode Island.



## 2017 Program & Initiative Updates

### Residential New Construction (RNC)

- Residential New Construction saw a continued strong trend in the second quarter with 184 units completed during the second quarter, bringing the total so far in 2017 to 416 (achieving 76% of the goal of 550)
- 47 homes achieved Tier II (minimum of 31% savings over the program baseline) and 3 homes achieved Tier III (minimum of 45% savings over the program baseline).
- Approximately ½ of the projects heat with gas and half with electric, resulting in an increase in electric savings.
- 214 units enrolled in the program during the second quarter, bringing the total through the second quarter to 442, 80% of the overall goal for the year.
- Enrollment Highlights
  - Ministerial Road in Kingstown scored a HERS Index of 18 and achieved 54.3% savings over the program baseline without PV and 123.6% savings with the addition of 686 square feet of PV. The home has two ductless mini splits (33 and 26 SEER), a 3.24 EF heat pump water heater, Energy Star appliances and lighting, and a measured air leakage rate of 0.19 ACH50.
  - The West Broadway Neighborhood Association (WBNA) had advocated for nearly a decade to return an 1892 historic four room schoolhouse on Almy and Meader Streets in Providence to active use. As the population declined in the late 1950s and 1960s, so did the public school population. The Meader Street School was decommissioned by the City in the 1970s, then used as RI's Head Start Administration until 2000 at which point it became vacant. The schoolhouse is now listed on the Providence Preservation Society's Most Endangered Properties List. In 2015 WBNA received historic tax credits worth \$250,000 for the project and the schoolhouse is now being transformed into 10 residential rental units, 4 of which will be designated for affordable housing. The developer has planted grass, an orchard that includes apple, peach and plum trees, and built raised garden beds for future tenants.



### Income Eligible

- Three Weatherization Technical Committee Meetings took place during second quarter.
- The Weatherization Operations Committee was created to review and update the Operations Manual. The Committee, National Grid, DHS and Agencies, meets approximately every two weeks. The goal is to update the Manual and develop a training program for all Auditors and Monitors in the third quarter.
- The Best Practices Meeting was conducted on May 18, 2017. Guest speakers from the company's Customer Satisfaction Group presented information about National Grid's programs for arrears and budget plans.
- Each agency was provided with a midyear update on their budget and energy savings goals. A new pipeline reporting tool was developed and provided to CAPs to give clear direction on goals and opportunities.
- Implementation of the National Grid Background Check program continued in the second quarter, with an emphasis on specialty contractors (electricians, chimney service, disaster prep, etc.).
- The company participated in the following trainings and workshops:
  - A four-hour ASHRAE 2016 training and three-hour Rhode Island Energy Code training, co-presented, with Paul Raymer. Attendees included Auditors, Monitors and Program Managers.
  - The Mobile Home Weatherization training – (Presented by Jules Junker of ThermalWorks).
  - The Weatherization Policy Advisory Committee – (The annual meeting reviewing the DOE weatherization program).
  - The ACEEE Low Income Working Group webinar on Reaching Renters.

### EnergyWise

- 4,061 audits completed through the second quarter.
- The company attended several community events to promote EnergyWise including:
  - The Newport Chamber of Commerce
  - Fidelity Employee Event
  - JWU Sustainability Fair
  - Pawtucket/Central Falls Customer Connections Meeting,
  - The Providence Energy Fair
  - An Energy Fair.
- EnergyWise began a “summer sizzler” on 4/15 with a bonus of \$100 which was increased to \$200 on 6/1. The program will conclude on 8/31.
- EnergyWise began wifi thermostats installations during the second quarter.
- The program implemented new weatherization job scoring software and processes for improved and timelier reporting to independent insulation contractors.
- 345 HEAT loans were completed through the second quarter for a total of \$1.9 million in loans.

- 958 gas weatherization jobs completed through the second quarter. When including other fuels the total increases to 1,361.

### **EnergyWise and Income Eligible Multifamily**

- In the second quarter The Company awarded the Multifamily Market Rate, Multifamily Commercial Gas, and Income Eligible Multifamily program vendor contract to RISE Engineering after a thorough review of the program and a competitive Request for Proposal (RFP) process in the first quarter.
- The Company began the installation of heating systems for the 2017 program year under the Income Eligible gas budget.
- A large focus was placed on serving income eligible facilities heated with delivered fuels during the second quarter for multiple retrofit projects.
- For both Market Rate and Income Eligible programs the Company targeted numerous 1-4 unit geographically diverse sites under single ownership in order to support the program's pipeline.

### **ENERGYSTAR® Lighting and Appliances**

- A negotiated cooperative promotion was developed between Globe Electric and the Rhode Island Foodbank to support the distribution of LED A-line product two-packs to food bank customers.
- Support of customer outreach events included: Tessier's Hardware, an Earth Day event in Pawtucket, the URI Spring Festival in Kingston, CVS' Green Expo in Woonsocket, and staffing at the Rhode Island Home Show.
- For Appliances, there were two dehumidifier turn-in events at the Eco Depot in Johnston RI. One of these events was in conjunction with the Narragansett DPW, which brought in 129 units.
- A \$40 mail in rebate for room air conditioners also began in June.

### **ENERGYSTAR® HVAC (Heating and Cooling)**

- The company provided ongoing outreach and programmatic support to participating contractors and trade allies to ensure they had the knowledge to effectively communicate the program offering to customers, and the technical expertise to offer quality installations.
- The company also scheduled trainings and events with distributors and contractors in preparation for the upcoming heating season.

### **Home Energy Reports**

- Through the second quarter of 2017 the Home Energy Reports program saved 49,771 MMBTUs (84% of the annual goal) and 14,816 MWh (55% of the annual goal). The gas program continues to be on pace to exceed expectations.
- The company also sent the first Non-AMI high usage alerts to 31,535 customers through the second quarter.
- Customer segmentation was initiated to offer income eligible customers a relevant marketing experience in the Home Energy Report through driving to Rhode Island assistance programs.

- The Company paused its Points & Rewards component to review effectiveness.

## Community Initiatives

- In the second quarter the Rhode Island Energy Challenge held multiple stakeholder engagement meetings and appeared before town councils to encourage participation in the energy efficiency community engagement program.
- As a result of these efforts the towns of Cumberland, Smithfield, and North Kingstown have stepped forward and committed to surpassing their home energy assessment goals, promoting energy efficiency programs, and creating energy awareness task forces. A fourth community is being recruited in the third quarter

## Code Compliance Enhancement Initiative (CCEI)

- In the second quarter the RI building commission requested the ICC develop a benefit-cost analysis on the 2015 ICC family of codes.
- E. A. McNulty's new Sableswood North residential development in Lincoln RI. project is now in the RNC program. Insulation and air barrier details were examined in the shell home and attendees gained an understanding of the importance of testing at the rough stage. Participants observed and participated in both blower door and duct leakage tests.



- Presentations at Dryvit in West Warwick focused on areas including: how air and moisture move through and affect insulated structures, the science associated with occupant health and comfort, and long term building durability.
- Residential HVAC and IAQ (including ASHRAE 62.2.6 2016) training was provided for energy auditors and weatherization professionals who perform work for National Grid's Income Eligible program.

## Large Commercial New Construction

- In July the company welcomed Jennifer Parsons as the new Commercial Upstream Program Manager

- The new program manager is reaching out to vendors to investigate joint promotions which can be leveraged.

### **Large Commercial Retrofit**

- Large Commercial Retrofit is off to a strong start through the first half of 2017, already achieving savings of 40,386 MWh (52% of the annual goal) and 73,595 MMBtu (39% of the annual goal).
- Lighting sales continue to trend as usual through the second quarter.
- Street light incentives were paid for retainage in Bristol, Cranston and Providence.
- North Kingstown, South Kingstown, Narragansett and Warwick are planning to put out a joint RFP to purchase LED street lights. Given that none of these towns have purchased their street lights from National Grid yet this presents a strong opportunity for savings.
- The company is waiting for PRISM on applications for 11 towns. Through the second quarter, only Middletown has expressed interest in leasing LED street lights from National Grid.
- Post inspection and commissioning were completed for a manufacturer and retainage was paid. A post inspection was completed for a hotel and commissioning is now underway. Two offer letters will be going out in the near future with an expected completion date in the summer of 2018 for both CHP projects.

### **Small Business Direct Install**

- The Small Business Direct Install program had a strong first half of the year by achieving savings of 4,901 MWh (40% the annual goal) and 1,814 MMBtu (50% of the annual goal) and is projected to deliver 95-100% of the savings goal by the end of the year.

### **Pilots**

- Installation for the Smart Lighting Solutions pilot is scheduled to begin in July. The study is expected to be 18 months in duration and will track how customers interact with wifi controllable lighting and how changes in behavior can lead to improved efficiency.
- Over 250 Ecobee Lytes were installed in the second quarter due to an overwhelming response to last year's Ecobee demand response offering.
- Connected Solutions is adding NEST to the selection of wifi thermostats that are eligible to participate in Rhode Island's Connected Solutions pilot.

### **Evaluation**

- The participation study has proceeded and is nearing draft report stage.
- For the C&I Custom Process study the Rhode Island analysis is almost complete and is waiting on the Massachusetts portion of the study.
- Site reports have been completed for the C&I Custom HVAC study, with the final report in progress.
- Metering continues at customer sites for the C&I Comprehensive Design Approach Evaluation.

- For the C&I Upstream Lighting study, field measurement activities are in progress.
- For the C&I Free-Ridership / Spillover study the sample design has been selected and surveying is in progress with a report expected in mid-August.

## **Upcoming Events**

- The Energy Summit will take place at Gillette Stadium on October 19<sup>th</sup>

NATIONAL GRID ENERGY EFFICIENCY PROGRAMS IN RHODE ISLAND

Table 1. Summary of Electric 2017 Target and Preliminary 2nd Quarter Results

ELECTRIC PROGRAMS Sector and Program	(1) (2) (3) (4)				(5) (6) (7) (8)				(9) (10) (11)			(12) (13) (14)			(15) (16) (17)		
	Demand Reduction (Annual kW)				Energy Savings (Annual MWh)				Customer Participation			Expenses (\$ 000)			Lifetime savings, MWh \$/kWh Planned \$/kWh		
	Target	Year To Date	Pct Achieved	Pct Projected	Target	Year To Date	Pct Achieved	Pct Projected	Target	Year To Date	Pct Achieved	Budget	Year To Date	Pct Achieved			
<b>Commercial and Industrial</b>																	
Large Commercial New Construction	1,276	474	37.1%		14,270	2,959	20.7%		201	53	26.4%	\$5,121.4	\$1,829.6	35.7%	43,156	\$ 0.042	\$ 0.022
Large Commercial Retrofit	13,317	5,382	40.4%		77,611	40,386	52.0%		2,188	1,325	60.6%	\$23,708.4	\$9,482.9	40.0%	555,933	\$ 0.017	\$ 0.041
Small Business Direct Install	2,815	705	25.0%		12,136	4,901	40.4%		744	285	38.3%	\$8,831.4	\$2,691.3	30.5%	60,495	\$ 0.044	\$ 0.076
Commercial Demonstration and R&D												\$874.4	\$19.0	2.2%			
Finance Costs												\$1,300.0	N/A	N/A			
RI Infrastructure Bank												\$4,900.0	\$0.0	0.0%			
<b>SUBTOTAL</b>	<b>17,408</b>	<b>6,561</b>	<b>37.7%</b>	<b>90.0%</b>	<b>104,017</b>	<b>48,246</b>	<b>46.4%</b>	<b>97.3%</b>	<b>3,133</b>	<b>1,663</b>	<b>53.1%</b>	<b>\$44,735.6</b>	<b>\$14,022.8</b>	<b>31.3%</b>	<b>659,583</b>	<b>\$ 0.021</b>	<b>\$ 0.046</b>
<i>Subtotal with Finance</i>												\$44,735.6	\$14,022.8	31.3%	659,583	\$ 0.021	\$ 0.046
<b>Income Eligible Residential</b>																	
Single Family - Income Eligible Services	652	308	47.3%		4,350	1,688	38.8%		2,625	1,403	53.4%	\$9,268.1	\$3,314.1	35.8%	19,520	\$ 0.170	\$ 0.200
Income Eligible Multifamily	145	82	56.5%		2,726	1,604	58.8%		2,894	2,471	85.4%	\$2,708.4	\$1,208.7	44.6%	13,365	\$ 0.090	\$ 0.097
<b>SUBTOTAL</b>	<b>797</b>	<b>390</b>	<b>49.0%</b>	<b>102.4%</b>	<b>7,076</b>	<b>3,292</b>	<b>46.5%</b>	<b>108.9%</b>	<b>5,519</b>	<b>3,874</b>	<b>70.2%</b>	<b>\$11,976.5</b>	<b>\$4,522.8</b>	<b>37.8%</b>	<b>32,885</b>	<b>\$ 0.138</b>	<b>\$ 0.161</b>
<b>Non-Income Eligible Residential</b>																	
Residential New Construction	54	71	131.9%		1,065	430	40.4%		561	416	74.2%	\$1,045.3	\$478.9	45.8%	8,210	\$ 0.058	\$ 0.066
ENERGY STAR® HVAC	330	176	53.5%		1,376	565	41.1%		1,900	968	50.9%	\$1,669.5	\$643.2	38.5%	7,446	\$ 0.086	\$ 0.124
EnergyWise	376	97	25.7%		6,545	3,841	58.7%		9,000	5,765	64.1%	\$9,630.0	\$4,858.3	50.4%	35,876	\$ 0.135	\$ 0.166
EnergyWise Multifamily	288	58	20.2%		3,519	803	22.8%		4,000	1,478	37.0%	\$3,443.5	\$653.4	19.0%	7,062	\$ 0.093	\$ 0.111
ENERGY STAR® Lighting	5,466	3,406	62.3%		46,856	29,195	62.3%		279,425	243,458	87.1%	\$9,412.4	\$4,096.5	43.5%	260,450	\$ 0.016	\$ 0.038
Residential Consumer Products	705	112	15.9%		4,708	718	15.2%		14,700	3,129	21.3%	\$2,125.0	\$544.6	25.6%	5,512	\$ 0.099	\$ 0.081
Home Energy Reports	3,119	1,996	64.0%		26,184	14,816	56.6%		208,063	267,433	128.5%	\$2,447.0	\$1,260.0	51.5%	14,816	\$ 0.085	\$ 0.093
Energy Efficiency Educational Programs												\$40.0	\$41.2	102.9%			
Residential Demonstration and R&D												\$1,179.5	\$229.5	19.5%			
Community Based Initiatives - Residential												\$270.8	\$131.2	48.5%			
Comprehensive Marketing - Residential												\$535.4	\$179.4	33.5%			
<b>SUBTOTAL</b>	<b>10,338</b>	<b>5,917</b>	<b>57.2%</b>	<b>98.6%</b>	<b>90,254</b>	<b>50,368</b>	<b>55.8%</b>	<b>100.1%</b>	<b>517,648</b>	<b>522,647</b>	<b>101.0%</b>	<b>\$31,798.4</b>	<b>\$13,116.2</b>	<b>41.2%</b>	<b>339,372</b>	<b>\$0.039</b>	<b>\$ 0.070</b>
<b>Regulatory</b>																	
EERMC												\$816.3	\$246.2	30.2%			
OER												\$816.3	\$430.7	52.8%			
<b>SUBTOTAL</b>												<b>\$1,632.5</b>	<b>\$676.9</b>	<b>41.5%</b>			
<b>TOTAL</b>	<b>28,543</b>	<b>12,868</b>	<b>45.1%</b>	<b>93.4%</b>	<b>201,347</b>	<b>101,906</b>	<b>50.6%</b>	<b>98.9%</b>	<b>526,299</b>	<b>528,183</b>	<b>100.4%</b>	<b>\$ 90,143.1</b>	<b>\$ 32,338.7</b>	<b>35.9%</b>	<b>1,031,840</b>	<b>\$0.031</b>	<b>\$ 0.058</b>
<i>TOTAL With Finance</i>												\$ 90,143.1	\$ 32,338.7	35.9%	1,031,840	\$0.031	\$ 0.058
RGGI												\$ 516.1	\$23.0	4.5%			
Municipal LED Street Lights												\$ 1,525.0	\$300.0	19.7%			
System Reliability Procurement												\$ 399.3	\$137.4	34.4%			

NOTES  
(1)(5)(9) Targets from Docket 4654 - Attachment 5, Table E-7 (electric)  
(3) Pct Achieved is Column (2)/ Column (1).  
(7) Pct Achieved is Column (6)/ Column (5).  
(9) Participation was planned and is reported in 'net' terms which takes into account free-ridership and spillover.  
(11) Pct Achieved is Column (10)/ Column (9).  
(12) Approved Budget includes Implementation and Evaluation budgets from Docket 4654, Attachment 5 Table E-2 (electric).  
(13) Year To Date Expenses include Implementation and Evaluation expenses.  
RGGI Expenses are counted separate as those funds were not part of the approved 2017 budget. Details on RGGI spend are found in Table 4.  
(14) Pct Achieved is Column (13)/ Column (12).  
(16) \$/lifetime kWh = Column (13)/Column (15)  
(17) Planned \$/lifetime kWh - Attachment 5, Table E-5 (electric)  
System Reliability Procurement targets from Docket 4654 - Attachment 5, Table E-7 (electric), not included in Expenses Total  
The Company received \$1,525,000 from the State to pay out to municipal customers on its behalf.

NATIONAL GRID ENERGY EFFICIENCY PROGRAMS IN RHODE ISLAND  
**Table 2. Summary of Gas 2017 Target and Preliminary 2nd Quarter Results**

GAS PROGRAMS Sector and Program	(1) (2) (3) (4) Energy Savings (MMBtu)			(5) (6) (7) Customer Participation			(8) (9) (10) Expenses (\$ 000)			(11)	(12)	(13)	
	Approved Target	Year To Date	Pct Achieved	Approved Target	Year To Date	Pct Achieved	Approved Budget	Year To Date	Pct Achieved	Lifetime savings, MMBtu	\$/Lifetime MMBtu	Planned \$/Lifetime MMBtu	
<b>Commercial and Industrial</b>													
Large Commercial New Construction	53,516	9,828	18.4%		149	83	55.7%	\$2,086.3	\$1,003.4	48.1%	195,236	\$ 5.14	\$ 3.93
Large Commercial Retrofit	187,938	73,595	39.2%		147	40	27.3%	\$5,830.5	\$1,336.4	22.9%	573,870	\$ 2.33	\$ 4.07
Small Business Direct Install	3,639	1,814	49.8%		86	55	63.6%	\$268.7	\$40.3	15.0%	11,270	\$ 3.58	\$ 7.74
Commercial & Industrial Multifamily	4,434	914	20.6%		806	252	31.3%	\$738.9	\$66.0	8.9%	9,910	\$ 6.65	\$ 12.82
Commercial Demonstration and R&D								\$73.8	\$1.0	1.4%			
RI Infrastructure Bank								\$100.0	\$0.0	0.0%			
Finance Costs								\$500.0	N/A	N/A			
<b>SUBTOTAL</b>	<b>249,527</b>	<b>86,150</b>	<b>34.5%</b>	<b>100.0%</b>	<b>1,188</b>	<b>430</b>	<b>36.2%</b>	<b>\$9,598.1</b>	<b>\$2,447.1</b>	<b>25.5%</b>	<b>790,286</b>	<b>\$ 3.10</b>	<b>\$ 4.50</b>
<i>Subtotal With Finance</i>								\$9,598.1	\$2,447.1	25.5%	790,286	\$ 3.10	\$ 4.50
<b>Income Eligible Residential</b>													
Single Family - Income Eligible Services	11,032	6,278	56.9%		590	313	53.1%	\$3,640.6	\$1,653.9	45.4%	125,552	\$ 13.17	\$ 16.50
Income Eligible Multifamily	15,810	2,137	13.5%		2,709	1,395	51.5%	\$2,216.6	\$193.7	8.7%	28,579	\$ 6.78	\$ 7.94
<b>SUBTOTAL</b>	<b>26,842</b>	<b>8,415</b>	<b>31.4%</b>	<b>110.3%</b>	<b>3,299</b>	<b>1,708</b>	<b>51.8%</b>	<b>\$5,857.2</b>	<b>\$1,847.6</b>	<b>31.5%</b>	<b>154,131</b>	<b>\$ 11.99</b>	<b>\$ 11.72</b>
<b>Non-Income Eligible Residential</b>													
EnergyWise	28,587	14,506	50.7%		2,250	1,784	79.3%	\$6,917.2	\$3,925.9	56.8%	348,542	\$ 11.26	\$ 14.63
Energy Star® HVAC	27,393	8,596	31.4%		2,104	806	38.3%	\$1,803.5	\$643.7	35.7%	143,355	\$ 4.49	\$ 10.82
EnergyWise Multifamily	11,518	2,343	20.3%		4,101	1,950	47.5%	\$1,823.6	\$264.8	14.5%	34,013	\$ 7.79	\$ 13.22
Home Energy Reports	59,164	49,771	84.1%		99,001	125,409	126.7%	\$497.0	\$252.1	50.7%	39,357	\$ 6.41	\$ 8.40
Residential New Construction	11,575	2,620	22.6%		373	215	57.6%	\$840.7	\$429.7	51.1%	65,380	\$ 6.57	\$ 8.30
Residential Demonstration and R&D								\$264.4	\$24.5	9.3%			
Comprehensive Marketing - Residential								\$69.8	\$33.6	48.2%			
Community Based Initiatives - Residential								\$79.6	\$34.7	43.6%			
<b>SUBTOTAL</b>	<b>138,237</b>	<b>77,836</b>	<b>56.3%</b>	<b>108.2%</b>	<b>107,829</b>	<b>130,164</b>	<b>120.7%</b>	<b>\$12,295.7</b>	<b>\$5,609.1</b>	<b>45.6%</b>	<b>630,647</b>	<b>\$ 8.89</b>	<b>\$ 12.58</b>
<b>Regulatory</b>													
EERMC								\$304.3	\$77.6	25.5%			
OER								\$304.3	\$132.3	43.5%			
<b>SUBTOTAL</b>								<b>\$608.5</b>	<b>\$210.0</b>	<b>34.5%</b>			
<b>TOTAL</b>	<b>414,606</b>	<b>172,401</b>	<b>41.6%</b>	<b>103.4%</b>	<b>112,316</b>	<b>132,302</b>	<b>117.8%</b>	<b>\$ 28,359.5</b>	<b>\$ 10,113.8</b>	<b>35.7%</b>	<b>1,575,064</b>	<b>\$ 6.42</b>	<b>\$ 7.96</b>
<i>Total with Finance</i>								\$ 28,359.5	\$ 10,113.8	35.7%	1,575,064	\$ 6.42	\$ 7.96

NOTES  
(1)(5) Targets from Docket 4654 - Attachment 6, Table G-7 (gas).  
(3) Pct Achieved is Column (2)/ Column (1).  
Savings from the Codes and Standards initiative are not counted until year-end. Therefore, savings in the Commercial and Residential New Construction Programs may track lower each quarter.  
(5) Participation was planned and is reported in 'net' terms which takes into account free-ridership and spillover.  
(7) Pct Achieved is Column (6)/ Column (5).  
(8) Approved Budget includes Implementation and Evaluation budgets from Docket 4654, Attachment 6 Table G-2 (gas).  
(9) Year To Date Expenses include Implementation and Evaluation expenses.  
(10) Pct Achieved is Column (9)/ Column (8).  
(12) \$/lifetime MMBtu = Column (9)\*1000/Column (11)  
(13) Planned \$/lifetime MMBtu - Attachment 6, Table G-5 (gas).



**Table 4**  
**2017 RGGI Budget and Spend**

<b>Initiative</b>	<b>2017 Budget</b>	<b>Spend</b>
RI Public Energy Partnership Incentives	\$ 83,879	\$ -
Residential Delivered Fuels	\$ 21,484	\$ 21,484
Agricultural Delivered Fuels	\$ 240,116	\$ -
Heat Pump Study	\$ 170,597	\$ 1,543
<b>Total</b>	<b>\$ 516,076</b>	<b>\$ 23,027</b>

Notes

1. Budgets may differ from quarterly and annual RGGI reports delivered to the Office of Energy Resources as they represent funds available for program year 2017, net of previous year's spend.
2. Table only includes RGGI funds for specific initiatives. Does not include funds allocated to lowering the energy efficiency program charge or those allocated to loan funds.

**Table 3  
National Grid  
Revolving Loan Funds**

<b>Large C&amp;I Electric Revolving Loan Fund</b>			<b>Small Business Electric Revolving Loan Fund</b>		
(1)	2017 Funds Available	\$13,661,388	(1)	2017 Funds Available	\$2,567,799
(2)	2017 Loan budget	\$11,000,000	(2)	2017 Loan Budget	\$4,400,000
(3)	Committed	\$8,043,048	(3)	Committed	\$814,942
(4)	Paid	\$3,070,513	(4)	Paid	\$1,698,677
(5)	Repayments	\$1,981,092	(5)	Repayments	\$1,312,161
(6)	Number of loans	97	(7)	Participants	204
(7)	Participants	40	(8)	Savings (Gross MWh)	4,901
(8)	Savings (Gross MWh)	7,740	(9)	Savings (Net MWh)	5,085
(9)	Savings (Net MWh)	6,016	(10)	Savings (Gross kW)	761
(10)	Savings (Gross kW)	1,155	(11)	Saving (Net kW)	705
(11)	Saving (Net kW)	735	(12)	Available	\$3,198,542
(12)	Available	\$1,867,531			
<b>Rhode Island Public Energy Partnership (RI PEP)</b>			<b>C&amp;I Gas Revolving Loan Fund</b>		
(1)	2017 Funds Available	\$281,385	(1)	2017 Funds Available	\$1,479,707
(3)	Committed	\$9,076	(2)	2017 Loan budget	\$1,000,000
(4)	Paid	\$0	(3)	Committed	\$414,200
(5)	Repayments	\$181,432	(4)	Paid	\$297,998
(7)	Participants	1	(5)	Repayments	\$205,824
(8)	Savings (Gross MWh)	-	(7)	Participants	9
(9)	Savings (Net MWh)	-	(8)	Savings (Gross MMBtu)	265,828
(10)	Savings (Gross kW)	-	(9)	Savings (Net MMBtu)	194,626
(11)	Saving (Net kW)	-	(12)	Available	\$493,626
(12)	Available	\$453,741			

Notes

- 1 Amount available as of January 1, 2017, including 2017 fund injections detailed in Table E-10 and G-10.
- 2 Budget adopted by Sales Team for 2017 operations. Budget includes projections of repayments made during 2017.
- 3 As of June 30, 2017
- 4 As of June 30, 2017
- 5 As of June 30, 2017
- 6 As of June 30, 2017
- 7 Unique customer names for large business and customer accounts for small business (not adjusted for net-to-gross).
- 8 As of June 30, 2017
- 9 As of June 30, 2017
- 10 As of June 30, 2017
- 11 As of June 30, 2017
- 12 Available funds as of June 30, 2017.

**Efficient Buildings Fund  
Rhode Island Infrastructure Bank / Office of Energy Resources  
2017Q2 Report**

*Financing Program Income Statement*

Funds Available (4/1/17)	\$5 million SBC is equal to \$15mm - \$25mm in loans
Loans Paid Out	\$0
Loans Repayments	\$0
Loans Defaults	\$0
Outstanding Loan Value*	\$9.8mm
Funds Available (6/30/17)	\$5 million SBC is equal to \$15mm - \$25mm in loans

\*Outstanding loan value is cumulative. These loans were executed in 2016

*Financing Program Impacts*

<i>Participation</i>	
Number of Loans (#)	0
Number of Participants (#)	0
<i>Projects</i>	
Total Loan Volume (\$)	\$0
Total Associated Incentive Volume (\$) (Rd1 YTD)	\$986,865.88
<i>Savings (Rd1 YTD)</i>	
Gross Annual Electricity Saving Supported (MWh)	5,524 MWh
Gross Annual Capacity Reductions Supported (kW)	See Note (1)
Gross Annual Thermal Energy Saving Supported (therms)	58,716 therms
Lifetime Gross Energy Savings Supported (MMBTU)	See Note (2)
Total Annual Estimated Cost Savings (\$)	\$1,752,703.08

Note (1): This data was not collected for EBF Round 1 participants but will be available from future rounds.

Note (2): This data was not collected for EBF Round 1 participants but will be available from future rounds.

Loans and Participants: These numbers will be reported for 2017 activity. Loans expected to close in September 2017.

# Memo



STATE OF RHODE ISLAND  
**ENERGY EFFICIENCY &  
RESOURCE MANAGEMENT COUNCIL**

To: EERMC  
From: EERMC Consultant Team  
Date: August 15, 2017  
Subject: Preliminary review of National Grid's 2<sup>nd</sup> Quarter Report

**CONSULTANT TEAM**

National Grid's 2<sup>nd</sup> Quarter Report provides strong indication that program efforts in 2017 will once again successfully achieve the proposed savings goals for gas and electric cost-effectively, while also serving to meet broader objectives of equity, innovation and cost-efficiency.

The EERMC Consultant Team (C-Team) meets monthly with National Grid's Residential and C&I sector strategy teams and OER to review program performance and preliminary results. This 2<sup>nd</sup> Quarter report is in line with the reports we have been receiving and discussing with National Grid.

Relative to previous years, an important development is the more balanced savings results from the first half of the year, with electric tracking at 50% of savings at the half way mark, and natural gas at over 40%. Historically, the second half of the year is when the bulk of the savings are reported, especially in the fourth quarter when larger projects reach completion before end-of-year closing of books. This movement to rely less on the "hockey stick effect" is a positive development.

While the overall portfolio and sector level results are tracking well, the C-Team is planning on working more closely with National Grid in upcoming monthly Strategy meetings on two electric program areas that are lagging: Residential Consumer Products and EnergyWise Multifamily. As the report indicates, preliminary steps have been taken in these two areas.

The 2<sup>nd</sup> Quarter report will be reviewed and discussed in more detail at the September 21 Council meeting, and additional information from activities at the beginning of the 3<sup>rd</sup> Quarter to support the trajectory toward meeting the 2017 savings goals will be added to the discussion.



STATE OF RHODE ISLAND

# ENERGY EFFICIENCY & RESOURCE MANAGEMENT COUNCIL

## Three-Year Plan Review

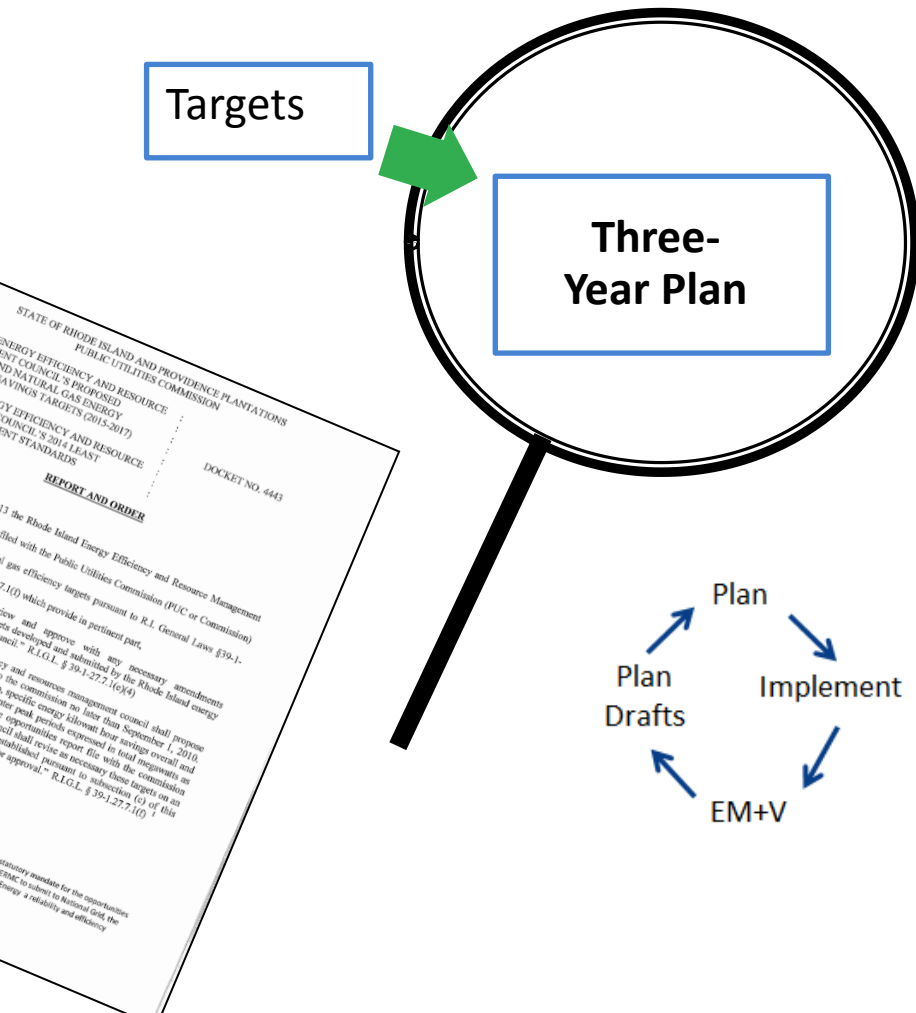
### Considerations Prior to Vote

**Presented By:** the Consultant Team

**Date:** August 17, 2017



# The Three-Year Plan



- Due Triennially on September 1<sup>st</sup>
- N-Grid is responsible for drafting and filing
- The Collaborative work regularly over the last 4 months to support development of first draft through final draft.
- C-Team focused on maximizing cost-effective savings in context of EERMC-recommended and PUC-approved Targets



# Impact of Rapid Market Transformation

- Uptake of energy efficiency products is rapidly increasing
- As efficient products become the default choice, the portion of savings directly attributable to National Grid's programs is smaller (p. 38)





# Increased Energy Savings to Achieve the Targets

- First draft Three-Year Plan fell significantly short of the Targets for 2018-2020
- C-Team worked intensively with National Grid to incorporate evaluation results and identify areas where savings could be increased
- National Grid identified more than 50,000 MWhs of additional cost-effective electric savings and is now **proposing to meet the PUC-approved electric targets in 2019 and 2020**
  - The \$12.5 million budget scoop and budget cap at 2017 levels for 2018 mandated in State Budget preclude hitting 2018 targets





# Addressing Policy Priorities

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- The Plan addresses many RI policy goals:
  - Strategic electrification (p. 63)
  - Moderate income services (p. 43)
  - Financing (p. 54)
  - Delivered fuel offerings (p. 65)
  - Integration with Power Sector Transformation (p. 62)



# Focus on Innovation

- 2018-2020 is key to position EE programs for the future, and the Plan includes strong commitment to innovation & pilots
- C-Team & National Grid worked together to identify several innovation areas to increase savings:
  - Upstream program designs (p.40), starting with heat pump water heaters
  - Operational and behavioral strategies such as Strategic Energy Management (p. 46), HVAC optimization (p. 51), and smart thermostats
- 2019 electric target includes placeholder for 25,539 MWh of future innovative savings above what is currently quantifiable. **C-Team supports the inclusion of this placeholder to cover cost-effective savings that could emerge by 2019.**



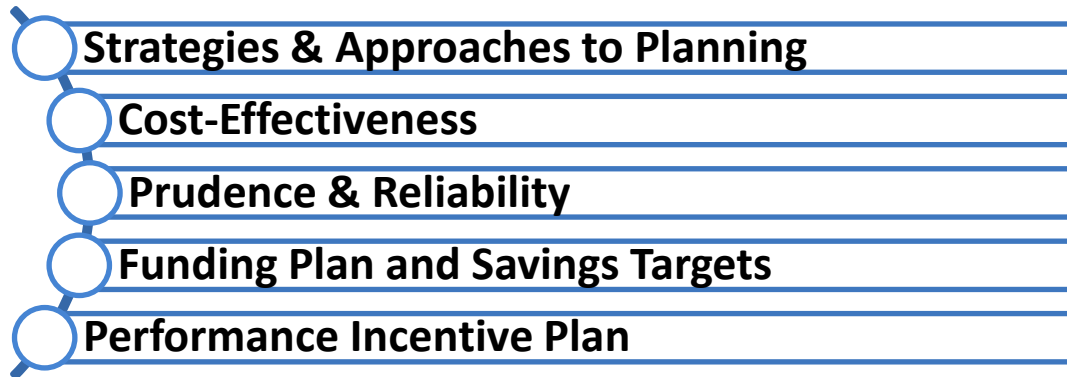
# System Reliability Procurement (SRP)

- The Plan reflects positive direction for SRP
- Discussion on proposed performance incentive for SRP, proposed by Grid to be 9% vs. the 5% performance incentive for energy efficiency
  - May be prudent to use the Plan to describe the future SRP incentives qualitatively and **use the annual plan to identify specific earnings incentives**. This would provide flexibility to reflect evolving Power Sector Transformation proceedings



# Recommendation

- The Three-Year Plan addresses the LCP criteria:



- The Plan is **cost-effective** according to the RI and Total Resource Cost (TRC) test
- We **recommend that the EERMC vote to approve** the Three-year Plan.
  - It is an effective medium term plan, with an understanding that the ensuing Annual Plans will refine the Plan as needed to maximize cost-effective savings as cost-efficiently as possible.

## 2017 Rhode Island Planned Evaluation List; Master Table

Sector	Fuel	Type	Affected Program(s)	Study Name	Study State Lead	Current Phase	Expected Final Due Date		Expected Filing Year	Study Included in 2018-2020 Three Year Plan?				Study to be Included in 2018 Annual Year Plan		
							YES	Maybe		NO	Describe How or Why for each	YES	Maybe	NO		
Rez	Elec. & Gas	Impact	Behavior	Home Energy Reports (HER) Impact Evaluation	RI	5: (RI) Report	Jul	2017	2017	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	draft results used in 18-20 plan, final results expected before 2018 plan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rez	Elec. & Gas	Impact	Residential New Construction	Residential Code Compliance and UDRH Impact Evaluation	RI	4: (RI) Implement	Jul	2017	2017	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	draft results used in 18-20 plan, final results expected before 2018 plan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rez	Elec. & Gas	Impact	Multiple	Residential Baseline / load shape Impact (MA-)	MA	4: (MA) In Progress	Oct	2017	2017	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	not expected to complete in time	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Rez	Elec. & Gas	Process	HES	HES Process evaluation (MA-RES 35)	MA	4: (MA) In Progress	Sep	2017	2017	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Process study: not complete in time, not the same delivery method in MA & RI	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Rez	Elec. & Gas	Process	Multifamily market rate	Multifamily Program Research (MA-RES 42)	MA	4: (MA) In Progress	Aug	2017	2017	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Process study: not expected to impact planned savings	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Rez	Elec.	Impact	Upstream Lighting	Lighting MAM (yearly update)	MA	6: (MA) Complete	Apr	2017	2017	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	residential lighting estimates are drawn from MAM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rez	Elec.	Impact	Heating and Cooling Eq Prg	Heat Pump Water heater study (Res 20)	MA	6: (MA) Complete	Sep	2017	2017	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	not expected to complete in time	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Rez	Elec.	Impact	HER and Single Family	Demand response kW and energy study, (WIFI Study)	MA	6: (RI) Complete	Apr	2017	2017	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Program is not yet mature / doesn't pass screening yet.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Rez	Elec.			Lighting Net to Gross	CT	6: (CT) Complete				<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Consultants estimated Resi lighting NTG between targets estimate & CT report	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Cross	Elec. & Gas	Planning	SF, MF, AMP, LI MF, SBS	3-yr planning: RNC, SF, MF, LIMF, SBS participation	RI	4: (RI) Implement	Aug	2017	2017	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Study had had difficulties with data & consistency of definitions; draft results to be available after 3rd draft of 3 yr plan	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Cross	Elec. & Gas	Reporting	Annual reporting	Jobs study	RI	6: (RI) Complete	Apr	2017	2017	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Jobs study: not expected to impact planned savings	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cross	Elec. & Gas	NEIs	MF market rate	MF NEI study	MA	4: (MA) In Progress	Oct	2017	2017	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	not expected to complete in time	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Cross	Elec. & Gas	NEIs	All	NEI Framework;	MA	4: (MA) In Progress	Sep	2017	2017	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	not expected to complete in time	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
C&I	Elec.	Impact	Upstream Lighting	Upstream lighting	RI	4: (RI) Implement	Sep	2017	2017	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	not expected to complete in time	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
C&I	Elec. & Gas	Impact	Custom CDA	Comprehensive Design Assessment (CDA)	RI	4: (RI) Implement	Sep	2017	2017	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	not expected to complete in time	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
C&I	Elec. & Gas	Impact	Commercial New Construction	C&I code compliance Study and NBI modeling	RI	5: (RI) Report	Jun	2017	2017	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	draft results used in 18-20 plan, final results expected before 2018 plan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C&I	Elec. & Gas	Impact	Commercial New Construction	Codes savings attribution assessment	RI	4: (RI) Implement	Aug	2017	2017	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	draft results used in 18-20 plan, final results expected before 2018 plan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C&I	Elec.	Impact	Custom HVAC	Custom HVAC Impact Evaluation	RI	5: (RI) Report	Jun	2017	2017	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	draft results used in 18-20 plan, final results expected before 2018 plan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C&I	Elec.	Impact	Custom Process	Custom Process	RI	5: (RI) Report	Jun	2017	2017	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Planning estimate used; RI results contingent on completion of MA study, which has unknown timing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C&I	Elec. & Gas	NTG	All C&I	Free-ridership & spillover study	RI	4: (RI) Implement	Sep	2017	2017	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Results expected to be applied to 2018 plan; not vetted in time for 18-20 plan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

C&I	Elec.	impact	SBS	SBS custom (MA in work plan stage)	MA	4: (MA) In Progress	Nov	2017	2017	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	not expected to complete in time	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
C&I	Elec.	Impact	C&I Retrofit	Controls (P71); Dunkin Donuts Review	MA	3: (MA) Detail Plan	Nov	2017	2017	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	not expected to complete in time	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
C&I	Elec.	Mkt Effects	Multiple	Lighting and Controls Market Effects Study (P53)	MA	4: (MA) In Progress	Oct	2017	2017	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	not expected to complete in time	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
C&I	Elec.	process	Combined Heat & Power	CHP Process Evaluation (P60)	MA	5: (MA) Report	Jun	2017	2017	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Process study: not expected to impact planned savings	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
C&I	Elec. & Gas	Baseline	Multiple	Impact Eval framework (P63) & Baseline (P64)	MA	6: (MA) Complete	Mar	2017	2017	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Concepts expected to be applied in concert with MA application	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C&I	Gas	Impact	C&I Retrofit	Steam Trap study phase 2 (P59)	MA	5: (MA) Report	Mar	2017	2017	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Deemed savings updated in planning / BC model	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C&I	Gas	Baseline	Multiple	Boiler Market Assessment Phase II (P48)	MA	5: (MA) Report	Mar	2017	2017	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Deemed savings updated in planning / BC model	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C&I	Gas	Impact	C&I Retrofit	2013 Prescr Gas Eval – Prog T-stats (P45)	MA	5: (MA) Report	Mar	2017	2017	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Deemed savings updated in planning / BC model	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C&I	Elec.	loadshape	Multiple	Prescriptive C&I Load shapes of Savings (P72)	MA	4: (MA) In Progress	Nov	2017	2017	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	not expected to complete in time	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

# Memo



STATE OF RHODE ISLAND  
**ENERGY EFFICIENCY &  
RESOURCE MANAGEMENT COUNCIL**

To: EERMC  
From: EERMC Consultant Team  
Date: August 17, 2017  
Subject: Review of LCP standards from 3-year Plan

CONSULTANT TEAM

The following excerpts from the EERMC-proposed and PUC-approved LCP Standards provide clear expectations of what the Three-year Plan should contain. The Consultant Team used this as a guide in its work supporting the development of the Plan, and confirms the proposed plan meets these criteria:

## **From LCP Standards proposed by EERMC and approved by PUC:**

Three-Year Plans shall be developed to propose strategies to achieve the energy efficiency savings targets that shall be proposed by the EERMC and approved by the Commission for that three year period. Such strategies shall secure energy, capacity, and system benefits and also be designed to ensure the programs will be delivered successfully, cost-effectively, and cost-efficiently over the long term. In addition to satisfying other provisions of these Standards, the Three-Year Plan shall contribute to a sustainable energy efficiency economy in Rhode Island, respond to and transform evolving market conditions, strive to increase participation, and provide widespread consumer benefits. (p. 34)

### **1.1. EE Procurement Plan** (pp. 35-36)

- A. The Utility Energy Efficiency and Conservation Procurement Plan (The EE Procurement Plan or Three-Year Plan) submitted on September 1, 2008 and triennially thereafter on September 1, shall propose overall budgets and efficiency targets for the three years of implementation beginning with January 1 of the following year. These budgets and targets shall be illustrative and provisional<sup>1</sup> and shall guide annual energy efficiency program plans over the three year period.
- B. The Three-Year Plan shall identify the strategies and an approach to planning and implementation of programs that will secure all cost-effective energy efficiency resources that are lower cost than supply and are prudent and reliable, consistent with the definitions provided herein. The Three-Year Plan shall contain sections which describe

<sup>1</sup> As the Three-Year Plan is illustrative and provisional, variances between Annual Plans and Three-Year Plans due to changes in factors such as, but not limited to, sales forecasts, funding sources, avoided costs, and evaluation results may be acceptable, subject to Commission review of Utility explanation for those variances.



- i. Strategies and approaches to planning.
- ii. Cost-effectiveness
- iii. Prudence and Reliability
- iv. Funding Plan and Initial Targets
  - a. The Utility shall develop a funding plan using, as necessary, the following sources of funding to meet the budget requirement of the Three-Year Plan and fulfill the statutory mandate of Least Cost Procurement. The Utility shall utilize as necessary and available, the following sources of funding for the efficiency program investments:
    - (1) the existing System Benefits Charge (SBC);
    - (2) revenues resulting from the participation of energy efficiency resources in ISO-New England's forward capacity market (FCM);
    - (3) proceeds from the auction of Regional Greenhouse Gas Initiative (RGGI) allowances pursuant to § 23-82-6 of the General Laws;
    - (4) funds from any state, federal, or international climate or cap and trade legislation or regulation including but not limited to revenue or allowances allocated to expand energy efficiency programs;
    - (5) a fully reconciling funding mechanism, pursuant to R.I.G.L. § 39-1-27.7, which is a funding mechanism to be relied upon after the other sources as needed to fully fund cost-effective electric and gas energy efficiency programs to ensure the legislative mandate to procure all cost effective efficiency that is lower cost than supply is met; and
    - (6) other sources as may be identified by the EERMC, the OER, and the Utility.
  - b. The Utility shall include a preliminary budget for the Three-Year Plan covering the three-year period that identifies the projected costs, benefits, and initial energy saving targets of the portfolio for each year. The budget shall identify, at the portfolio level, the projected cost of efficiency resources in cents/ lifetime kWh or cents/lifetime MMBtu. The preliminary budget and initial energy saving targets may be updated, as necessary, in the Utility's Annual Energy Efficiency Plan.

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## MEMORANDUM

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**TO:** EERMC  
**FROM:** MARISA DESAUTEL, ESQ. AND SEAN CARNEY, PARALEGAL  
**SUBJECT:** CONSULTING TEAM'S AUTHORITY TO CIRCULATE ITS  
COMMENTS ON THE 2<sup>ND</sup> DRAFT OF THE THREE-YEAR ENERGY  
EFFICIENCY AND SYSTEM RELIABILITY PLAN  
**DATE:** AUGUST 17, 2017

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This memorandum explains the scope of the Consulting Team's ("C-Team") authority to draft and circulate the August 8<sup>th</sup> comments regarding the Three-Year Energy Efficiency and System Reliability Plan ("Three-Year Plan") on behalf of the Energy Efficiency Resources Management Council ("EERMC/the Council"). After reviewing the C-Team's comments, meeting minutes from December 2016 and January 2017, and the C-Team's 2017 scope of work proposal, it is clear that the C-Team did not act beyond its authority. Therefore, it is my conclusion that the comments made by the C-Team on behalf of EERMC were valid to the extent applicable by EERMC's bylaws and Rhode Island state law.

During the monthly EERMC meeting that took place on December 8, 2016, the Executive Committee requested that the C-Team provide the Council with a proposed scope of work for 2017. During that meeting, the C-Team presented a draft work plan, which outlined its proposed activities.

Later, during the monthly EERMC meeting that took place on January 19, 2017, the Chairman of the EERMC made a motion to approve the C-Team's work plan simultaneously with council member Karen Verrengia, which was seconded by Joe Cirillo, and approved unanimously.

Among the work unanimously approved at the January meeting was a provision of the plan that corresponds with Rhode Island General Laws § 42-140.1-5, which gives the EERMC the power to "develop and recommend for implementation, plans, programs and standards for energy conservation, energy efficiency, and diversification of energy resources." In interpreting this provision, the C-Team proposed (and the Council approved) that it support the development and review of the 2018-2020 Three-Year Plan. To this end, the C-Team described that "[t]his effort will require the investigation of statewide, regional and national developments; data sourcing and analysis; meetings and negotiation; and *reporting*." (emphasis added). Furthermore, the C-Team identified in its scope of work "*Participation* in Collaborative meetings and associated stakeholder engagement; *review and analysis* of plan drafts . . ." among its key deliverables (emphasis added).

The August 8<sup>th</sup> comments circulated to the Collaborative members fall into the *reporting* and *participation* duties that the Council unanimously approved in January. Through these comments, the C-Team was merely reviewing and analyzing the Three-Year Plan's second draft, and reporting its findings. The above quoted language from the C-Team's work plan authorizes them to make such findings and circulate them to stakeholders, EERMC members, the executive committee, etc. Furthermore, nothing in EERMC's bylaws or the C-Team's approved work plan requires the executive committee or other bodies' approval before reporting those findings.

Should you have further questions or need supplemental briefing on this issue please feel free to contact me.

# 2018-2020 Energy Efficiency & SRP Plan Final Draft

RI EERMC

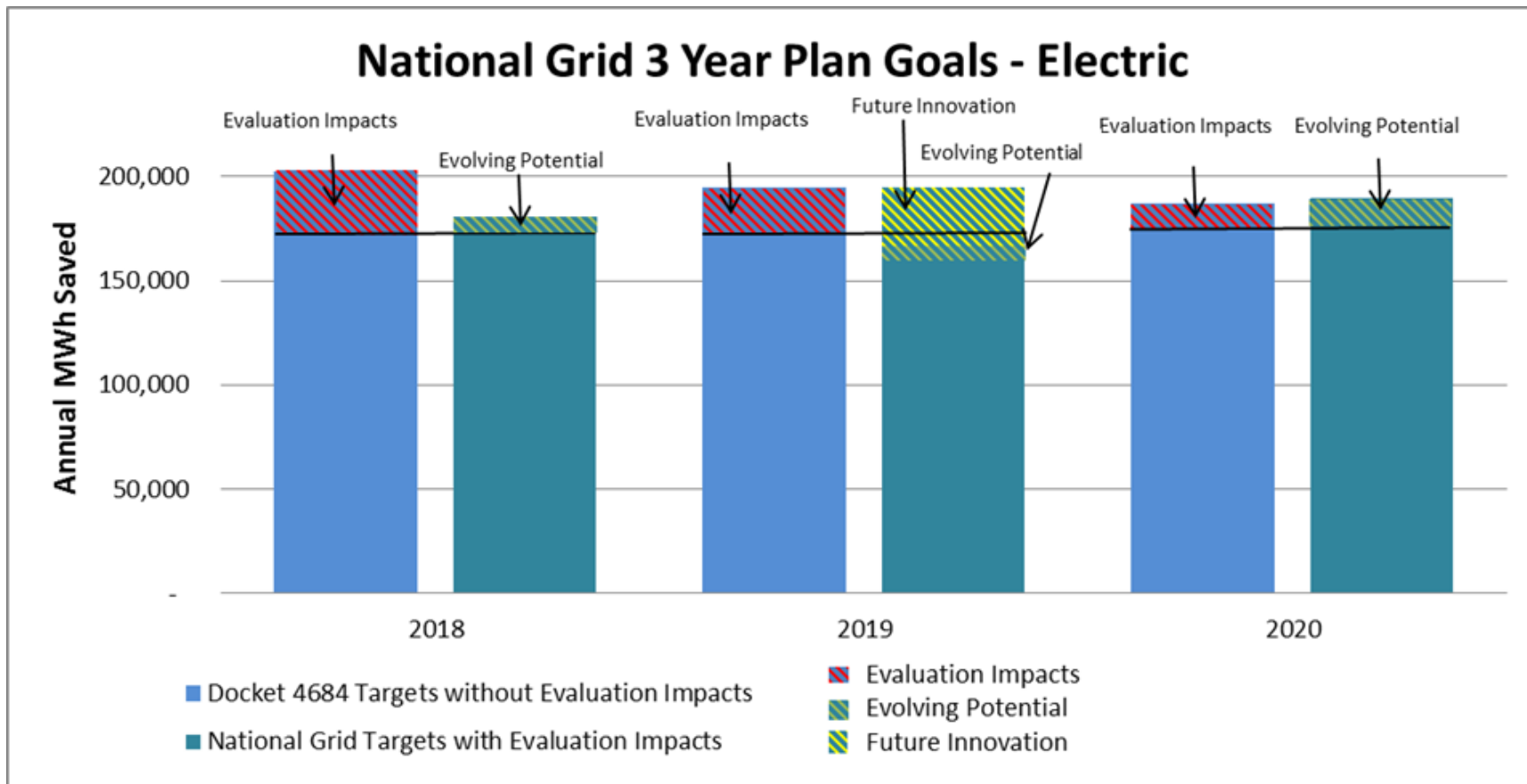
August 17, 2017



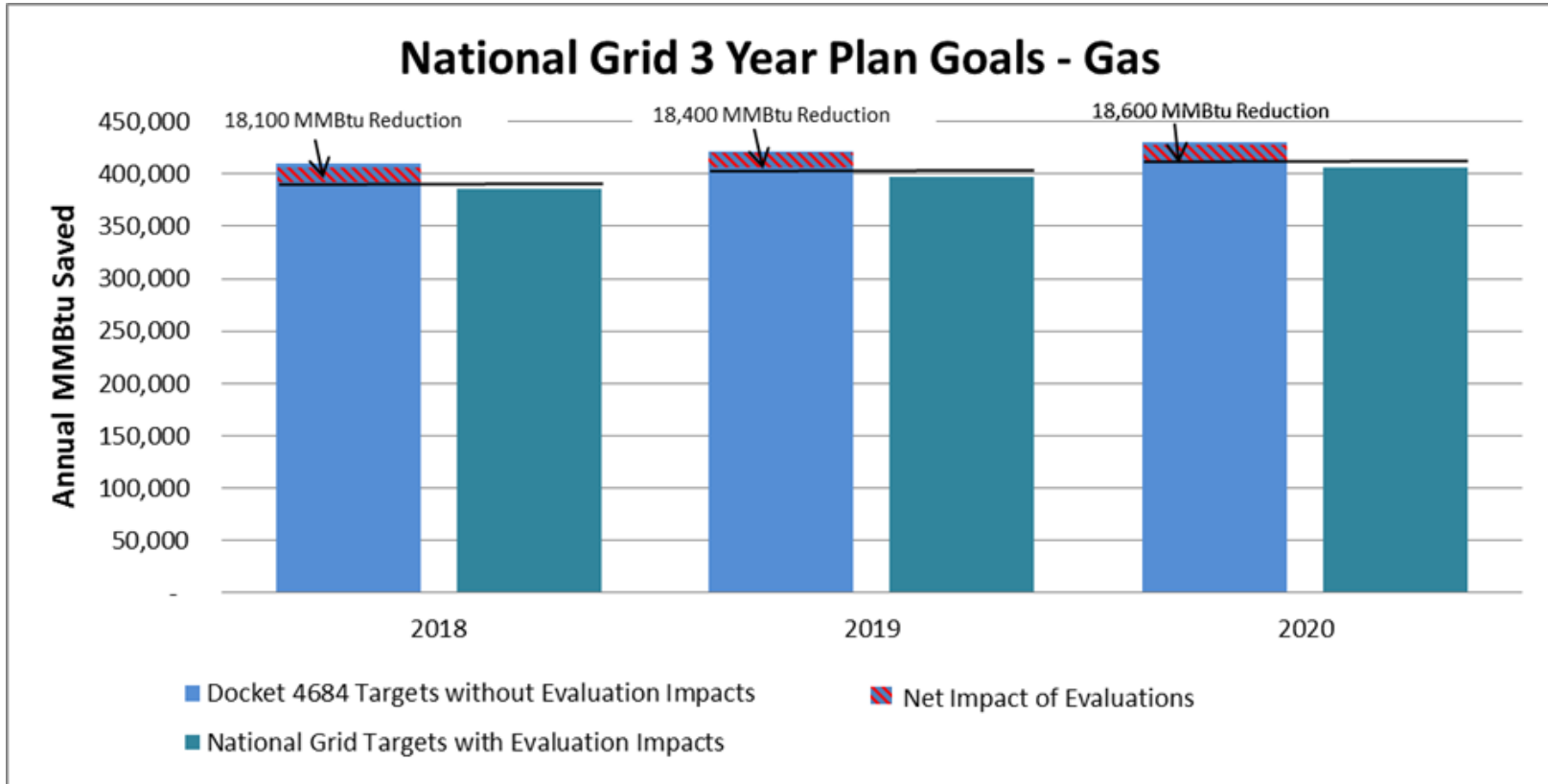
# Energy Efficiency



- Text:
  - Incorporated feedback from Collaborative and EERMC
- Numbers:
  - Reviewed BC Models with Consultant Team
    - Review included application of evaluation results, measure quantities and impacts
  - Increased electric savings slightly in 2018 and 2020
  - Added line item for “Future Innovation” in 2019 to meet target.
  - Budgets and charges changed due to increased savings and updated fund balance projections.



- 2019 Includes 25,539 MWh as an adder for future innovation.



- Once C&I Free Ridership evaluation results are applied, gas savings will increase to above 100% of targets.



Electric	2017	2018	2019	2020
Implementation Budget	\$88,510,555	\$96,634,953	\$113,272,514	\$102,229,204
Total Funding Required	\$94,568,586	\$115,547,860	\$124,932,991	\$109,090,025
Average EE Charge/kWh	\$0.01124	\$0.01090	\$0.01390	\$0.01193
Total Benefits	\$247,871,847	\$373,004,694	\$438,942,301	\$451,782,884
Benefit/Cost Ratio	2.00	2.93	2.88	3.23

- 2019 Electric Budget includes \$14.8M line item representing average cost to achieve 25,539 MWh of future innovation.

Gas	2017	2018	2019	2020
Implementation Budget	\$27,750,991	\$27,408,372	\$28,709,749	\$29,707,869
Total Funding Required	\$29,747,068	\$29,399,869	\$30,776,029	\$31,846,313
Average EE Charge/Dth	\$0.805	\$0.800	\$0.819	\$0.841
Total Benefits	\$66,558,401	\$97,702,163	\$101,369,221	\$104,184,334
Benefit/Cost Ratio	1.63	2.53	2.49	2.47

# System Reliability Procurement (SRP)



- 2018 – 2020 areas of focus
  - Heat Maps – Development of the RI System Data Portal
    - Deferral of load relief-related, traditional investments
    - Observe NWA efforts
    - Aligns with utility information becoming available nationwide
  - Partial NWAs - Building on the process developed in 2015/2016
  - Exploring NWAs in grid-side and customer-side technologies

- Funding – Annual Plans
- Incentive Mechanism – see edited text.
  - % of SRP spending budget for achieving 100% of kW installation goal
  - 75% of kW goal must be met before any incentive is earned
  - Up to 125% of incentive can be earned if kW goals are exceeded
  - Structure mimics the EE for simplicity and transparency
- Target incentive percentage to be determined prior to 2018 annual plan; should incentivize the Company to put NWA on an even footing with traditional investments

# Update on 2018 Annual Plan



- Sept. 14 – First draft distributed
- Sept. 21 – Presentation on draft at EERMC meeting
- Sept. 22 – Written comments due on first draft
- Oct. 12 – Final draft distributed
- Oct. 19 – EERMC vote to approve 2018 Annual Plan
- Oct. 23 – Final Plan circulated for settlement approval
- Nov. 1 – Plan filed with PUC

The Narragansett Electric Company  
d/b/a National Grid

**FINAL DRAFT**

**National Grid 2018-2020  
Energy Efficiency and System  
Reliability Procurement Plan**

\_\_\_\_\_ 2017

Submitted to:  
Rhode Island Public Utilities Commission

RIPUC Docket No. \_\_\_\_\_

Submitted by:

**nationalgrid**

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## Executive Summary

The Narragansett Electric Company d/b/a National Grid (National Grid or the Company) is submitting the 2018-2020 Three-Year Energy Efficiency and System Reliability Plan (Plan or Three-Year Plan) as the fourth triennial plan submitted in fulfillment of The Comprehensive Energy Conservation, Efficiency and Affordability Act of 2006 (the Act). The Act provides the statutory basis for Least Cost Procurement in the State of Rhode Island. The Act specifies that the Plan should include “measurable goals and target percentages for each energy resource, pursuant to standards established by the Public Utilities Commission (PUC), including efficiency, distributed generation, demand response, combined heat and power, and renewables.”<sup>1</sup>

## Purpose and Priorities

The purpose of this Three-Year Plan is to establish an overarching strategy for the next three years that will enable the Company to successfully meet the goals of Least Cost Procurement and deliver the Proposed Energy Savings Targets established by the Rhode Island Energy Efficiency Resources Management Council (EERMC or Council). The Rhode Island Public Utilities Commission (PUC) approved the targets in Docket 4684 at an Open Meeting on April 27, 2017. National Grid seeks PUC approval of this Plan to guide the development of the Energy Efficiency Program Plans for 2018, 2019 and 2020 (EE Annual Plans) and the Annual System Reliability Procurement Reports (SRP Reports). The Company will file the EE Annual Plans and SRP Reports with the PUC annually for review and approval.

National Grid has developed this Plan through consensus agreement with organizations that have historically joined the Company in settlements for the Company’s EE Annual Plans and SRP Reports. The Three-Year Plan lays out four key priorities:

1. **Customers** - Deliver comprehensive services encompassing all market segments and customers. Such services will enable customers to control their energy use, reduce their bills, and help support their financial well-being.
2. **Least Cost** - Deliver energy efficiency services as cost-effectively as possible through optimizing finance and promoting upstream initiatives. Continuing to deliver cost-effective energy savings under Least Cost Procurement will create cost savings

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<sup>1</sup> R.I. Gen. Laws §39-1-27.7

to all customers, while creating economic benefits that create and maintain local jobs and businesses.

3. **Environment** - Provide solutions that maximize greenhouse gas emission reductions and contribute to Rhode Island's clean energy policy goals, including the Resilient Rhode Island Act.
4. **Future** – Innovate to capture savings from new technologies and strategies to position energy efficiency programs for the future including the integration of energy efficiency with demand response, renewable energy, and smart grid technologies. This includes incorporating outcomes from the Rhode Island Power Sector Transformation Initiative and Docket 4600.

### Three-Year Savings Targets

~~In Docket 4684, The EERMC's Recommended Targets for Electric and Natural Gas Energy Efficiency (Targets) in Docket 4684 the EERMC~~ established three-year savings targets for energy efficiency. The EERMC targets set a high bar while committing to address the constant evolution in energy efficiency markets, technologies, funding, state and federal policies, and evaluation results. National Grid is committed to maintaining national leadership in energy efficiency by achieving ambitious savings. The savings illustrated in this Three-Year Plan will save ~~2.372.40%~~, ~~2.222.60%~~, and ~~2.482.53%~~ of 2015 electric load in 2018, 2019, and 2020 respectively and ~~1.000.94%~~, ~~1.040.97%~~, and ~~1.060.99%~~ of 2015 gas load in 2018, 2019, and 2020 respectively. The electric targets ~~in 2018 are and the gas targets in 2018, 2019, and 2020 are~~ slightly lower than the Commission approved Targets in Docket 4684 due to the incorporation of recent evaluation findings that are explained in Attachment 2.<sup>2,3</sup> ~~The electric target in 2019 includes 25,539 Annual MWh for future innovation above what the Company can assess as achievable today. The electric target in 2020 is slightly higher than the approved Targets.~~

<sup>2</sup> In Docket 4284, the 2012 - 2014 Energy Efficiency Program Plans and System Reliability Annual Reports for Electric and Gas, approved by the PUC at an Open Meeting on December 21, 2011, the Company put forth lower gas savings targets than those approved in Docket 4202 due to updated evaluation results and updated avoided cost.

<sup>3</sup> ~~Application of pending final evaluation results to the commercial and industrial sector programs for the 2018 Annual Plan, and subsequent annual plans, will likely increase gas savings and decrease electric savings compared to what is illustrated in this Plan. saving on the gas side to above the approved Targets in all three years, but will likely lower electric savings.~~

The savings targets included in this Plan will continue Rhode Island's leadership across the nation in procuring the least cost fuel through energy efficiency. ~~The Company will make every effort in subsequent Annual Plan filings to reevaluate available technologies, programs, and strategies to achieve the original savings targets included in Docket 4684.~~ The Company is committed to reviewing new savings opportunities with the EERMC and Collaborative to help achieve our mutual commitment to capturing all cost-effective energy savings through Least Cost Procurement.

Meeting the targets set forth in this Plan will require the Company to innovate and maximize customer service, energy efficiency delivery, and accelerate market transformation. This holds true in each year of this Plan, but is even more evident in program year 2019 where savings from unknown future innovation was added to the Electric Funding Plan in order to illustrate meeting the approved Targets. These energy savings can only be realized with continued commitments and actions from the Company, state and customers in addition to new technologies entering the market. ~~National Grid has highlighted In order to highlight~~ how much energy savings depends on innovation, policy changes and large scale projects. ~~National Grid developed a scenario in Table 2 that highlights the potential impact of these evolving issues. in this Plan.~~

### **New for the 2018-2020 EE Three-Year Plan**

The revised Standards set forth new requirements for a cost-effectiveness test called the Rhode Island Benefit Cost Test (RI Test), which “more fully reflects the policy objectives of the State with regard to energy, its costs, benefits, and environmental and societal impacts.”<sup>4</sup> In accordance with the Standards, the Company worked in collaboration with the Rhode Island Division of Public Utilities and Carriers’ (Division) consultants, EERMC consultants, the Office of Energy Resources (OER), and the Collaborative<sup>5</sup> to incorporate new benefits and costs into the RI Test. The RI Test includes Greenhouse Gas reduction values and economic benefits.

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<sup>4</sup> Least Cost Procurement Standards (Standards) approved at the Open Meeting on April 27, 2017 in Docket 4684.

<sup>5</sup> A collaborative group (Collaborative) has been meeting regularly since 1991 to analyze and inform the Company's electric and gas energy efficiency programs. Members of the Collaborative presently include the Company, the Division, PP&L, Rhode Island Housing, TEC-RI, and Acadia Center. In addition, the Office of Energy Resources (OER) and several EERMC members and representatives from the EERMC's Consulting Team participate in the Collaborative group. The constitution of the Collaborative has varied since 1991, as some organizations have withdrawn and others have joined.

During the years 2018 through 2020, the Company will be examining or offering a suite of new or expanded services for customers. Highlights of these services include:

- Support moderate income customers by making financing more accessible through a revolving loan fund at the Capital Good Fund and create program strategies that enable more participation.
- Continue income-eligible incentives for delivered fuel customers and provide weatherization incentives to single family and multi-family customers.
- Assess high-efficiency electric and gas HVAC equipment for potential upstream (to the manufacturer) or midstream (distributors and contractors) delivery models.
- Focus on offering more technologies, greater comprehensiveness, and more customer friendly approaches to customers in multifamily homes including, income eligible customers.
- Consider expanding income eligible offerings to more customers in conjunction with enrolling customers on the A-60 rate.
- Continue efforts to improve codes and standards by increasing energy code compliance through focusing resources on measured compliance and enforcement gaps. Pursue opportunities to expand support of federal and state appliance standards as well as the state's forthcoming stretch energy code
- Include incentives for strategic electrification of heating and support the installation of heat pumps for heating as well as cooling when cost effective, including educating consumers and installers on cost savings associated with using cold climate systems for heating.
- Expand community-based initiatives to achieve greater program participation in the residential and commercial and industrial (C&I) sectors and to support strategic electrification efforts.
- Invest in pilots and demonstrations, including electric demand response, energy monitoring, and battery storage, such that they support the Company's planning and strategic electrification efforts. Investigate the benefits of gas demand response that addresses gas peaks and continue promoting electric energy efficiency measures that provide savings during winter peak.

- Overcome customer barriers by continuing to invest in and optimize finance tools, including the Efficiency Building Fund (EBF), On Bill Financing and Repayment, and C-PACE.
- Explore new finance tools for residential and commercial customers and develop a cohesive implementation of current and new finance solutions.
- Increase commercial and residential new construction participation and comprehensiveness.
- Retrofit street lights in a large number of cities and towns and work collaboratively with OER, Rhode Island municipalities, and Partnership for RI Streetlights Management.
- Work closely with large C&I customers to plan for and install CHP
- Encourage large C&I customers achieve deeper energy savings through improvements in operations, management, adopting new technologies and creating long term energy savings plans and commitments through Strategic Energy Management Planning (SEMP) partnerships, expanding the retro-commissioning initiative, continuing pay for performance and exploring the potential of Strategic Energy Management (SEM).

### Resilient Rhode Island Act

The 2018-2020 Three-Year Plan marks the first triennial plan under the Resilient Rhode Island Act. Under the act, the State set forth the goal to reduce greenhouse gas (GHG) emissions to 80% below 1990 levels by 2050.<sup>6</sup> The Rhode Island Greenhouse Gas Emissions Reduction Plan (GHG Plan) identifies energy efficiency as an important component to achieving the Resilient Rhode Island Act GHG targets.<sup>7</sup> The electric, gas, and oil energy efficiency measures proposed within this Plan will contribute to the Rhode Island’s climate goals by reducing carbon emissions by ~~3-6~~3.7 million tons over the lifetime of the installed measures.<sup>8</sup> In addition to creating carbon savings through lowering electricity usage, the Plan puts forth additional innovative carbon

<sup>6</sup> Rhode Island General Laws §42-6.2

<sup>7</sup> Rhode Island Greenhouse Gas Emissions Reduction Plan, December 2016.

<sup>8</sup> Electric carbon emissions factor from 2014 ISO New England “Electric Generator Air Emissions Report” at [https://www.iso-ne.com/static-assets/documents/2016/01/2014\\_emissions\\_report.pdf](https://www.iso-ne.com/static-assets/documents/2016/01/2014_emissions_report.pdf). Oil and gas carbon emissions factors from [http://www.eia.gov/environment/emissions/co2\\_vol\\_mass.cfm](http://www.eia.gov/environment/emissions/co2_vol_mass.cfm).



reduction strategies such as the electrification of heating, and increasing investments in delivered fuels efficiency offerings.

### Illustrative Benefits, Costs and Funding

National Grid has illustrated the energy savings, benefits and costs that that the Annual Plans will aim to create and deliver. Over the next three years, energy efficiency will deliver \$1.65 billion in benefits – real dollar savings through avoided energy, transmission and distribution, and benefits such as water and maintenance savings, carbon savings, and economic stimulus.

The cumulative energy efficiency savings targets proposed in this Plan for the period of 2018 – 2020 are 7.077.53% of Rhode Island’s 2015 electric load and 3.402.90% of 2015 natural gas load.

The Plan describes funding sources, and Attachment 1 illustrates funding required to save energy and create customer and state benefits. National Grid is committed to working with stakeholders to adapt Annual Plans to deliver maximum customer benefits in conjunction with any changes in funding. The primary source of funding remains the Energy Efficiency customer charge, and National Grid will continue working with stakeholders and regulators to ensure that the charge is reconciled in the best manner for customers.

The following tables summarize illustrative benefits, costs, and funding proposed in this Plan.

Electric Programs	2018	2019*	2020
<b>Savings and Benefits</b>			
Annual MWh Savings	179,968	194,677	189,509
Lifetime MWh Savings	1,712,064	1,904,592	2,160,318
Savings as a Percent of 2015 Sales	2.40%	2.60%	2.53%
Annual Peak kW Savings	29,639	35,188	34,224
Winter Peak kW Savings	29,092	26,517	28,466
Total Benefits (RI Test)	\$ 373,004,694	\$ 438,942,301	\$ 451,782,884
<b>Costs</b>			
Total Funding Required	\$ 115,547,860	\$ 124,932,991	\$ 109,090,025
Cents per lifetime kWh	\$ 0.071	\$ 0.077	\$ 0.062
EE Program Charge per kWh	\$ 0.01090	\$ 0.01390	\$ 0.01193
Benefit Cost Ratio (RI Test)	2.93	2.88	3.23
Participation	TBD	TBD	TBD

\*2019 includes 25,539 Annual MWh and correlated costs and benefits, as an adder for future innovation.

<b>Natural Gas Programs</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
<b>Savings and Benefits</b>			
Annual MMBtu Savings	384,486	396,859	405,373
Lifetime MMBtu Savings	4,391,662	4,553,143	4,682,906
Savings as a Percent of 2015 Sales	0.94%	0.97%	0.99%
Total Benefits (RI Test)	\$ 97,702,163	\$ 101,369,221	\$ 104,184,334
<b>Costs</b>			
Total Funding Required	\$ 29,399,869	\$ 30,776,029	\$ 31,846,313
Cost per lifetime MMBtu	\$ 8.47	\$ 8.62	\$ 8.68
Average EE Program Charge per Dth	\$ 0.800	\$ 0.819	\$ 0.841
Residential Charge per Dth	\$ 0.882	\$ 0.903	\$ 0.928
C&I Charge per Dth	\$ 0.721	\$ 0.739	\$ 0.758
Benefit Cost Ratio (RI Test)	2.53	2.49	2.47
Participation	TBD	TBD	TBD

### **2018-2020 SRP Three-Year Plan**

Attachment 4 includes an overview of the Company’s approach to System Reliability Procurement (SRP) over the 2018-2020 period developed in accordance with the Standards. Although the Company plans to continue screening transmission and distribution projects for non-wires alternatives (NWAs) over the next three-years, it is possible that no projects will be identified due to minimal load growth in Rhode Island. In an effort to further promote NWAs in accordance with the revised Standards, the Company will develop and deploy a RI System Data Portal, which will have a Heat Map component to identify opportunities where NWAs can be utilized to reduce or manage load in areas including, but not limited to the following: highly utilized distribution systems; areas where construction is physically constrained; and areas where demand growth is anticipated. These efforts will prolong the useful lifetime of existing systems.

## Introduction

The 2018-2020 Three-Year Plan is the fourth triennial plan submitted by The Narragansett Electric Company d/b/a National Grid (National Grid or the Company) in accordance with Least Cost Procurement.<sup>9</sup> In Docket 4684, the PUC approved the Rhode Island Energy Efficiency Resources Management Council's (EERMC or Council) Proposed Energy Efficiency Savings Targets for the years 2018-2020 (2018-2020 Savings Targets) in compliance with R.I. Gen. Laws § 39-1-27.7.1.

The cumulative energy efficiency savings targets for the period of 2018 – 2020 are illustrated as 7.077.53% of Rhode Island's 2015 electric load and 3.402.90% of 2015 natural gas load. The electric target in 2018 and the gas targets in 2018, 2019, and 2020 are slightly lower than the Commission approved Targets in Docket 4684 due to the incorporation of recent evaluation findings that are explained in Attachment 2.<sup>10,11</sup> The electric target in 2019 include 25,539 Annual MWh for future innovation above what the Company can assess as achievable today. The electric target in 2020 is slightly higher than the approved Targets. The Company will review make every effort in subsequent Annual Plan filings to reevaluate available technologies, programs, evaluation results and strategies to achieve the original savings targets included in Docket 4684. The Company is committed to reviewing new savings opportunities with the EERMC and Collaborative in subsequent Annual Plans in order to help achieve our mutual commitment to capturing all delivering cost-effective energy savings that are potentially achievable through Least Cost Procurement.

The Plan is consistent with the revised Energy Efficiency Procurement Standards and System Reliability Procurement Standards (Standards), which the PUC approved at an Open Meeting on April 27, 2017 in Docket 4684.

**Table 1. 2018-2020 Docket 4684 Targets and Three-Year Plan Proposed Targets**

<sup>9</sup> R.I. Gen. Laws §39-1-27.7

<sup>10</sup> In Docket 4284, the 2012 - 2014 Energy Efficiency Program Plans and System Reliability Annual Reports for Electric and Gas, approved by the PUC at an Open Meeting on December 21, 2011, the Company put forth lower gas savings targets than those approved in Docket 4202 due to updated evaluation results and updated avoided cost.

<sup>11</sup> Application of pending final evaluation results to the commercial and industrial sector programs for the 2018 Annual Plan, and subsequent annual plans, will increase savings on the gas side to above the approved Targets in all three years, but will likely lower electric savings.

<b>Electric Targets</b>	<b>2018</b>	<b>2019*</b>	<b>2020</b>	<b>Total</b>
Docket 4684 Electric Targets (Annual MWh)	202,166	194,678	187,191	<b>584,035</b>
% of 2015 Electric Sales	2.70%	2.60%	2.50%	<b>7.80%</b>
3YP Electric Targets (Annual MWh)	179,968	194,677	189,509	<b>564,154</b>
% of 2015 Electric Sales	2.40%	2.60%	2.53%	<b>7.53%</b>
Difference	-11%	0%	1%	<b>-3%</b>
<b>Natural Gas Targets</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>Total</b>
Docket 4684 Natural Gas Targets (Annual MMBtu)	409,513	421,799	429,989	<b>1,261,301</b>
% of 2015 Natural Gas Sales	1.00%	1.03%	1.05%	<b>3.08%</b>
3YP Gas Targets (Annual MMBtu)	384,486	396,859	405,373	<b>1,186,717</b>
% of 2015 Natural Gas Sales	0.94%	0.97%	0.99%	<b>2.90%</b>
Difference	-6.11%	-5.91%	-5.72%	<b>-5.91%</b>

\*2019 includes 25,539 Annual MWh and correlated costs and benefits, as an adder for future innovation.

This Three-Year Plan was developed ~~by reaching consensus agreement~~ with entities that have historically joined the Company in settlements for the Company’s Annual Plans. Together with the Company, these entities are collectively called the Collaborative. Members of the Collaborative include the Rhode Island Division of Public Utilities and Carriers (Division) and the Division’s consultant, Synapse Energy Economics (Synapse), Acadia Center, the Rhode Island Office of Energy Resources (OER), People’s Power and Light, The Energy Council of Rhode Island (TEC-RI), EERMC members, and the EERMC’s consultant team led by the Vermont Energy Investment Corporation. Rhode Island Housing, while part of the Collaborative is currently a non-voting member. The EERMC Consulting Team reviewed the benefit cost illustration for cost-effectiveness included in this Plan. The ~~The~~ EERMC voted to endorse this Plan on August 17, 2017.<sup>12</sup>

**Comment [CL1]:** Update after 17<sup>th</sup> outcome

The savings targets in this Plan will result in significant benefits to electric and gas customers, the Rhode Island economy, and the environment. As illustrated, ~~t~~he Three-Year Plan will create annual savings of ~~529,046~~564,154 MWh and ~~1,268,136~~1,186,717 MMBtu and lifetime savings of ~~5,433,954~~5,776,974 MWh and ~~44,251,175~~13,627,710 MMBtu. The Plan will generate benefits of more than \$1.~~65~~ billion over the life of the measures (with \$1.~~32~~ billion in benefits coming from electric efficiency and \$~~306~~303.3 million in benefits from natural gas efficiency),

<sup>12</sup> Consistent with R.I. Gen. Laws § 42-140.1-5.

which represents a large benefit for Rhode Island’s residential, commercial, industrial, and income eligible energy customers.

In addition, the strategies defined in the Three-Year Plan will contribute to Rhode Island’s greenhouse gas reduction goals, as this Plan will avoid 3.76 million tons of carbon over the lifetime of the installed measures.<sup>13</sup>

This Plan will also provide additional significant economic benefits, such as increased gross state product (GSP) and job creation. Investments made in energy efficiency under this Three-Year Plan are expected to add over \$~~309.8~~328.5 million to Rhode Island’s GSP and create more than 4,547,822 job-years of employment.<sup>14</sup>

#### **RI Legislation of 2006 and Least Cost Procurement**

The Comprehensive Energy Conservation, Efficiency and Affordability Act of 2006 provides the statutory basis for Least Cost Procurement in the State of Rhode Island. The general purposes of the Act are (1) to provide Rhode Island residents, institutions, and businesses the benefit of stability through diversification of energy resources, energy conservation, efficiency, demand management, and prudent procurement; (2) to facilitate the development of renewable energy resources; (3) to make the cost of energy more affordable by mitigating demand and rates charged to low-income households; and (4) to strengthen energy planning, program administration, management, and oversight in a manner that is publicly accountable and responsive.

Specifically, the Act provides for Least Cost Procurement of system reliability and energy efficiency and conservation resources. System reliability procurement includes, but is not limited to, renewable energy resources, distributed generation, targeted energy efficiency, direct load control, and demand response. Energy efficiency procurement includes “procurement of energy efficiency and energy conservation measures that are prudent and reliable and when such

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<sup>13</sup> Electric carbon emissions factor from 2014 ISO New England “Electric Generator Air Emissions Report” at [https://www.iso-ne.com/static-assets/documents/2016/01/2014\\_emissions\\_report.pdf](https://www.iso-ne.com/static-assets/documents/2016/01/2014_emissions_report.pdf). Oil and gas carbon emissions factors from [http://www.eia.gov/environment/emissions/co2\\_vol\\_mass.cfm](http://www.eia.gov/environment/emissions/co2_vol_mass.cfm).

<sup>14</sup> Macroeconomic multipliers for the economic growth and job creation benefits of investing in cost-effective energy efficiency from National Grid’s 2014 Regional Economic Model (REMI) Analysis as presented by the Company to the Collaborative on May 29, 2014. To maintain consistency with RI Test economic benefits multiplier, the Company is only including construction phase impacts to GSP and job-years to account for only direct and indirect impacts.

measures are lower cost than acquisition of additional supply, including supply for periods of high demand.”<sup>15</sup>

The Act further requires that “each electrical distribution company shall submit to the Commission on or before September 1, 2008, and triennially on or before September 1, thereafter through September 1, 2024, a plan for system reliability and energy efficiency and conservation procurement.”<sup>16</sup> The Act specifies that the plan should include “measurable goals and target percentages for each energy resource, pursuant to standards established by the Commission, including efficiency, distributed generation, demand response, combined heat and power, and renewables.”<sup>17</sup>

### **Purpose of the Plan**

The purpose of the Three-Year Plan is to establish an overarching strategy for the next three years that will lead to successfully meeting the goal of Least Cost Procurement.<sup>18</sup> National Grid seeks PUC approval of this Plan to guide the development of the Energy Efficiency Program Plans for 2018, 2019 and 2020 (~~EE Program Annual~~ Plans) and the Annual System Reliability Procurement Reports (SRP Reports).<sup>19</sup> As outlined in the Standards, this Plan includes identifies implementation strategies that will secure cost-effective energy efficiency resources that are lower than the cost of supply and prudent and reliable. The Plan also described strategies, cost-effectiveness, prudence and reliability, contains a funding plan with illustrative budgets, funding sources and initial targets, and includes a shareholder incentive mechanism. The SRP Plan that will guide the development of detailed ~~EE Program Annual~~ Plans and SRP Reports that will be submitted to the PUC for approval. Since the Three-Year Plan is illustrative and provisional, variances between Annual Plans and Three-Year Plans due to changes in factors such as, but not limited to, legislative changes, sales forecasts, funding sources, avoided costs, and evaluation results are expected. The Company will provide explanations for any variances in its Annual Plan filings.

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<sup>15</sup> R.I. Gen. Laws §39-1-27.7

<sup>16</sup> R.I. Gen. Laws §39-1-27.7.

<sup>17</sup> R.I. Gen. Laws §39-1-27.7

<sup>18</sup> As specified by the Standards, every year, the Company will submit to the PUC an Annual Energy Efficiency Program Plan (~~EE Program Annual~~ Plan) and an Annual System Reliability Plan Report (SRP Report) that will detail specific steps towards reaching energy efficiency goals and least cost procurement lower than the cost of supply.

<sup>19</sup> The Company will file the 2018 Annual ~~EE Program~~ Plan and 2018 SRP Report with the PUC by November 1, 2017. The Company will file the 2019 and 2020 Annual ~~EE Program~~ Plans and SRP Reports with the PUC by October 15, 2018 and October 15, 2019, respectively.

## ~~Electric and Natural Gas~~ Energy Efficiency Savings Targets

### Recommended Targets

The EERMC's Recommended Targets for Electric and Natural Gas Energy Efficiency (Targets) serve as a guidepost in developing the Three-Year Plan. The Targets include an assessment of core program base potential, which included a bottoms-up approach to develop an estimate of the savings potential from current programs. The Targets Memo explains that the 2010 KEMA Opportunity Report was not used in the core program base potential because it no longer represented an accurate assessment of current and changing market conditions. The Targets also included an assessment of evolving potential, which highlights the potential impact of codes and standards, new technologies, and program enhancements that may occur over the next few years.

In the short time since the EERMC's Targets were filed, several evaluations have been completed and the lighting market continued to transform. These new evaluations and market trends impact cost-effectiveness for future energy savings. ~~Therefore, in~~ order to adhere to best practices and to comply with the cost-effectiveness provisions of the Standards, these evaluation results are incorporated in this Three-Year Plan to more accurately illustrate future cost-effectiveness.

~~Overall, the evaluation results have the effect of slightly lowering the achievable electric savings targets in this Plan in 2018 and 2019 and the gas targets in 2018, 2019, and 2020 compared to the Commission approved Targets in Docket 4684. Deviations between the Targets and Three Year Plan targets have occurred previously. Specifically, the Commission approved a deviation in the 2012-2014 Three Year Plan in Order Docket 4284 based recent evaluations results and avoided cost information. In the 2012-2014 Plan, the Three Year Plan gas targets were cumulatively 16% lower than the Targets filing.~~

Two recent factors have been incorporated into the illustration of cost-effectiveness: evaluation results and lighting market transformation. Results from evaluations have been incorporated in the illustration of cost-effectiveness and they are more fully described in Appendix 2. The evaluations impact Residential and C&I Upstream Lighting in the electric portfolio, as well as Residential Behavior and Feedback and Codes Compliance in both the gas and electric portfolios. The evaluations will be filed in the 2018 Annual Plan. Additional studies will also be

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completed by the Annual Plan and will be incorporated; they include C&I Free Ridership and Spillover, Residential New Construction User Defined Reference Home, and other studies. It is important to highlight that the application of the C&I Free Ridership and Spillover study to the gas portfolio will likely result in an increase in claimable savings to above 100% of the approved Targets in 2018, 2019, and 2020. This same study will have the opposite effect on the electric portfolio and will likely decrease claimable savings in all three years. These evaluations were not available nor included when setting the Targets as filed in Docket 4684.

The commercial lighting market continued to evolve since the Targets were developed. Customers have taken such great advantage of Upstream Lighting, particularly screw-in LED lamps, that National Grid is seeing market saturation in 2017 causing a reduction in the volume of lamps. National Grid will continue to transform the market by introducing new fixtures and lamps into the Upstream Lighting initiative. These new fixtures and lamps tend to have lower overall savings per unit than screw-in LEDs because they are replacing fluorescents as opposed to incandescent lamps. At the same time, LED efficacy is improving and that may lead to greater savings for LEDs. National Grid has considered this new information in this Plan and will continue to adapt to market conditions in the future.

Overall, the evaluation results and transforming lighting market have the effect of lowering the achievable electric and gas savings compared to the Targets approved in Docket 4684. This Plan illustrates the lower achievable potential for the 2018 electric savings and for the 2018-2020 gas savings in this Plan. -Deviations between the Recommended Targets and Three-Year Plan targets have occurred previously. Specifically, the Commission approved a deviation in the 2012-2014 Three-Year Plan in Order Docket 4284 based recent evaluations results and avoided cost information and the gas targets were cumulatively 16% lower than the Recommended Targets filing.

### **Identifying Opportunities and Data**

The rapid changes in Rhode Island's energy efficiency market, as demonstrated in the changes between the Targets and this Three-Year Plan, have identified a need for additional information to support data-driven development of annual energy savings goals in the future. Additional

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information for a data-driven process includes: proven market technologies, resources to deliver those technologies, documented costs, impacts and benefits, and an implementation strategy.

To facilitate a data-driven process in the future, National Grid and the EERMC will explore options for assessing future potential through an Opportunities Report. An Opportunities Report identifies:

- Technical potential – a complete saturation of all measures deemed technically feasible from an engineering perspective.
- Economic potential – a subset of saturation potential measures that are cost effective.
- Achievable program potential – the cost-effective savings that can occur in response to program activities, including net savings which removes savings that will naturally occur from codes, standard or other market activities.

### Three-Year Plan Targets

The Three-Year Plan Targets, associated benefits, and costs are summarized in the tables below and in the Funding Plan in Attachment 1.

**Table 2. 2018-2020 Three-Year Plan Summary**

<b>Electric Programs</b>	<b>2018</b>	<b>2019*</b>	<b>2020</b>
<b>Savings and Benefits</b>			
Annual MWh Savings	179,968	194,677	189,509
Lifetime MWh Savings	1,712,064	1,904,592	2,160,318
Savings as a Percent of 2015 Sales	2.40%	2.60%	2.53%
Annual Peak kW Savings	29,639	35,188	34,224
Winter Peak kW Savings	29,092	26,517	28,466
Total Benefits (RI Test)	\$ 373,004,694	\$ 438,942,301	\$ 451,782,884
<b>Costs</b>			
Total Funding Required	\$ 115,547,860	\$ 124,932,991	\$ 109,090,025
Cents per lifetime kWh	\$ 0.071	\$ 0.077	\$ 0.062
EE Program Charge per kWh	\$ 0.01090	\$ 0.01390	\$ 0.01193
Benefit Cost Ratio (RI Test)	2.93	2.88	3.23
Participation	TBD	TBD	TBD
*2019 includes 25,539 Annual MWh and correlated costs and benefits, as an adder for future innovation.			

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Natural Gas Programs	2018	2019	2020
Savings and Benefits			
Annual MMBtu Savings	384,486	396,859	405,373
Lifetime MMBtu Savings	4,391,662	4,553,143	4,682,906
Savings as a Percent of 2015 Sales	0.94%	0.97%	0.99%
Total Benefits (RI Test)	\$ 97,702,163	\$ 101,369,221	\$ 104,184,334
Costs			
Total Funding Required	\$ 29,399,869	\$ 30,776,029	\$ 31,846,313
Cost per lifetime MMBtu	\$ 8.47	\$ 8.62	\$ 8.68
Average EE Program Charge per Dth	\$ 0.800	\$ 0.819	\$ 0.841
Residential Charge per Dth	\$ 0.882	\$ 0.903	\$ 0.928
C&I Charge per Dth	\$ 0.721	\$ 0.739	\$ 0.758
Benefit Cost Ratio (RI Test)	2.53	2.49	2.47
Participation	TBD	TBD	TBD

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### Commitment to Evolving Potential

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The Company and our partners remain optimistic and committed to researching, fostering and delivering evolving potential. The Targets Memo defines evolving potential as “factors identified by the Consulting team having possible significant impact on savings potential, but are not currently being offered, or fully deployed through Rhode Island’s energy efficiency programs. These are specific items related to evolving markets, emerging trends and innovation that will impact potential.”

This plan includes an incredible significant number of innovative strategies to offer and fully deploy every identifiable option that will most aggressively deliver energy savings for customers. These strategies are described in the Customer, Pilots and Demonstrations, and Transformation sections of this Plan. Savings from these new, expanding, and enhanced strategies has been reviewed with the Consulting team and illustrated in this Plan.

The Company has demonstrated its commitment to evolving potential by assessing and incorporating the latest recommendations on new initiatives, strategies, and savings. The net effect of evaluation results and transforming lighting market decreases the electric achievable potential for 2018, 2019, and 2020. The Company does not predict innovation or new and different strategies will be available to make up the savings gap in program year 2018 and that is illustrated in this Plan. However, including all identifiable potential was not enough to counter the unanticipated lower savings in 2019. For this reason the Company has included an

adder for future innovation in 2019 to illustrate savings, benefits, and costs. This future innovation is equal to the difference between what is likely achievable for electric savings based on information and data available today and the approved 2019 electric Targets in Docket 4684.

At the present time, the Company does not know which technologies will contribute to these future innovation savings or in which sectors it could occur. The Company and our partners therefore agreed to assume 2019 portfolio level average costs, kW, and benefits per MWh. The following chart identifies the future innovation assumptions included in the 2019 funding plan.

**Table 3: 2019 Adder for Future Innovation**

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Electric Programs	Acheivable Potential	Future Innovation Adder	2019 Funding Plan
Savings and Benefits			
Annual MWh Savings	169,138	25,539	194,677
Lifetime MWh Savings	1,654,735	249,856	1,904,592
Savings as a Percent of 2015 Sal	2.26%	0.34%	2.60%
Annual Peak kW Savings	30,572	4,616	35,188
Total Benefits (RI Test)	\$ 381,359,060	\$ 57,583,241	\$ 438,942,301
Costs			
Implementation Budget	\$ 98,412,706	\$ 14,859,808	\$ 113,272,514
EE Program Charge per kWh	\$ 0.01174	\$ 0.00216	\$ 0.01390

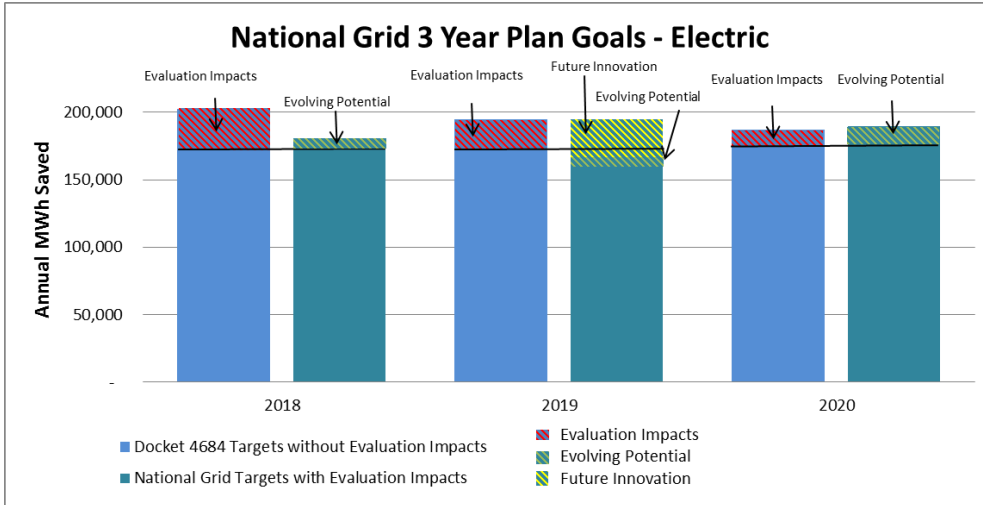
It is important to note that these savings and budgets are purely illustrative. The Company will make every attempt feasible under the construct of Least Cost Procurement to meet the 2019 approved Targets in the most cost-effective means possible.

The following chart illustrates the Company’s commitment to deliver all achievable potential energy savings to customers. The chart illustrates the initial Targets in Docket 4684, National Grid’s proposed ~~the~~ Three-Year Plan Savings with evolving potential ~~in addition~~ added to the Ttargets, and the net effect of incorporating evaluation and lighting transformation. Incremental evolving potential is everything above the solid line in the National Grid Targets with Evaluation Impacts bar.

**Chart 1: Targets in Docket 4684 Compared Three-Year Plan Targets (Electric)**

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## Electric Target Dependencies

~~The targets are ambitious and will be challenging to meet. One challenge in meeting the targets is that they rely on an estimate of savings from evolving technologies and program changes, which are uncertain. Several of these evolving technologies remain elusive such as state law changes that may spur a growth in indoor agriculture or new technological advancements that expand residential behavior savings.~~

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~~However,~~ National Grid is committed to meeting the nation-leading savings targets proposed in this Plan. The Three-Year Plan includes a mix of measures, programs, and services that rely on several factors that can change over the course of the 2018-2020 timeframe. Any ~~future~~ changes to future innovation, state and federal leveraged funding, laws and regulations, industries and technologies, and the timing of larger projects such as combined heat and power (CHP) will impact the Company's ability to meet its savings targets, both positively and negatively. For several of these factors, National Grid has assessed the potential changes in cost-effective resource availability contained in this Plan. To ~~deliver~~ achieve the energy savings targets illustrated in this Plan, the Company is depending on the following to occur:

1. Future innovation – The Company has included an adder of 29,539 Annual MWh of future innovation in program year 2019. It is in addition to what the Company believes is

achievable based on the best information available today. The adder illustrates the approved 2019 electric Targets in Docket 4684.

2. State Funding – The impact of 2018 budget legislation may impact the 2018 goals and it will be addressed in the Annual Plan. Additionally, the State, municipalities, and towns represent one of National Grid’s largest customer segments in Rhode Island and have a great potential for energy savings. National Grid has partnered with the State, municipalities, and towns to deliver enormous energy savings over the next few years and our mutual success relies on continued public funding for the State’s, municipalities, and town’s portion of the investment. An example of this is the RI State Strategic Management Partnership. The Company is forecasting continued public funding to achieve these savings.

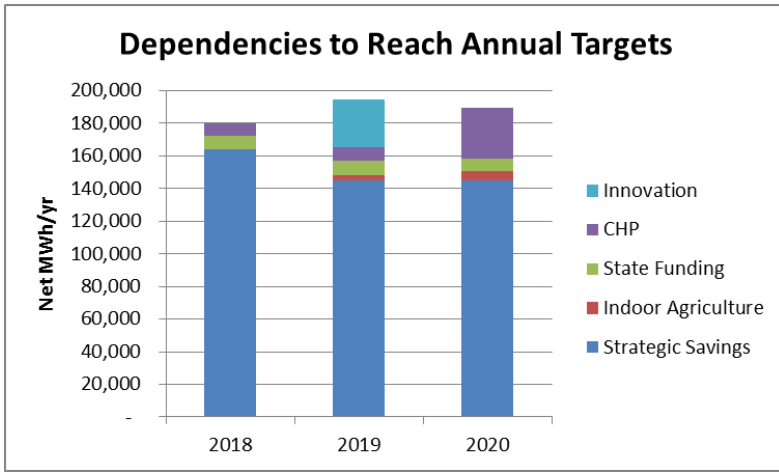
~~1. State of Rhode Island Strategic Energy Management Partnership (SEMP) – the state of Rhode Island fully funds comprehensive retrofits as part of the state budget, and National Grid provides incentives as assistance to complete the retrofits which were agreed to in the SEMP memorandum of understanding.~~

~~2.3 Combined Heat and Power (CHP) – The Company is forecasting nNumerous large customers will invest in CHPs are which will be designed, installed and commissioned according to the preliminary timelines. timeline the Company believes will occur today.~~

~~3.4 Indoor Agriculture – Tthe Company is forecasting that the state of Rhode Island passes will pass legislation that expands the indoor agriculture market in 2019, leading to new efficiency opportunities that do not exist today.~~

The following graph highlights where these energy savings are incorporated into the Three Year Plan illustrations.

Graph 1: Dependencies to Reach Annual Targets



~~These three dependencies are limited to the electric C&I portfolio and National Grid is relying on them to occur to deliver savings for the electric portfolio in this Plan.~~

The following table illustrates ~~a scenario in which these dependencies do not occur.~~ the approximate potential changes to savings, benefits and costs if these dependencies do not occur.

**Table 43. 2018-2020 Scenario Analysis of Energy Saving Dependencies** Potential Changes from Dependencies

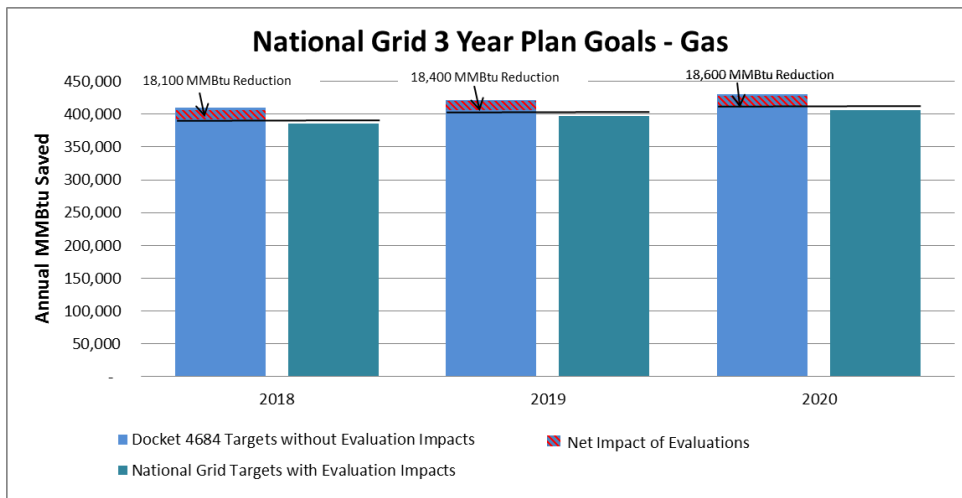
Electric Programs	2018	2019	2020
<b>Savings and Benefits</b>			
Annual MWh Savings	169,495	155,339	158,626
Lifetime MWh Savings	1,661,179	1,501,255	1,605,797
Savings as a Percent of 2015 Sales	2.26%	2.07%	2.12%
Annual Peak kW Savings	27,758	27,658	28,958
Winter Peak kW Savings	26,991	24,100	24,013
Total Benefits (RI Test)	\$ 355,575,298	\$ 348,450,647	\$ 375,310,546
<b>Costs</b>			
Total Funding Required	\$ 112,021,003	\$ 99,117,304	\$ 102,265,675
Cents per lifetime kWh	\$ 0.077	\$ 0.075	\$ 0.073
EE Program Charge per kWh	\$ 0.01028	\$ 0.01041	\$ 0.01155
Benefit Cost Ratio (RI Test)	2.68	2.95	3.09
Participation	TBD	TBD	TBD

## Gas Target Dependencies

National Grid is committed to meeting the nation-leading gas savings targets proposed in this Plan. The Three-Year Plan includes a mix of measures, programs, and services that rely on several factors that can change over the course of the 2018-2020 timeframe.

While this Plan illustrates slightly lower gas savings goals than the Targets, National Grid believes that the 2018 Annual Plan will meet or exceed the targets at no additional cost. That is based on a preliminary C&I Free Ridership and Spillover evaluation which has not been finalized or incorporated in either electric or gas illustrations.

Chart 2: Targets in Docket 4684 Compared Three-Year Plan Targets (Gas)



## Annual Plans

National Grid is getting more information about market conditions, new technologies, more and evaluation more rapidly than in previous years. This is due to rapid transformation of the lighting market as well as increasing evaluation efforts to keep pace with transformation. The Standards lay out a framework by which the latest market and evaluation information will be most accurately incorporated in the Annual Plans. In each Annual Plan, National Grid will continue to review opportunities for additional savings. This occurred in 2016 when the electric annual goal was higher than that illustrated in the Three-Year Plan.

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National Grid will continue its evaluation efforts, which are overseen by the EERMC consultant team. For the illustrative budgets, the electric and gas evaluation budget is approximately 2% of the program budgets. This is in addition to the evaluation results leveraged from the statewide program administrators in Massachusetts.

Annual Plans will vary from this Three-Year Plan based on these dependencies or for other reasons, as has historically occurred in previous Plans. For example, National Grid had higher electric savings goals than Targets for both 2014 and 2016 and lower gas savings than Targets in 2015.

The EERMC's Recommend Targets "acknowledge that while the 2018-2020 electric and natural gas savings targets have been developed using the best information and data available at this time, the annual savings targets should be reviewed each year during the development of the Annual Plan. Following this review, the target should either be confirmed or revised in light of new information. The parties participating in the Annual Plan development should agree that revisions to the annual energy savings targets should be based only on clearly documented changes in cost-effective resource availability." National Grid will develop Annual Plans using the best information and data available.

Additionally, the settling parties of the Annual Plans who collaborated on this Plan recognize that this Plan illustrates savings beyond what National Grid believes to be achievable today. The parties have assured National Grid that they are committed to a data-driven process, as described above, in future Annual Plans whereby goals will be set at the most aggressive and nation-leading levels which are achievable in practice.

### **Benefits of Least Cost Procurement**

Since its implementation, Least Cost Procurement has provided significant benefits to the state of Rhode Island. The 2009-2011, 2012-2014, and 2015-2017 Energy Efficiency Procurement Plans and related Annual ~~EE Program~~ Plans guided the Company to implement cost-effective natural gas and electric energy efficiency programs to homeowners, businesses, municipalities, and non-profits throughout the state. These programs enabled electric and natural gas customers to save money on their energy bills, created jobs and local investment in the Rhode Island economy, and reduced overall electricity and natural gas consumption helping to lower greenhouse gas



emissions. Least Cost Procurement and the success of the [EE Program Annual](#) Plans has made Rhode Island a national leader. In 2014, 2015, and 2016, the American Council for an Energy-Efficient Economy (ACEEE) ranked Rhode Island's utility-sector energy efficiency programs number one in the nation.<sup>20</sup>

As detailed in Table 5, from 2009 to 2016, the Company served 3,119,467 electric program participants<sup>21</sup>, resulting in annual electric savings of 1,243,147 MWh and lifetime savings of 13,406,140 MWh at an average cost of \$0.034 per lifetime kWh saved. The electric savings will avoid over 6.3 million tons of carbon dioxide over the lifetime of the installed efficiency measures.<sup>22</sup> The Company also served 604,329 gas participants<sup>23</sup>, resulting in annual natural gas savings of 2,242,934 MMBtu, and lifetime savings of 30,500,890 MMBtu at an average cost of \$3.44 per lifetime MMBtu. This reduction in electricity and natural gas consumption over the seven year period represents a savings to customers of \$1.9 billion over the lifetime of the installed efficiency measures.<sup>24</sup> In 2017, the Company continued on the trajectory of savings approved for the third Three-Year Plan, and as of this summer, is on course to meet the 2017 electric savings goal of 201,347 annual MWh and 414,606 annual MMBtu.

**Table 5. Summary of 2009-2017 EE Plans**

<sup>20</sup> ACEEE State Energy Efficiency Scorecards for 2014, 2015, 2016 available at: <http://aceee.org/state-policy/scorecard>.

<sup>21</sup> Electric participation is aggregate and includes repeat participation by individual customers. [Annual Reports include a participation analysis that details unique cumulative participation since 2012.](#)

<sup>22</sup> Carbon multiplier of 0.47 tons/MWh obtained from the 2014 ISO New England Electric Generator Air Emissions Report. Available at: [https://www.iso-ne.com/static-assets/documents/2016/01/2014\\_emissions\\_report.pdf](https://www.iso-ne.com/static-assets/documents/2016/01/2014_emissions_report.pdf)

<sup>23</sup> Gas participation is aggregate and includes repeat participation by individual customers. [Annual Reports include a participation analysis that details unique cumulative participation since 2012.](#)

<sup>24</sup> Savings equals the value of electric benefits detailed in Table E-2 and G-2 of the Company's Year End Report filings in years 2009-2016.

Electric Programs	2009 (Actual)	2010 (Actual)	2011 (Actual)	2012 (Actual)	2013 (Actual)	2014 (Actual)	2015 (Actual)	2016 (Actual)	2017 (Planned)
Annual MWh Savings	81,543	81,275	96,009	119,666	159,035	268,468	222,822	214,329	201,347
Lifetime MWh Savings	899,331	929,242	1,076,778	1,288,325	1,612,371	3,278,088	2,287,785	2,034,220	2,065,732
Total Benefits (\$000)	\$123,045	\$128,864	\$151,542	\$140,104	\$192,418	\$314,673	\$312,000	\$234,234	\$247,872
Total Spending* (\$000)	\$29,536	\$29,712	\$39,308	\$50,719	\$72,875	\$80,321	\$82,897	\$74,274	\$90,143
TRC Benefit Cost Ratio**	3.02	3.73	3.35	2.24	2.24	2.69	2.38	2.16	2.00
EE Program Charge/kWh	\$0.0032	\$0.0032	\$0.00526	\$0.00589	\$0.00862	\$0.00911	\$0.00942	\$0.01077	\$0.01124
\$ per lifetime kwh***	\$0.027	\$0.027	\$0.031	\$0.036	\$0.039	\$0.041	\$0.036	\$0.034	\$0.058
Participants	106,525	153,611	254,747	201,351	470,245	551,882	622,822	758,284	569,058
Gas Programs	2009 (Actual)	2010 (Actual)	2011 (Actual)	2012 (Actual)	2013 (Actual)	2014 (Actual)	2015 (Actual)	2016 (Actual)	2017 (Planned)
Annual MMBtu Savings	195,200	140,097	119,613	229,811	311,585	409,029	419,778	417,820	414,606
Lifetime MMBtu Savings	2,553,828	2,155,112	1,623,922	3,300,583	4,377,672	5,958,381	5,249,170	5,282,221	4,945,564
Total Benefits (\$000)	\$26,071	\$26,309	\$18,196	\$36,237	\$44,747	\$50,417	\$54,762	\$51,103	\$66,558
Total Spending* (\$000)	\$6,552	\$5,496	\$4,868	\$13,310	\$19,501	\$20,034	\$20,129	\$23,135	\$28,360
TRC Benefit Cost Ratio**	2.83	2.31	2.21	1.68	1.78	2.41	2.60	1.93	1.63
EE Program Charge/Dth	\$0.150	\$0.150	\$0.150	\$0.384	\$0.414	\$0.600 (Resi)	\$0.781 (Resi)	\$0.748 (Resi)	\$0.888 (Resi)
\$ per lifetime MMBtu***	\$2.44	\$2.33	****\$0.411	\$3.72	\$4.21	\$3.84	\$3.47	\$4.78	\$7.96
Participants	8,339	5,670	3,080	11,681	135,646	143,655	146,098	150,160	112,316

\*Total Spending includes implementation, evaluation, commitments, EERMC, and OER.

\*\*TRC Benefit/Cost Ratio = Benefits/(Implementation Expenses + Customer Contribution + Evaluation Cost + Shareholder Incentives).

\*\*\*Implementation costs/Lifetime savings

\*\*\*\* December 2011 PUC voted to increase gas EE Program charge to \$0.411/Dth.

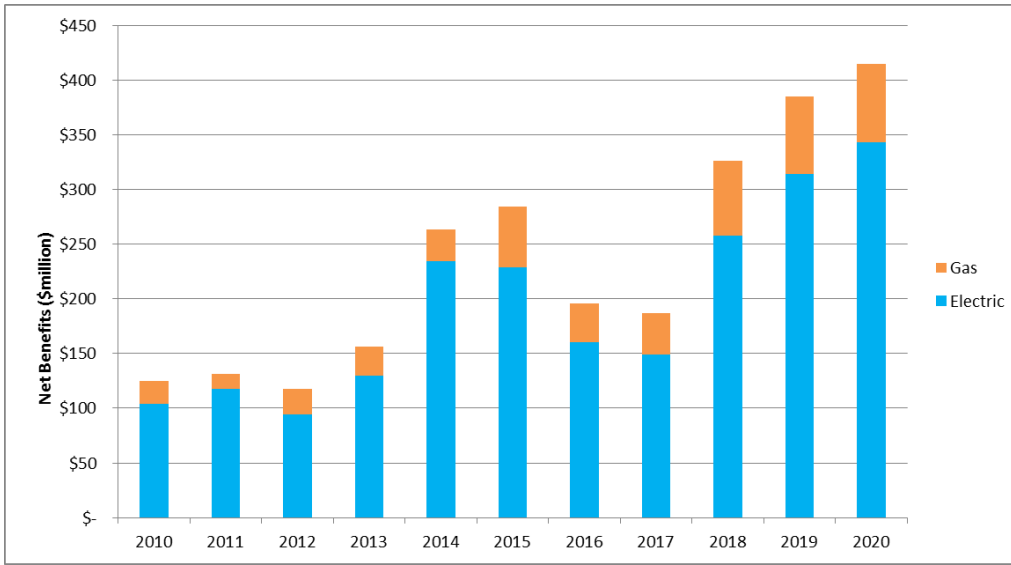
Actual values are from filed Annual Reports. 2017 Value from 2017 Annual Plan.

The electric and natural gas efficiency investments made between 2009 and 2016 also created a positive impact on the Rhode Island economy. Investments made in energy efficiency under Least Cost Procurement are expected to add over \$369 million to Rhode Island's Gross State Product and create more than 5,420 job-years of employment.<sup>25</sup>

As the energy savings requirements of Least Cost Procurement grew over the past nine years, so have the benefits. Chart 3 details the total benefits of energy efficiency after accounting for program costs. Total benefits include the avoided cost of supply, avoided cost of transmission and distribution, and non-electric benefits such as water and maintenance savings. Starting in program year 2018, carbon emission reduction benefits and economic benefits were included per the revised Standards.

### Chart 3. Net Benefits of Least Cost Procurement

<sup>25</sup> Macroeconomic multipliers for the economic growth and job creation benefits of investing in cost-effective energy efficiency from National Grid's 2014 Regional Economic Model (REMI) Analysis as presented by the Company to the Collaborative on May 29, 2014. To maintain consistency with RI Test economic benefits multiplier, the Company is only including construction phase impacts to GSP and job-years to account for only direct and indirect impacts.



The Company also provided energy efficiency services to delivered fuel heating customers through the income eligible programs. As detailed in Table 5, market rate homeowners with delivered fuel as a primary heating source, were also eligible for energy efficiency services from 2009-2012 as a result of American Reinvestment and Recovery Act funding, in 2013 from electric EE Program Charge funds, and in 2014-2017 from Regional Greenhouse Gas Initiative funds and electric EE Program Charge funds.

**Table 6. Historical and Planned Market Rate Energy Efficiency Services in Delivered Fuels Sector**

Program Year	Oil Savings (Annual MMBtu)	Funding Amount	Funding Source
2010	16,046.6	\$910,587	ARRA
2011	30,573.3	\$1,707,780	ARRA
2012	14,482.9	\$879,220	ARRA & EE Program Charge
2013	15,036.8	\$795,463	EE Program Charge
2014	29,876.5	\$1,370,849	RGGI & EE Program Charge
2015	36,985.1	\$4,510,657	RGGI & EE Program Charge
2016	35,326.4	\$4,214,972	RGGI & EE Program Charge
2017	28,444.6	\$5,030,000	RGGI & EE Program Charge
2018	52,618.4	\$10,134,000	EE Program Charge

2019	55,186.7	\$10,615,700	EE Program Charge
2020	57,849.0	\$11,106,985	EE Program Charge

Approximately one-third of Rhode Island homes heat with delivered fuels.<sup>26</sup> These homes still need the same energy efficiency solutions as those served by electric and natural gas, and the Company is well-positioned to serve the households in its service territory. Therefore National Grid proposes to deliver additional oil saving in 2018-2020 as detailed in Table 6 above through the [electric](#) EE Program Charge. Details of these offerings are provided in the residential section of this Plan.

It is clear that the benefits of Least Cost Procurement far outweigh the costs, providing significant cost-savings to Rhode Island electric and natural gas customers. The Company appreciates the opportunity to continue working with the PUC, the Collaborative, and the EERMC to deliver cost-effective energy savings over the next three-years and meet the growing customer demand for energy efficiency programs and services.

### Cost Effectiveness

In previous Three-Year Plans and ~~Annual EE Program~~ Plans, the Company assessed the cost-effectiveness of measures, programs, and portfolios according to the Total Resource Cost (TRC) Test. As previously noted, the revised Standards set forth new requirements for a cost-effectiveness test called the Rhode Island Benefit Cost Test (RI Test), which “more fully reflects the policy objectives of the State with regard to energy, its costs, benefits, and environmental and societal impacts.”<sup>27</sup> The change to the RI Test is a positive development for energy efficiency. Accounting for all costs and benefits associated with energy efficiency provides for a more holistic view of its impacts to electric and gas customers, the environment, and the economy.

As prescribed by the Standards, the Company is directed to consult with the EERMC and propose specific benefits and costs to be included in the RI Test. The Standards indicate that “these benefits should include resource impacts, non-energy impacts, distribution system impacts, economic development impacts, and the value of greenhouse gas reductions, as described below. The accrual of specific non-energy impacts to only certain programs or

<sup>26</sup> Rhode Island Thermal Working Group Report, July 2015.

<sup>27</sup> Least Cost Procurement Standards (Standards) approved at the Open Meeting on April 27, 2017 in Docket 4684.

technologies, such as income-eligible programs or combined heat and power, may be considered.”<sup>28</sup>

In accordance with the Standards, the Company collaborated with the Division’s consultants, EERMC consultants, and the Collaborative to incorporate new benefits and costs into the RI Test. This working group determined that it was prudent to take an incremental approach to adding new factors. The group identified non-embedded greenhouse gas reductions (i.e., the value of reducing greenhouse gas emissions that is not already included in the baseline avoided costs) and economic development impacts as an appropriate starting point in this effort. These two factors already have existing, well-vetted values that can be easily incorporated in the cost-effectiveness screening, as detailed below, and will be used in the 2018 Annual Plan. Over the Three-Year Plan timeline the Company will continue to work with stakeholders to refine these new factors and propose additional costs and benefits as deemed appropriate by the RI Test and the anticipated completion of the Docket 4600 Benefit-Cost Framework.<sup>29</sup>

All other aspects of cost-effectiveness screening will continue to follow the methodology defined in Attachment 4 of the 2017 EE Plan as approved in Docket No. 4654. As part of its 2018 EE Plan, the Company will update Attachment 4 to reflect the changes made to comply with the RI Test.

### **Greenhouse Gas Reduction Values**

In previous Plans ~~and annual EE Program Plans~~, the Company incorporated the costs of CO<sub>2</sub> mitigation imposed and projected to be imposed by the Regional Greenhouse Gas Initiative (RGGI) and the costs associated with reasonably anticipated future federal greenhouse gas regulations in the avoided costs used in the TRC Test.

In accordance with Section 1.2(B)(iii) of the Standards and in consultation with the Division’s consultants, EERMC consultants, and the Collaborative, the RI Test now includes the value of greenhouse gas reductions not previously included in avoided energy costs. The value of these

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<sup>28</sup> Standards Section 1.2(B)

<sup>29</sup> At the time of this filing, the Benefit-Cost Framework developed as part of Docket 4600 is incomplete due to missing methodologies for quantifying costs and benefits for new principles. At an open meeting on May 4, 2017, the PUC directed the Division to develop methodologies needed to populate the missing information in the Benefit-Cost Framework, and submit these proposed methodologies to the PUC as part of Docket 4600.

“non-embedded” greenhouse gas reductions was derived from the Avoided Energy Supply Costs in New England: 2015 Report (AESC Report).<sup>30</sup>

The Resilient Rhode Island Act sets forth a CO<sub>2</sub> emissions reduction goal of 80% below 1990 levels by 2050.<sup>31</sup> The AESC Report determines that the marginal cost of stabilizing CO<sub>2</sub> emissions at 80% below 1990 levels by 2050 will be \$100 per short ton. The report finds this cost is a “reasonable estimate of the societal cost of carbon emissions, and hence as the long-term value of the cost of reductions in carbon emissions required to achieve those targets”.<sup>32</sup> The costs of compliance with the Regional Greenhouse Gas Initiative (RGGI) and reasonably anticipated future federal regulations are one component of the \$100 per short ton value. These costs are already included or “embedded” in the projected electric energy market prices used in the TRC Test. Therefore, the difference between the \$100 per short ton societal cost and the regulatory compliance costs already embedded in the projected energy market prices represents the value of carbon emissions not included in the existing TRC Test. . The Company added the non-embedded CO<sub>2</sub> values from the following tables in the 2015 AESC report to the avoided costs used in the RI Test cost-effectiveness screening: Exhibit 4-5 for electric savings, Exhibit 4-14 for gas savings, and Exhibit 4-18 for oil savings (included in Attachment 3)..

The next revision to the AESC Report is due in 2018. The non-embedded value for New England’s CO<sub>2</sub> emissions will be updated as part of this study and will be incorporated in the 2019 EE Plan.

### **Economic Benefits**

In previous Plans ~~and annual EE Program Plans~~, the Company applied an economic development impact multiplier to account for benefits to state gross domestic product (GDP) to its cost-effectiveness screening of combined heat and power (CHP) projects. In accordance with Section 1.2(B)(i) of the Standards and in consultation with the Division consultants, EERMC consultants, and the Collaborative, the RI Test now includes the application of multipliers for economic development impacts to all measures.

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<sup>30</sup> Tabors, Caramanis, and Rudkevich (TCR), Avoided Energy Supply Costs in New England: 2015 Report, April 3, 2015.

<sup>31</sup> Rhode Island General Laws §42-6.2

<sup>32</sup> AESC Report page 4-29.

The original CHP macroeconomic multipliers for the economic growth and job creation benefits of investing in cost-effective energy efficiency came from a recent study “Macroeconomic Impacts of Rhode Island Energy Efficiency Investments: REMI Analysis of National Grid’s Energy Efficiency Programs”, National Grid Customer Department, November, 2014. Though not applied to cost-effectiveness previously, this REMI Analysis provided macroeconomic multipliers for energy efficiency measures in addition to CHP. The Company took this opportunity to reexamine the energy efficiency and CHP multipliers within the study and refine them for the RI Test.

The multipliers from the REMI analysis take into account how the energy efficiency programs impact Rhode Island’s economy in three ways:

1. Program and participant spending represents a direct investment in Rhode Island energy efficiency infrastructure, creating jobs (construction impacts).
2. Bill savings to participants have positive economic impacts over the life of the energy efficiency measures, resulting in more spending on goods and services.
3. Rate increases and participant contributions to the cost of installing energy efficiency measures create short-term costs and reduce spending on goods and services.

After review of the REMI analysis and current benefit-cost model, it is likely that the benefit of bill savings to customers is already accounted for in the TRC Test since the value of all energy savings is included as a monetary benefit. In addition, the impact of customer costs is also already included as a negative dollar benefit. Therefore, to ensure no double counting of costs and benefits, it was determined that only the multipliers associated with construction impacts should be included in the RI Test for both energy efficiency and CHP measures.

It is widely acknowledged that increased spending from installing energy efficiency measures creates jobs in the local economy. It is also evident after a review of the benefit-cost model that these benefits were not yet accounted for outside of CHP. The Company, therefore, will apply the multipliers below to program and participant spending in its benefit-cost model. These multipliers are derived from Table 2 of the REMI analysis report.

GDP Multipliers for Construction Impacts		GDP/\$ Spending	
		Electric	Natural Gas
Residential	Program Spending	0.71	0.71
	Participant Spending	0.75	0.75
Commercial	Program Spending	0.56	0.56
	Participant Spending	0.58	0.58

To maintain consistency across all energy efficiency measures in the RI Test, the Company also modified the CHP multiplier to only include GDP increases related to construction impacts. This changes the CHP multiplier from \$2.73 per dollar spent to \$0.80 per dollar spent. The below CHP multiplier is derived from Table 6 of the REMI analysis report.

CHP Project Economic Multipliers	GDP/\$ Spending
Construction Spending	0.8

The Company finds that this application is a suitable first step in incorporating economic development impacts to the RI Test. The Company plans to commission an updated economic impact study during the 2018 program year to refine these assumptions for its 2019 EE Plan.

### Discount Rate

As prescribed by the Standards, all values in the Plan and the benefit-cost model are stated in present value terms, “using a discount rate that appropriately reflects the risks of the investment of customer funds in energy efficiency; in other words, a low-risk discount rate which would indicate that energy efficiency is a low-risk resource in terms of cost of capital risk, project risk, and portfolio risk”.<sup>33</sup>

Specifically for the 2018-2020 Plan, the Company used a discount rate equal to the twelve-month average of the historic yields from a ten-year United States Treasury note, using the 2016 calendar year to determine the twelve-month average.

The discount rate will be reviewed and updated for each ~~EE Program Annual~~ Plan, as appropriate, to ensure that the applied discount rate is based on the most recent information available.

<sup>33</sup> Energy Efficiency Procurement Standards, Section 1.2.A.ii.c.



### Comparison of TRC Test to RI Test

In accordance with Section 1.2(B)(vi) of the Standards, the Company provides the benefits and cost-effectiveness ratios for the Three-Year Plan using the TRC Test and the new RI Test in the Energy Efficiency Funding Plans included in Attachment 1.

### Energy Efficiency Priorities

National Grid has identified the four following priorities for the programs identified within the Three-Year Plan. All of the strategies, programs and initiatives in this Plan contribute to achieving a core priority of reducing energy through efficiency. In addition, each of the Company's strategies, programs and initiatives are focused on meeting the needs of customers, the environment, and preparing for the future. Below are the four key priorities the Company has identified for the 2018 – 2020 Plan.

1. **Customers** - Deliver comprehensive services encompassing all market segments and customers. Such services will enable customers to control their energy use, reduce their bills, and help support their financial well-being.
2. **Least Cost** - Deliver energy efficiency services as cost-effectively as possible through optimizing finance and promoting upstream initiatives. Continuing to deliver cost-effective energy savings under Least Cost Procurement will create cost savings to all customers, while creating economic benefits that create and maintain local jobs and businesses.
3. **Environment** - Provide solutions that maximize greenhouse gas emission reductions and contribute to Rhode Island's clean energy policy goals, including the Resilient Rhode Island Act.
4. **Future** – Innovate to capture savings from new technologies and strategies to position energy efficiency programs for the future including the integration of energy efficiency with demand response, renewable energy, and smart grid technologies. This includes incorporating outcomes from the Rhode Island Power Sector Transformation Initiative and Docket 4600.

National Grid's experience with delivering energy efficiency in Rhode Island has provided a foundation to achieve the ambitious savings and benefits in this Plan. As an energy provider that

serves 99% of Rhode Island homes and businesses, National Grid is in a unique position to leverage its existing infrastructure while providing programs tailored specifically to Rhode Islanders' needs. Over the next three-years, the Company will focus on saving energy for customers, providing benefits and valuable services to customers, reducing carbon emissions by helping customers save energy, and continuing to expand programs and policies focused on integrating energy efficiency and clean energy.

A detailed annual program implementation plan and detailed program budget will be developed each year and submitted to the PUC for review and consideration, beginning on November 1, 2017 and on October 15 in each of the two years thereafter.

### **Residential Customers**

The success of Rhode Island's energy efficiency efforts is well recognized through awards presented by national organizations such as American Council for an Energy-Efficient Economy (ACEEE), the United States Environmental Protection Agency (EPA) and Department of Energy (DOE). One aspect of being in the market for several decades and being a leader in the nation for energy efficiency is the positive result seen through market transformation, such as the residential lighting market. The combination of market acceptance of light emitting diode (LED) technology, reduction in LED manufacturing costs, policies that promote the use of efficient LEDs, and strong energy efficiency programs have created a market change far faster than anticipated through the rapid adoption of energy efficient lighting. This change in the marketplace, while reducing opportunities for efficiency savings through lighting, presents opportunities to focus on other energy saving technologies and program design models to bring energy efficiency solutions to consumers.

During the next three years, the Company will promote services that are accessible to all customers. The behavior programs, which began four years ago through the Home Energy Report [program](#), brought energy use and savings to a new level of prominence and understanding for Rhode Islander electric and gas customers. Behavior programs will continue to customize and target customer segments to keep consumers engaged while making the information presented meaningful and actionable. To provide services while optimizing investments, the Company will streamline incentives for customers to make the transactional processes less cumbersome

through models such as upstream incentives where the incentive is embedded into the price and the incentive form and process are eliminated. The Company would also like to present alternative financing options to the consumer.

Residential programs will support Rhode Island's greenhouse gas goals and the environment by enhancing energy efficiency for delivered fuel customers and targeting energy savings in the heating sector. In looking to the future, residential customers will be able to access more information about their energy usage and have an array of products offered for a connected home so control over energy use is available whether the consumer is home or away. Further descriptions of future opportunities are described in the pilots and demonstration section of this Plan.

#### **Residential Finance – Heat Loan & New Products**

One time, upfront costs for investments in energy efficiency solutions can be viewed as a barrier for customers interested in participating in energy efficiency. By providing customers with residential financing options, the Company offers a solution to this barrier and spreads the investment over a longer period of time. This makes energy efficiency more accessible to a larger number of customers and has allowed customers to take advantage of more energy savings solutions. To date, the only specific energy efficiency financing tool has been the HEAT loan, which provides 0% financing for weatherization and efficient heating systems. This offering has been serving customers for six years and has taken \$4.5 million and leveraged this funding to nearly \$27 million in private capital. The Company anticipates that the HEAT loan will continue to be a strategic solution during the next three years and eagerly anticipates the introduction of other consumer financing options such as the Rhode Island Infrastructure Bank's residential offering which is scheduled to be offered in early 2018 and will also be promoted through the energy efficiency programs. Over the next three years, the Company will look to optimize investments in financing by continually improving the offering and reducing costs so that more customers can be served.

Looking forward, the Company recognizes the importance of supporting moderate income customers and making financing accessible to these customers. National Grid will be enhancing the moderate income HEAT loan, currently offered through the Capital Good Fund, by providing the capital for a revolving loan fund. Currently the Capital Good Fund has limited access to

costly capital. The seed funding to Capital Good Fund would remove some of that capital burden while also allowing them to serve nearly three times more moderate income customers annually.

Additionally, the Company will continue to investigate whether it is feasible to offer an on-bill recovery mechanism for residential customers. It will be important for the Company to work with customers and stakeholders, such as Rhode Island Housing who plays a significant role in the state's income eligible, multi-family and residential markets, to ensure that customer needs are being addressed in a cost efficient manner.

### **Lighting Market Transformation**

Residential lighting market transformation demonstrates the potential for all energy efficiency technologies when a new technology meets or exceeds existing product performance at a reasonable cost and the marketplace embraces the technology. Today a LED lamp uses 80% less energy than an incandescent bulb from a decade ago and shelf pricing continues to drop. But to arrive at this market transformation, there was decade and a half of energy efficiency programs promoting compact fluorescent bulbs (CFL) and preparing the marketplace for an efficient replacement. While the CFL technology was not universally embraced, due to performance limitations that prevented true market transformation, it was an outstanding educational tool for communicating the benefits of efficiency. When the LED emerged and became reasonably priced through rapid demand and market adoption, the foundation had been established for complete market transformation.

By 2020, the requirements for lighting performance, at 45 lumens per watt, will make most of the efficient lighting currently being promoted the default standard product. Therefore, savings from standard bulbs will be drastically reduced through traditional, mass market channels. The program will be challenged to ensure that the hard-to-reach marketplace has access to – and is aware of – energy efficient options. Savings opportunities may still persist through direct install channels where existing technology can be noted before an efficient replacement is installed. The Company will also support specialty lighting products where an efficient lighting alternative may still present savings. Overall the program will look to reduce costs while continuing to support access to all customers.

## Home Energy Assessment Transformation

Home energy assessments are solutions where an energy specialist visits a customer's home and educates the resident on how their home uses energy while providing personalized recommendations to reduce energy, save money, and make the home more comfortable. The visit may also include upgrades of lighting, faucet and shower aerators, advanced power strips, programmable thermostats, and pipe insulation as needed. At the end of the assessment, an Energy Action Plan is provided for improvements that remove the leaks and further insulate the home. The homeowner can then decide whether they are interested in continuing with the next phase of energy solutions. There are three programs that provide Home Energy Assessments: EnergyWise for single family market rate customers, Income Eligible Services for single family income eligible customers, and Multifamily Services for customers who live in buildings with five or more units. From 2018-2020 the same changes that will transform the lighting market will also impact the home energy assessment arena where lighting savings have covered the cost of the initial visit. In preparation for the changes, the program will be supporting and observing demonstrations that could be incorporated for enhanced savings. These demonstrations include home energy monitoring where different end use loads can be observed and potentially be used as an engagement opportunity for behavior change. Another area being tested is with wifi thermostats where seasonal temperature optimization will look to capture energy savings. Additionally, behind-the-meter battery storage and aspects for savings will also be considered as a future opportunity. Best practices for program deployment will also be researched as the program adapts and seeks to identify cost savings opportunities.

## **Residential New Construction and Market Transformation**

As Rhode Island adopts the new International Energy Conservation Code (IECC) energy codes for Residential New Construction Program (RNC), the energy savings needed to warrant energy efficiency incentives diminishes. As such, the Company is considering a re-design of the RNC program over the next three years to optimize the available savings and will push toward a zero energy home that will also support the Zero Energy Task Force Recommendations<sup>34</sup> and the Power Sector Transformation efforts. To support the development of a program re-design, the Company plans the following developments over the next three years:

<sup>34</sup> [https://www.nationalgridus.com/media/pronet/ri-ee-task-force/cm6459-ri-zne-white-paper-12\\_16.pdf](https://www.nationalgridus.com/media/pronet/ri-ee-task-force/cm6459-ri-zne-white-paper-12_16.pdf)

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- In 2018, the Company will adopt a new User Defined Reference Home (UDRH) baseline that will reflect the current energy efficiency of new construction single-family homes in Rhode Island. This new baseline will reduce the amount of savings available and will begin to inform the Company on how to modify the RNC program to maintain cost-effectiveness.
- The Company will benefit from a 2017 Participation Study to provide direction on market sectors that remain favorable for the program.
- Based on both the new UDRH and Participation Study, the Company plans to develop a re-design of the RNC program in 2018. The program may include packages of offerings in order to maximize savings, smart home technologies to engage the customer in their energy management or move to a zero energy home model.
- On-going review of the impacts of the RNC market transformation will be conducted annually to determine if, and when, to sun-set the program.

#### **ENERGY STAR's Retail Products Platform**

The Company will investigate supporting ENERGY STAR's Retail Products Platform, which engages national retailers to stock more efficient consumer products through the support of energy efficiency providers. By working nationally, the Rhode Island energy efficiency program leverages national scale allowing for a reduced investment to influence retailer stocking of efficient consumer appliances.

#### **Upstream HVAC**

In an effort to reach customers in new ways and simplify processes to encourage greater customer participation, high-efficiency electric and gas HVAC equipment will be assessed for the potential effectiveness of an upstream (to the manufacturer) or midstream (distributors and contractors) delivery model. Through initial assessment of equipment for transferring into an up/midstream model, the Company has identified heat pump water heaters as a viable option for 2018. The outcome of this initial launch will inform the process for delivering future HVAC equipment up/midstream. The potential shift in where the energy efficiency incentive is offered has been shown to increase sales which result in more savings based on quantity. Importantly, increased sales results in increased incentive costs, which could cause a dramatic shift in program budgets. Offering a mid or upstream – incentive simplifies residential customer

participation because the high efficiency product is already discounted and the customer is not required to submit rebate forms or wait for rebate checks.

### **Home Energy Reports and Behavioral Savings Opportunities**

In the next three years, the Company will continue the Home Energy Reports program by educating customers about their energy use as compared to similar households through print and electronic reports delivered throughout the year. The program has evolved since 2013 from offering mailed insights to now being integrated into the Company's website with online assessment tools, High Temperature Alerts, Non-Advanced Metering Infrastructure (AMI) High Usage Alerts, and segmentation to target different populations. In addition, in the upcoming years, the Company will expand behavioral energy efficiency program efforts as follows:

- Assuming successful results from the 2017 Non-AMI High Use Alert pilot, the Company will continue proactive notifications to alert customers where they can take actions before they receive a high bill. As new technologies come online, this approach will provide customers with even more control over their energy consumption.
- The Company will make broader use of segmentation over the next three years to ensure Rhode Islanders, such as income eligible customers, are fully aware of programs that will specifically benefit them. For example, the Company will make use of the information customers provide during the online assessment process and notify customers of upgrades that would be relevant to their specific situation (e.g. Promoting heat pumps to customers heating with electricity).
- Working with the Company's New Energy Solutions team, the program will consider how home energy disaggregation products and home automation tools will affect how customers interact with energy and any associated behavioral savings. Further, the Company will utilize smart thermostats in more capacities as newly integrated technologies come online and thermostats become even "smarter".

### **Multifamily**

Applying the learnings of a deep review of the Company's Income Eligible and Market Rate Multifamily programs, over the next three years, the Company will focus on offering more technologies, greater comprehensiveness, and more customer friendly approaches in the program

while serving a broader range of facilities than have been traditionally served. While the prevalence of LED lighting in multifamily applications continues to grow, the Company remains committed to aggressively seeking avenues for continued energy savings. For example, advancing ductless mini-split technology throughout electrically heated condominiums may offer considerable savings for these customers. As these new technologies are more expensive than traditional direct-install measures, the company will increase the funds allotted for the multi-family sector HEAT loan to assist in overcoming any copayments remaining after applied incentives.

- *Increasing technologies and innovative approaches:* This may include installing new mechanical systems (i.e. In-unit and Central systems), smart thermostats, or conducting education and training to change how customers in these facilities interact with their newly installed measures. Especially relevant in the case of smart thermostats and mini-split technologies, customers will benefit from training on how to use these products to ensure a reduction and not an increase in energy usage. Where the installation of new mechanical equipment is not cost effective, the Company may offer monitoring and optimization technologies to offer the customer increased savings.
- *Customer-centric recruitment process:* Giving customers the opportunity to participate is the first and most important step on the road to energy savings. By offering customized online invitations and sign-up processes that are site-specific, customers will be able to take part in the program in a more convenient manner than ever before.
- *Commitment to serving scattered-sites:* As the program has served many of the state's largest multi-family facilities, the Company will commit to continuing to identify and target Rhode Island's smaller, scattered-sites.
- *Building Benchmarking Data:* As noted more extensively in the Commercial and Industrial section of the text, the Company for 2018-2020 will be offering automated uploads of aggregate energy usage to the US Environmental Protection

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Agency's Portfolio Manager. This will benefit multifamily building owners and operators by allowing them to track energy use across their portfolio of buildings.

### **Income Eligible Customers**

National Grid works to ensure that all customers in the state of Rhode Island benefit from its Energy Efficiency programs and initiatives. Equity is an essential component of this Plan, and the below section outlines the Company's initiatives and efforts to assist customers who may not have as easy access to the cost savings associated with energy efficiency.

### **Moderate and Income Eligible Customers**

The moderate and income eligible customer groups are of particular interest to the Company to ensure that customers with constrained means are benefitting from their contributions to the energy efficiency charge. The income eligible community is defined as households with an income below 60% of the area median income (AMI) which makes them eligible to be on the Company's A-60 electric rate. A moderate income residential customer currently has a working definition as having a household with an income below 100% of the area median income (AMI) but above the income eligible rate class of 60% AMI.

The Company is currently analyzing past customer participation in the energy efficiency programs to best determine where there may be opportunities to further promote energy efficiency offerings. Both the moderate income and income eligible customer groups will be evaluated to understand if they are being served in proportion to their contributions to the energy efficiency charge. The study results will be used to develop a strategy for future energy efficiency programs to effectively serve any under-represented groups.

The Company is also committed to streamlining income eligible services and is working to ensure that customers who are newly added to the income eligible rate (A-60) are connected directly to income eligible services (IES) for energy efficiency. This process is expected to increase new participants in IES. As mentioned in the Residential Finance – Heat Loan & New Products section of this Plan, financing provided through the Capital Good Fund will also support moderate income customers when the time comes to invest in efficiency.

### **Serving More of the Income Eligible Market**

National Grid currently has approximately 35,000 customers on the A-60 discount rate and out of that number approximately 13,500 have participated in the energy efficiency programs. The Company is aware that an additional 60,000 customers in Rhode Island could be eligible for the discount rate and is currently developing strategies to address a three-pronged approach to supporting these customers with arrears management, enrolling these customers onto the discount rate and enrolling them into the energy efficiency program. Strategies may include targeted marketing, community expos, educational seminars, alerts, messaging and enhanced collaboration with program stakeholders including the RI Department of Human Services (DHS) and Rhode Island Housing (RIH). In summer to fall of 2017, the Company will be engaging with stakeholders and subject matter experts regarding opportunities to better serve the state's income eligible population.

The high level objective will be to provide a seamless, time-efficient delivery of all services to improve the financial stability of the customer. As the development of this effort continues to evolve, the Company will develop strategies to accommodate the potential exponential increase of new customers.

### **Commercial and Industrial Customers**

National Grid's Commercial and Industrial (C&I) programs, and the outreach and marketing that support them, are organized according to the way the commercial built environment is organized, – i.e., the existing built environment and the new environment being built and renovated. The Company has two umbrella programs that serve these markets, Retrofit and New Construction. Building owners, operators occupants, and tenants are part of the existing built (retrofit) environment and developers, owners, architects, engineers, equipment specifiers, equipment suppliers, and many others, as part of the new construction environment. While these programs have been highly successful in delivering energy efficiency to these environments, the Company strives to improve program design and delivery, and engage with customers and market actors with new offerings and innovative technologies to further increase energy efficiency in the built environment.

The Commercial and Industrial sector has seen a transformation in the lighting market in the past few years due to a combination of LED technology, reduction in LED manufacturing costs, and strong energy efficiency programs and policies. This market transformation is a success story for energy efficiency in Rhode Island, but it also means that the programs will see diminishing savings from lighting in the next three years. Additionally, as the next cycle of building energy codes and appliance standards come into effect, savings from new construction and major renovations projects will also diminish. These shifts in the marketplace present challenges as well as opportunities in the next three years. The Company is committed to the process of program improvement, promoting new technologies, new delivery models to address the changing market and economic conditions on ongoing basics.

The Company's focus for this Three-Year Plan will be to innovate for tomorrow, with new strategies and solutions such as: demand response, integrating renewables and storage with pilots and demonstrations, creating deeper more comprehensive savings and provide solutions such as finance that mitigate first cost barriers to achieve deeper energy efficiency savings and performance in buildings. The Company will collaborate with stakeholders like the Rhode Island Infrastructure Bank who sponsor the C-PACE program to leverage all available finance for energy efficiency.

The Company will continue to engage with customers who have been relatively under served and provide new offerings and technologies to further increase efficiency and performance of buildings for customers that have been served in the past. In that context the sections below provide strategic descriptions of a number of new initiatives and improvements to existing initiatives that the Company plans to implement in the next three years. The level of detail varies as some elements are more conceptual in nature at this juncture. Full detail will be provided in subsequent Annual Plans.

### **Retro-Commissioning**

Retro-Commissioning (RCx) is defined as “the process of applying rigorous testing, verification and upgrade protocol to an existing building control system to identify and correct operational inefficiencies”<sup>35</sup>. RCx can be coupled with a monitoring system which uses metering and software to provide ongoing energy performance feedback directly to building operators and or

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<sup>35</sup> *Retro-commissioning Best Practice Study*, Revised Draft for C&IMC Review, MA, May 22, 2014

the Company. The RCx initiative was started in 2017, and the Company plans to bring it to scale over the next three years. The Company had three projects in 2017 that were successful and it believes that expanding this program will help target customers who may not have otherwise participated in energy efficiency.

RCx Programs target both electric and gas saving measures and help commercial and industrial customers improve performance and reduce energy consumption of their facilities through the systematic evaluation of existing building systems and may include continuous commissioning. RCx recommendations from a study are usually no-cost and low-cost HVAC measures that can be implemented in the course of normal maintenance or enhancements to building automation systems, eliminating energy waste. In addition to energy benefits, RCx results in increased comfort for occupants, building information for owners and operators that allow building operators to meet occupant needs for specialized systems, safety, security, and improved long-term capital improvement plans.

Over the next three years, the initiative will target commercial office space, healthcare, hospitality, and higher education. As part of this initiative, the Company will identify common measures in these sectors and develop savings calculation approaches, so that future applications can be streamlined. While RCx is an area of significant opportunity, and will allow the Company to cost effectively capture benefits, there is a lack of vendors in the market who specialize in RCx services. The Company will investigate and determine ways to develop the vendor services market and test various TA vendors as well as turnkey RCx service providers. More SEMP's and other longer-term pipeline building with C&I customers.

### **Strategic Energy Management Plan**

National Grid's Strategic Energy Management Plan (SEMP) is an initiative between National Grid and its largest C&I customers to help establish and achieve energy management goals over multiple years. The Memorandum of Understanding (MOU) is an agreement between customers and the Company that presents a multi-year roadmap that outlines energy efficiency savings and incentives. These savings and incentives allow the customer to make smart financial and energy decisions that align with the customer's goals and priorities. The road map and planning allows for deeper and more comprehensive energy efficiency savings.

In the next three years, the Company plans to further develop the SEMP initiative to include three tiers of offerings to customers, including financial tiers and service offerings tiers, such that customers receive products and services customized to meet their needs. Tier 1 will be basic services that establish a governance structure and help the customer coordinate gross annual energy savings. Tier 2 will include the basic service available in Tier 1 plus Technical Assistance (TA) services, Tier 3 will include Tier 2 services plus provide project management services to the customer. National Grid will also pilot Non-EE Solutions within its SEMP initiative, with individual customers who are interested in demonstrating and or adopting renewables, storage, Electric Vehicles FV, and distributed energy resources and -technologies. National Grid will also explore service agreements and business models that will allow the Company to offer other energy solutions as part SEMP initiative. The Company will look to engage with SEMP initiatives with cities, K-12 schools and industrial customers in addition to the sectors it currently serves (colleges, universities, state facilities, and large hospitals).

### **Strategic Energy Management**

Strategic Energy Management (SEM) is an evolving new concept that can encompass a number of interconnected and mutually reinforcing activities. This initiative is a continuous improvement approach to reducing energy intensity characterized by demonstrated customer commitment, planning and implementation, and systematic measurement. SEM focuses on changes to business practices, affecting organizational culture, and reducing waste. Within Rhode Island's energy efficiency programs, activities that contribute to SEM include, retro-commissioning, trainings for building operators, owners and managers (BOC Training) and customized process and behavioral approaches within the broader context of MOU/SEMPs. Over the next three years the Company will examine pilots and demonstrations in neighboring states and in the country to determine best practices that can be used to expand existing offerings.

### **Combined Heat and Power (CHP)**

CHP projects are a cost-effective way to provide efficient energy savings, reduce energy operating costs, improve resiliency, and reduce greenhouse gas emissions. In the past three years, significant savings have come from CHP projects due to National Grid's go to market strategy that has a dedicated team, including National Grid sales and technical staff, a CHP manager, and CHP Technical vendors who identify opportunities to execute on projects. National Grid believes that in the next few years, it will continue to see significant savings from CHP

projects. To expand opportunities with CHP projects, National Grid will continue with targeted outreach to customers in sectors that have been identified with higher potential. The Company will look to expand into smaller and medium opportunity CHP projects with customers like nursing homes, multi-family projects and health centers.

CHP projects also present challenges from an implementation perspective. These projects involve substantial capital investments, have complex technical requirements for installation, are design-intensive with long lead times for installation. These complexities pose challenges in predicting savings realized within a year. To mitigate some of this unpredictability, the Company plans to address a project's probability of completion for inclusion in Annual Plans each year.

The Company has experience with large scale CHP projects that have been delayed, which, in turn, has a serious negative impact on annual budgets and savings targets. Because of this experience, National Grid will only include CHP projects with realistic expectations of being completed within the calendar year. This typically means that the CHP equipment has been ordered. For planning, this will help ensure that the customer incentive is both collected from ratepayers and paid in the same calendar year – the best use of all ratepayer dollars. It is also to ensure that the targets can be achieved within the calendar year at the budgeted cost per savings. For example, a large CHP project may be 30,000 Annual MWh, representing 30% of the C&I sector anticipated savings, at an average cost of \$180 per MWh. If it is delayed, there is little chance that other projects can be completed in time to make up for the 30,000 Annual MWh if those projects were not already in development. Additionally, the average cost of non-CHP measures typically cost twice as much.

### **Small Business Program**

The Small Business Direct Install Program (SMB/DI Program) provides turnkey services to the commercial and industrial customers with an average demand of less than or equal to 200kW.

There is no upper limit of gas consumption that disqualifies a customer from receiving the gas measures offered by the SMB/DI program.

Customers are provided turnkey services consisting of an energy audit, direct installation measures, program incentive contribution of 70% of total project cost and On-bill repayment for customers' 30% share of project costs, with 0% interest. The Company is looking to add new

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measures to the program such as Wi-Fi thermostats and exploring additional go to market strategies to engage with vertical segments in this sector.

### **Market Segmentation and Customer Engagement**

To continue providing Rhode Island Commercial and Industrial customer tailored programs, the Company will sustain its market segmentation and tailored marketing approach to deliver programs. This approach allows the Company to provide customized solutions for businesses and manufacturers to participate in energy efficiency and also addresses barriers to participation. Based on this approach the Company in the past identified its largest accounts in specific market segments and has addressed them with initiatives like SEMP, the industrial initiative and the grocery initiative, called Energy Smart Grocer<sup>36</sup>. In the next three years the Company will focus on offering customized energy efficiency solutions to the next tier of accounts, including restaurants, hospitality, multi-family development (on the rise in RI), and emerging markets like indoor agriculture.

### **Enhanced Energy Tracking Tools and Benchmarking**

The Company is committed to providing easy access to energy information for all customers, to help them make informed decisions about their energy use and energy efficiency investments.

*Portfolio Manager Benchmarking Tool:* The US Environmental Protection Agency's Portfolio Manager is an interactive benchmarking tool that allows customers to track and assess energy and water use across their portfolio of buildings. This benchmarking tool can be used to set a baseline and help identify and target buildings for energy improvements. By the beginning of 2018, National Grid will implement a data upload process for the Portfolio Manager where customers will be able to automatically upload aggregate energy usage data into Portfolio Manager. This process will also support the City of Providence's benchmarking ordinance, the City is looking to implement in 2018. The goal of the benchmarking ordinance is to improve energy efficiency in buildings within the City of Providence. The Company is currently supporting the City's stakeholder process for the development of this ordinance.

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*Green Button Initiative:* The Green Button initiative is an industry-led effort that responds to a White House call-to-action to provide utility customers with easy and secure access to their

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<sup>36</sup> Energy Smart Grocer is an initiative that's implemented by a vendor from opportunity identification, customer site assessment, energy planning to finance and technical guidance.

energy usage information in a consumer-friendly and computer-friendly format. Customers are able to securely download their own detailed energy usage with a simple click of a literal "Green Button" on electric utilities' websites<sup>37</sup>. In 2016-2017, more than 500 C&I and residential customers downloaded their energy use data with Green Button. This included both gas and electric customers. National Grid will explore engaging with customers who download their energy use data with automatic email outreach that details how the programs can help them manage their energy use and achieve their energy goals.

### **Energy Efficiency Planning for Comprehensive Savings**

Today, strong indicators exist that the industry sees opportunities in investing in renewables and energy efficiency as a core business priority, with increasing interest in net zero energy buildings. Businesses are also looking to attract and retain talent to stay competitive and to do so many companies are looking to invest in workspaces. All these market conditions create opportunities in the retrofit market for deeper energy efficiency and operational energy efficiency. ~~National Grid will work with the true new construction market to increase adoption of HVAC designs that use dedicated outdoor air ventilation systems with high efficiency heating and cooling systems which are decoupled from ventilation. Such design approaches reduce the energy intensity of HVAC systems.~~

To capitalize on these changing market conditions, the Company will explore opportunities for comprehensive and deep energy efficiency savings for customers in the new construction and retrofit market. The company will look to explore at both operational savings as well as capital improvements in the retrofit market and look at setting Energy Use Intensity goals (EUI) and performance based incentives and metrics for new construction.

The Company will identify commercial customers, developers and owner, who have a higher propensity to participate in deep energy retrofit, operational efficiency and deep and persistent energy efficiency in New Construction projects, who have a higher propensity to participate in deep energy retrofit and operational efficiency. The Company will look at all aspects of program development including: a customer engagement strategy, identifying the energy saving opportunities, financial analysis, and a multiyear recommendations approach to implement more

<sup>37</sup> <https://energy.gov/data/green-button>



comprehensive energy efficiency savings. The Company will also explore escalating incentives for higher levels of savings, thereby encouraging customers to achieve comprehensive savings.

### **Optimize relationships with HVAC vendors to enhance the HVAC upstream program.**

In addition to the array of HVAC solutions the Company has supported for years, ranging from the air- and water-cooled air conditioning and heat pump equipment to boilers and furnaces and related controls and services, the Company will begin to augment these offerings in a variety of ways to increase savings from this important end use category.

For the upstream air conditioning and heat pump equipment offerings, the Company recently hired a new third-party vendor who not only has the requisite back office and program administration capabilities, but also has very strong technical and commercial expertise that should improve and expand relationships with equipment distributors and lead to increased savings. Additionally, more products will be added to the upstream HVAC portfolio of offerings including Variable Refrigerant Flow (VRF) and Electronically Commutated Motor (ECM) pumps to better serve a broader array of customers' HVAC needs.

Through the Company's Channel Sales<sup>38</sup> group, there are plans to work more closely and collaboratively with supply houses and wholesalers of HVAC equipment to enable them to more effectively both upsell and cross-sell energy efficient equipment. The objective is to convert more standard efficiency equipment purchases into high efficiency purchases and to increase sales of related or add-on equipment as well. Importantly, this approach will also remove the transaction costs burdens typically confronted by customers and or their contractors by having the distributors provide the information necessary to incentivize these projects. It is expected that this approach will increase savings with customers who have in the past decided, despite awareness of the available incentives and services, not to participate. This approach could also lead to savings from customers who have historically been unaware of the available offerings.

### **Lighting Market Transformation**

The lighting market is one of the most dynamic parts of energy efficiency programs across the country. This is no different in National Grid's programs in Rhode Island. Over the past 6 years

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<sup>38</sup> The Company's Channel Sales Group manages relationships with external partners such as Project Expeditors (PEX), trade allies (contractors, installers, electricians, plumbers) as well as manufacturers and distributors of gas and electric products and services.

LEDs have become less expensive and have managed to improve the number of delivered lumens per input watt. The company has taken advantage of these dynamics by engaging customers through multiple paths such as prescriptive, custom and upstream and by serving a diverse group of customers from restaurants to manufacturing to universities. The savings achieved over the past three years have been substantial and are currently the bedrock of the Company's programs.

In the next three years, the Company will be maintaining its focus on serving the entire commercial market with LED luminaries (indoor and outdoor) and controls. The Company will continue its relationships with important market actors such as lighting designers and Lighting Manufacturer Representatives to intercept projects and make a difference in the space or building. The Company will also continue to pursue all lighting measure opportunities, lighting controls and emerging lighting technologies as well as expand the Performance Lighting initiative that focuses on system efficiencies with lighting design and lighting controls.

The Company expects to the continue pursuing LED linear lighting through upstream and custom lighting initiatives. Recent efforts with TLED's and Troffers have provided incentives for these products and further efforts will be made to capture more of the linear lighting market share by reaching C&I leasing customers and commercial customer spaces. Due to increases in efficacy of LED's, savings per unit may rise over time and incentives will be proportioned to promote rising efficacy.

The Company is excited about the lighting possibilities that lie ahead, including using color tunable luminaries to benefit the residents in nursing homes and will explore new lighting technologies and solutions as they emerge. ~~Nonetheless, the Company believes that it has already passed the maximum net savings it can capture in a single program year.:-~~

### **Street Lighting**

On June 1, 2017, National Grid established tariffs for both customer and company owned LED street lighting. This gives customers the option of having LED street lighting whether they choose to own or lease their street lighting. This is available to cities, towns, the state, as well as many other entities including any fire districts, regional school districts, and municipal water boards. Also included are: Kent County Water Authority, RI Commerce Corporation, Quonset

Development Corporation, RI Airport Corporation and Narragansett Bay Commission. National Grid worked collaboratively with OER and Partnership for RI Streetlights Management (PRISM) to achieve this goal. Customers will receive the same level of energy efficiency incentive whether or not they own the LED street lights, based on expected energy savings.

### **New Construction**

The enhancements in the Commercial New Construction Program in the last Three-Year Plan through a dedicated Company point person and streamlined incentive offers to the design teams have improved the program tremendously. Over the next three years, the goal of the New Construction program will be to increase participation and to support more comprehensive energy efficient building design of new construction and major renovations projects. A longer term goal of the program will be to develop the market to move to zero energy and zero energy ready buildings. Another goal of the program in the next three years will be to create the market for higher operational performance of these new construction projects. To achieve these goals the Company will develop the following key strategies.

- 1) The Company will look to engage developers and owners during the project conception stage prior to RFP process to acquire a design team.
- 2) The Company will explore performance-based procurement approaches that were developed by the National Renewable Energy Laboratory that help set performance based metrics (Energy Use Intensity goals), help set energy goals for design and operations of new construction projects and support the design teams with implementation of strategies to achieve these goals.
- 3) The Company will also look to revitalize outreach to the building community with accredited courses for American Institute of Architects (AIA) and United States Green Building Council (USGBC) and information on energy efficiency and design practices.
- 4) The Company will explore providing finance to owners and developers and the design to team to achieve energy goals.

To encourage innovation in energy efficient design the Company will explore holding a design competition and workshops. The Company will also explore starting an annual award for achievements in exceptional design and construction of new high performance buildings.

*Technologies in New Construction: National Grid will work with the true new construction market to increase adoption of HVAC designs that use dedicated outdoor air ventilation systems with high efficiency heating and cooling systems which are decoupled from ventilation. Such design approaches reduce the energy intensity of HVAC systems*

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### **Deep Energy Market**

The company will work closely with AIA to introduce architects to the concept of deep energy retrofits, inform them of the significant business opportunity deep energy retrofits represent, educate them on the deep energy retrofit process and the architect's role in it, and familiarize them with financial tools and incentives available to this market sector.

### **All Customers**

Below are the company's programs and initiatives which target all National Grid customers in Rhode Island, residential, low income, and commercial.

### **Finance – Helping customers overcome barriers**

The Company, through its energy efficiency programs, has succeeded in lowering barriers for its customers to invest in energy efficient equipment, controls, and training for employees for more than 20 years. This has largely been accomplished through the use of incentives, which have been effective in reaching previous energy targets, and will likely aid in reaching aggressive savings targets in future years. However, incentive based programs have two key limitations.

The first limitation is that incentives never cover the full incremental cost of investing in energy efficiency. Some customers can and do prefer to use incentives to cover part of a project's incremental cost and then pay for the rest themselves. However, the Company is aware that there are a significant number of customers who will require more help covering first costs than incentives can currently provide. This is especially important as the Company endeavors to reach underserved customers and to move more customers into more complex, multi-measure projects.

The second is that incentives operate like grants, and by definition, grants cannot be returned into the system to be used over and over. This means that new funds need to be collected each year to cover program costs. And while this is fully compliant with the Least Cost Procurement Statute

and achieves significant benefits, National Grid and its stakeholders agree that there are ways to potentially use some of these funds in a more cost efficient manner.

The Company believes that these limitations can be overcome, in part, with a thoughtful combination of finance tools. National Grid knows that the Efficient Buildings Fund (EBF), the Company's On Bill Financing/Repayment mechanism (OBR), and Commercial Property Assessed Clean Energy (C-PACE), and residential OBR all have important roles to play in aiding customers to complete projects that save money, increase comfort, or raise the value of a customer's facility. What is not yet known is the optimal mix of these products to meet stakeholder expectations and kWh and therm goals over the next three years.

National Grid commits to the following for 2018-2020:

1. Partner with the Rhode Island Infrastructure Bank (RIIB) on providing a common quarterly reporting framework for the use and status of OBR and EBF financing funds that will provide valuable information for assessing and planning for future financing program allocations.
2. Partner with customers to understand which financing options are appropriate (or need to be developed) for them and spur them to action.
3. Partner with stakeholders and other partners (such as RIIB, OER, and the City of Providence) to identify which products are most likely to succeed in specific vertical markets.
4. Work with partners to develop "up and coming" financing solutions that encourage broader and deeper participation.
5. Work with partners to reduce friction in current financing solutions.
6. Work with partners, stakeholders, and energy financing experts on education of customers and cohesive implementation of current and new financing solutions.
7. Continue to enhance sales training on financial products to increase participation in programs and give customers more options for financing energy efficiency.
8. Explore piloting new strategies for the large C&I OBR fund to test customer response and implication on savings. Such pilots may include testing customer response to lower incentives combined with more finance dollars, and requiring more non-lighting measures for a portion finance dollars. The results of these pilots will help inform the Company's finance strategy in the later years of the Three-Year Plan.

9. Explore new financing opportunities such as a third party off-bill financing, Pay as you Save (PAYS), and the Metered Energy Efficiency Transaction Structure (MEETS).
10. Continue to investigate whether it is feasible for the Company to offer an on-bill recovery mechanism for residential customers.

### **Valuable Services through Design Thinking**

Providing customers valuable services can only be accomplished by truly understanding what customers really desire and or/need. Too often, there is an impulse to provide a solution that serves the needs of the decision-makers but is not necessarily the best option for the customer. Usually, this takes the form of applying an existing program to a vast array of customer situations and expecting each unique situation to fit within the preexisting program design. Understanding the inherent limitation of this approach, the Company is committed in 2018-2020 to employing “design thinking” strategies to craft new solutions and optimize existing programs to create value for customers in this changing energy landscape. These strategies will require the Company to be empathetic in its approach to customers in designing solutions that get to the heart of what customers value and need. This approach will require asking customers the right questions, and being empathetic to what they say. Only once a “need” is understood can insights be gained that allow the Company to engage in the ideation and prototyping necessary to bring to fruition a product or service that gets to the core of what the customer desires. By engaging in more focused customer interviews the Company will better understand how to build solutions and programs to better serve customers. To this end, the Company will experiment continuously, measure relentlessly, and learn from its successes and failures to deliver solutions that are of value to customers.

### **Engaging with Communities**

The Company will create a more comprehensive Community Based Initiative over the next three years to achieve deeper energy efficiency commitments from Rhode Island cities and towns. Since May of 2013, 17 of the State’s 39 municipalities have participated in the Company’s community energy efficiency initiative aimed at having residential customers pledge to be more energy efficient. As a result, over 13,000 customers have taken a pledge to find ways to save energy in their homes. For 2018 and beyond, the Company proposes to take the learnings from

this successful initiative and optimize the program which will lead to greater energy efficiency program participation in residential and C&I sectors.

- Working with municipal leadership the Company will continue to expand beyond basic pledges for efficiency and will set energy savings goals for actions that must be achieved within the city or town. These goals will be achieved by promoting energy efficiency programs – and strategic electrification of heat when cost-effective – to both residential and C&I customers. In the past the initiative focused on residential customers only but for 2018-2020 the Company will expand promotional efforts to C&I customers whose buildings are located within the targeted communities. This will highlight leaders who have moved forward with energy improvements on site while encouraging businesses to be vocal advocates for energy efficiency to their employees.
- The Company proposes to work with the distributed generation and electric vehicle groups within the Company to offer a customized suite of services to large employers interested in taking part in the community based initiative. Having a collection of offerings such as group purchase electric vehicle programs or Home Energy Assessment campaigns that are custom-branded for the employer to promote to the workforce will bring new value and ease of participation to residential customers while at the same time positioning the employer as a leader in sustainability.

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### **Zero Energy Building (ZEB) Pathways**

Zero Energy Buildings (ZEBs) have the potential to strongly support Rhode Island’s greenhouse gas emissions reduction goals. ZEBs minimize their overall energy consumption through innovative designs and energy efficiency measures. Renewable energy technologies are then used to generate the remaining annual energy needs of the building. ZEBs can be homes, businesses, or other facilities.

As the largest utility in Rhode Island, National Grid has an integral role to play in enabling and accelerating the adoption of ZEBs in the state. In 2015, National Grid developed a whitepaper with input from key stakeholders for achieving ZEB goals by 2035<sup>39</sup>. Recommendations in the whitepaper included establishing policies and legislation that support ZEBs, launching a state-

<sup>39</sup> Zero Energy Building pathway to 2035. Whitepaper Report of the Rhode Island Zero Energy Building Task Force. Prepared by National Grid, November 2016

wide ZEB program across all building sectors, and enhancing utility energy efficiency programs to spur the ZEB market while addressing energy efficiency and renewable energy integration barriers. National Grid is committed to supporting the State and making progress on these recommendations.

National Grid has committed to developing ZEB demonstrations in 2018-2020 that will enable a go-to-market strategy for ZEBs. In 2017, National Grid will be working with Rhode Island Housing and Office of Energy Resources to develop a moderate income/income eligible zero energy home(s). This demonstration will provide important information to guide the development of a zero energy offering in 2018 or 2019. In addition two more demonstrations are planned for 2018. One demonstration will be a market rate zero energy home that will demonstrate an all-electric smart home. Again this process will inform the savings available from zero energy homes and will guide the development of a zero energy offering. In addition, two commercial demonstration projects have been planned for 2018 – 2019.

Support for ZEB growth in RI will require education and training for the building community, technical assistance, and improvements to codes and standards. Furthermore, benchmarking and building energy labeling will help building owners, sellers, renters, and buyers move the industry towards ZEBs by encouraging everyone to consider energy efficiency during building construction and transactions.

National Grid has committed resources to help automate benchmarking and labeling efforts for commercial facilities with Portfolio Manager (a free online tool from the EPA). Portfolio Manager allows owners and operators to track and compare energy usage in buildings or a portfolio of buildings over time. This data helps owners and operators identify under-performing buildings, set capital improvement priorities, verify efficiency improvements, and identify successful energy management practices.

- To achieve the State’s ZEB goals, solutions to drive both new construction and large-scale renovation markets towards ZEBs are needed. In both market segments, National Grid is supporting strategic electrification efforts with technologies like heat pumps. The Company will also identify geographical locations where ZEBs will have the most beneficial impact on the grid.

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## Pilots and Demonstrations

### Electric Demand Response (DR)

In 2017, the Company launched a demand response (DR) demonstration for residential, large commercial and industrial customers. The goal of the DR demonstration program is to reduce peak demand costs for all customers in the regions as well as reduce installed capacity tag<sup>40</sup> for individual commercial and industrial customers through peak shaving and load shifting opportunities.

Through the Connected Solutions demonstration, the Company will continue to scale and assess the savings and corresponding costs of scaling demand response offering. Additional savings opportunities will be tested by investigating more technologies, such as hot water heaters, both electric and heat pump, [heat pump mini-splits](#), as well as operating a seasonal saving component that will focus on reducing overall usage during winter time to relieve the demands of gas and electrically heated homes.

In early 2017, the Company enrolled over 5 MW of demand reduction for a summer demand response demonstration program with large C&I customers. The program offers customers monthly incentives for enrolled kW reduction as well as a performance incentive for DR event participation. National Grid will analyze data collected from the 2017 demonstration to assess the market potential, test delivery strategies, identify market barriers, and develop the cost effective screening framework for demand response (DR) programs. In the next three years the Company will look to expand the program targets from 5 MW based on the learning from the first year of deployment.

In the next few years, the Company will also explore demand response program opportunities for small business customers with direct load control technologies. [The Company will look incentivize energy efficient connected technologies through the energy efficiency programs and will](#) ~~This initiative will~~ explore opportunities to reduce peak load by providing incentives for ~~the automatic load reduction~~ ~~installation of technologies that automatically reduce energy usage~~ during demand response events. Technologies include Wi-Fi thermostats that control air conditioners, smart [heat pump](#) water heaters, [smart electric water heaters](#) and network lighting.

<sup>40</sup> Installed Capacity Tag is a capacity payment that is set for a customer by using their peak demand during the peak day/hour on the NEPOOL grid.

In addition, National Grid will explore other demand response-enabled technologies as they become available in the market. The company will also explore opportunities in the connected space, with other non-energy Wi-Fi enabled technologies that maybe an entry point or an engagement opportunity for energy efficiency and demand response with customers.

Demand response is a flexible resource that can be used to address system constraints and congestion. The Company will also examine geo targeting demand response solutions with marketing and community initiatives to address planning and strategic electrification efforts in the next three years.

### **Gas Demand Response and addressing Gas Peaks**

During the extremely cold winters of 2013 and 2014, the region experienced energy price spikes due to increased demand of natural gas for electric generation and heating, combined with pipeline constraints. Since that time the region hasn't experienced the same level of winter price volatility thanks to a combination of ISO-NE's Winter Reliability Program and relatively mild winters; however, gas pipeline constraints remain a concern.

Investment in energy efficiency has been one of the most cost-effective strategies to alleviate energy price spikes by lowering demand for generation during winter peak. The Acadia Center found that without electric efficiency programs, energy costs would have been \$1.5 billion higher in winter 2014 alone.<sup>41</sup> In its Three-Year Plan, the Company will continue promoting electric energy efficiency measures that provide savings during winter peak.

The Company also proposes to investigate the costs and benefits of offering gas demand response programs as a potential means to alleviate gas pipeline constraints. Specifically, the Company will look to add a task to the scope of the 2018 Avoided Energy Supply Cost study to investigate the potential capacity benefits from reducing gas consumption at peak. The Company is also awaiting the outcome of a Massachusetts Department of Energy Resources pilot that seeks to quantify the potential benefits of gas demand response in New England. While the Company awaits these results it will operate a seasonal savings component of its residential demand response pilot that will focus on reducing overall usage during winter time to relieve the demands of gas and electrically heated homes.

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<sup>41</sup> Acadia Center, Winter Impacts of Energy Efficiency In New England, April 2015.

### **Energy Monitoring Demonstration**

There are emerging technologies that show a homeowner how much energy each light or device in their home uses. Real time information allows homeowners to understand system performance and to have access to information remotely. The Company is considering testing these products for potential savings and customer engagement.

### **Battery Storage Demonstration**

There is a lot of marketplace interest in behind-the-meter battery storage for consumers. The Company is considering investigating customer interest and interaction with battery storage units and testing the potential for integration with Connected Solutions and understanding how to make battery storage financially viable for all parties.

### **Zero Energy Home**

As technologies are taking customer lives and homes to the next level of awareness and control, creating a fully connected, all electric, zero-energy home will be important to test to determine if savings are available to offer incentives to the customer. Based on the recommendations set forth in Zero Energy Task Force Whitepaper, “Zero Energy Building Pathway to 2035” zero energy pilot projects were recommended as a resource for demonstrating effective design, construction and operation of a zero energy home. In order to meet the goal set out by the Whitepaper of 100% of new construction to be ZEB after 2035, it is imperative to develop a program to support the market. The Company is proposing to develop a zero energy home that includes energy efficiency, demand response, solar, electric vehicle charging, battery storage, and smart devices to empower the homeowner to adjust their energy loads to meet the zero energy goal at the end of the year. This project would be used as a customer facing marketing and engagement tool for a period of time prior to its sale.

### **Indoor Agriculture**

Commercial indoor agriculture is for recreational and medicinal marijuana production. For 2018, the strategy will be to enlist a medical marijuana facility to learn about energy usage and needs/concerns, planning for the eventual legalization of cannabis for recreational use in Rhode Island. This is an important emerging sector due to the high demand for lighting and HVAC. There are two building types associated with this market. One is a warehouse type facility with no windows. The second is a greenhouse type facility. There may be electrification issues, as

some growers are constrained from expanding their businesses due to limitations on the grid. The Company needs to learn what is important to growers – including worker safety in such areas as the blue-red lighting spectrum which can cause eye strain and headaches, as well as reliability, production rates, energy costs, etc.

### **Reducing Upfront Costs of Ductless Mini Splits for Small Businesses**

The Company will explore options to reduce the upfront costs of heat pumps among small businesses. This might be done through innovative financing ownership or financing structures with an installer or manufacturer as a partner. The aim would be to give customers the option to substantially reduce or avoid paying the costs associated with purchasing the units, yet benefiting from the heating and or cooling. Ductless heat pumps are often appropriate for installations in older buildings since no ductwork is needed. The Company can test usage in a variety of building types, as well as different lines of business.

### **LED Color Tuning for Lighting in Senior Care Facilities**

Aging eyes combined with the unique lifestyles of elderly residents of senior living facilities frequently result in less than optimal lighting when fluorescent lighting is used. The fluorescents often have a lighting spectrum which is less than optimal for this audience. Nursing facilities often lack natural sunlight. Testing can be conducted to determine first the direct savings that comes from replacement of the original lighting combined with the additional savings from automatic dimming. Both the amount of light as well as the color of the light can vary with these controls. If lighting is too bright, it can upset the natural release of melatonin, which aids with the sleep-wake cycle. The demonstration project will include educating contractors to install systems for the staff and residents and training staff and residents about how the system operates. Non-energy benefits may include reduced medications for residents and/or a reduction in outbursts.

## **Transformations**

### **Integration with Power Sector Transformation**

Governor Raimondo tasked the PUC, the OER, and the Division with developing a new regulatory framework for Rhode Island’s electric system resulting in the Rhode Island Power Sector Transformation initiative. This proceeding consists of four parallel work streams: Utility

Business Model, Distribution System Planning, Grid Connectivity Functionality, and Strategic Electrification of Transportation and Heating. At the time of this filing, the initiative is still ongoing. However, the Company is committed to incorporating any outcomes into its Annual Plans. In the meantime, the Company has taken the initiative to investigate the incorporation of beneficial electrification of heating into its Plan. In addition, the Company continues to pilot new technologies around demand response and automation to begin educating customers on real-time management of energy consumption to prepare them for future tools that may be available through grid modernization.

### **Integration with Renewables**

As Rhode Island moves toward a clean energy future set out by Governor Raimondo and the General Assembly, National Grid recognizes the need to better integrate its offerings of energy solutions. In an effort to streamline a customer's experience with the many energy solutions including: energy efficiency, demand response, electric vehicles, renewable technology, and battery storage, National Grid will work with internal and external stakeholders to identify new opportunities to collaborate on the delivery of – and benefits from – integrated EE and renewable solutions.

As there are inherent complexities of EE and renewable technology programs, it will be necessary to demonstrate technologies and programs to determine effectiveness, benefits and ease of use. Included in this effort will be the pursuit of aligned funding of solutions to create a seamless experience for the customer.

### **Customer Transformation**

National Grid has a team focused on the customer experience which includes enhancements to the Company website, interactive voice response system, and additional transactional touch points. While energy efficiency is not specifically mentioned in customer experience objectives, EE enhancements can be included where appropriate.

### **Strategic Electrification Policy and Objectives**

The Rhode Island Greenhouse Gas Emissions Reduction Plan (GHG Plan) identifies electrification of heating as a key strategy for meeting the GHG emissions reduction target of

80% below 1990 levels by the year 2050, as set forth in the Resilient Rhode Island Act.<sup>42</sup> The Plan notes that that 27% of the State's GHG emissions are from fuel consumption for space and water heating in residential and commercial buildings. Furthermore, the GHG Plan suggests that 81% of residential and 67% of commercial main heating load will need to be converted to highly efficient electric heat pumps in order to meet the State's GHG reduction goals.<sup>43</sup>

High efficiency electric heat pumps create GHG reductions by displacing emissions from fossil fuel heating systems such as propane and oil boilers and from their inherent higher efficiency. The GHG reduction benefit of electrification will increase over time as New England's electric supply continues to shift toward a more decarbonized resource mix. Other jurisdictions like Vermont and Maine have acknowledged the benefits of electrification and have incented the switch to heat pumps through their energy efficiency programs.

In order to help meet state policy goals and to provide additional energy and cost savings to delivered fuel customers, the Company proposes to include incentives for strategic electrification of heating in its Three-Year Plan. Although strategic electrification of heating is not a traditional energy efficiency measure because it increases the use of electricity, it does reduce overall energy consumption through improved efficiency and meets the spirit of state policy by both delivering savings to customers and reducing aggregate emissions. Neither existing law nor the revised Least Cost Procurement Standards prohibit the Company from including incentives for strategic electrification of heating in the Three-Year Plan as long as the Company meets the criteria for cost-effectiveness. Furthermore, Section 1.2(A)(iii) of the revised Standards specifically directs the Company to address new and emerging issues like strategic electrification, including how it may meet State policy objectives and provide system, customer, environmental, and societal benefits.

The Company finds that incentivizing the installation of high efficiency electric heat pumps for customers with existing electric resistance heating and oil boilers<sup>44</sup> is cost effective under the RI Test and therefore will provide customers with net energy savings, qualifying it as an energy

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<sup>42</sup> Rhode Island General Laws §42-6.2

<sup>43</sup> Rhode Island Greenhouse Gas Emissions Reduction Plan, December 2016.

<sup>44</sup> The Company also evaluated incentivizing the installation of high efficiency electric heat pumps for customers with propane and kerosene-fired boilers, but determined that these offerings are not cost effective at this time.

conservation measure under Least Cost Procurement.<sup>45</sup> Incenting more customers to switch from fossil fuel based heating to heat pumps will also help meet the State's GHG reduction goals and, in turn, create significant environmental and societal benefits.

### Heat Pump Implementation, and Education

In the Three-Year Plan, in instances where benefits exceed the costs, the Company will support the installation of heat pumps for heating as well as cooling. One integral component of heating with cold climate heat pumps will be in educating consumers and installers on the associated cost savings. Further detail on the design of this initiative will be provided in the 2018 Annual Plan.

### Delivered Fuels

The Company recognizes and supports Rhode Island's state objectives to provide energy efficiency for delivered fuel heating customers and will be addressing this segment with electric accounts in multiple ways. Income Eligible customers have always received the same services as electric and gas customers with no incurred customer costs. This is true of income-eligible multifamily customers in 5+ unit facilities as of 2017. These services are not anticipated to change during the next three years. For non-income eligible, single-family (1-4 unit) homes, and 5+ unit multifamily facilities, the Company will investigate providing weatherization services at the same or similar levels as gas customers. The HEAT loan as well as other financing, perhaps through the Rhode Island Infrastructure Bank, may also be available to support financing of weatherization and efficient heating equipment.

In addition to the suite of direct install measures that National Grid has traditionally offered customers, National Grid plans to offer increased options for customers that have delivered fuels such as oil and propane. The Company will reserve a portion of the Small Business Electric Revolving Loan Fund to cover 100% financing for upgrades.

### Codes Program and Accounting for New Codes

~~Incorporating energy efficiency into buildings at the time of design and construction is by far the most cost effective way to deploy the benefits of energy efficiency.~~ Improving compliance with the state's residential and commercial building energy codes ~~in residential and commercial buildings (new construction and alterations/additions in existing buildings)~~ helps ensure that

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<sup>45</sup> See R.I. Gen. Laws § 39-1-27.7(a)(2).

energy efficiency is incorporated into buildings at least cost – at the time of construction or alteration.

Currently Rhode Island is one of the leading states working towards offering a dedicated effort program to increase improve energy code compliance rates of in its residential and commercial buildings. Efforts to improve code compliance began in 2013 with the Code Compliance Enhancement Initiative (CCEI), a dedicated effort of state-wide trainings and circuit rider technical assistance offered to building officials and the building industry to boost knowledge and compliance of the prevailing energy code. Recent evaluation studies have demonstrated that state-wide compliance rates have increased drastically since the start of the initiative even while the code itself became more stringent.

This effort will continue in the next three years but will scale down considerably due to a changed focus solely on new construction savings. Also, a delay in the state’s energy code update process coupled with our success in elevating compliance rates results in a further decrease in potential energy code savings. Despite a reduced scope and an uncertain energy code update schedule, the Company will adapt this program to focus on the remaining specific compliance gaps and remain flexible in order to react to an uncertain regulatory environment. The initiative will, and expand to e-learning modules that are expected to drive more participation and knowledge about energy codes to a wider audience of the new construction market, including but not limited to builders, designers, architects. The initiative will also support building officials and the RI Building Code Commission to improve the enforcement process by developing and providing standardized documentation tools. ;

As RI adopts more stringent energy codes and transforms the new construction market, the Company will continue to support the state’s aggressive energy policies in promoting the next-generation building sector. The Company will continue to work with state and local building departments and OER to develop and implement the voluntary stretch code to go beyond the energy code. The CCEI initiative will offer trainings and assistance related to promoting the compliance with the of stretch codes as well as preparing the market for the zero-energy building (ZEB) future. The initiative will also investigate opportunities to support increased use of the stretch code.



The Company will also continue to work with the OER and Northeast Energy Efficiency Partnerships (NEEP) to support the adoption of develop-state-level appliance standards and will investigate supporting the federal appliance standards development process, adoption procedures and technical specifications for higher standards for state level adoption of appliances.

## **Funding Plan**

The following funding sources may be used in each year. The amounts from each source will be detailed in the annual plans. The sources of the electric funding plan in this Plan include funds from the first three sources.

1. One line on the customers' bill currently labeled "Energy Efficiency Programs" comprised of the existing energy efficiency program charge of \$0.01077 per kWh plus a fully reconciling funding mechanism charge in accordance with RIGL § 39-1-27.7. This total of the two factors is represented by the "EE Charge per kWh" row in Attachment 1.
2. Revenue resulting from the participation of energy efficiency resources in ISO-New England's forward capacity market (FCM).
3. Projected large C&I commitments.
4. Proceeds from the auction of Regional Greenhouse Gas Initiative (RGGI) allowances pursuant to § 23-82.6 of the General Laws.
5. Funds from any state, federal, or international climate or cap and trade legislation or regulation including but not limited to revenue or allowances allocated to expand energy efficiency programs.
6. Other sources as may be identified by the EERMC and the Company.

The sources of the gas funding plan include the following funding sources:

1. One line on the customers' bill labeled "Energy Efficiency Programs" comprised of the existing average energy efficiency program charge of \$0.780 per Dth plus a fully reconciling funding mechanism charge in accordance with RIGL § 39-1-27.7. This total of the two factors is represented by the "EE Program Charge per Dth" row in Attachment 1.
2. Low Income Weatherization funds from Base Rates.

There are many uncertainties associated with the exact amount of the additional funding that will be needed: Company sales, customer co-payments, commitments made for future years, the settlement price for future FCM auctions, identification of additional outside sources of funding, [the cost to achieve the savings to meet the future innovation line item in 2019](#), and the Company's success in minimizing costs in order to maximize customer benefit. In each subsequent Annual Plan, the Company will incorporate any new evaluation results, new technologies and emerging markets, and work with the EERMC and Collaborative to attempt to meet the savings targets as proposed in Docket 4684. Increasing savings to meet the original targets will likely increase funding needs compared to what is currently proposed in Attachment 1.

Due to these uncertainties, the Company illustrates the amount of funding it expects to need in each year of the Three-Year Plan, and asks for provisional approval of these amounts in order to guide the development of the ~~Annual EE-Program~~ Plans. The Company is required to submit its ~~Annual EE-Program~~ Plans (including a detailed budget and implementation plan) to the Commission for review and consideration, including a detailed budget and implementation plan each year by November 1 in the initial year and by October 15 in the following two years.

While Attachment 1 does not show sector-specific funding levels, the Company will continue its practice of having the residential, and commercial and industrial sectors subsidize income-eligible sector energy efficiency programs in order to provide equity in the availability of program funds and opportunities to benefit from energy efficiency, which is identified as a desirable objective in the Standards.

The Company intends to work with various market actors (vendors, distributors, designers, and builders) to obtain the best pricing for services to achieve program savings goals while controlling costs. The ~~Annual EE-Program~~ Plans, including the upcoming November 1 filing of the 2018 Annual ~~EE-Program~~ Plan, will reflect progress made in leveraging other sources of funding, if applicable.

## **2018 Legislation Impact on Funding**

At this time, the 2018 state budget proposes to allocate \$12.5 million from the 2018 energy efficiency program budget to the state budget. It also proposes to cap the 2018 budget at 2017 levels.

This Plan has been designed to illustrate the new initiatives and strategies that the Company will pursue to help customers save energy, reduce carbon, create and maintain local jobs, and deliver economic benefits to the state over the next three years. This Plan does not limit the benefits of energy efficiency, specifically in 2018, due to the budget cap. The Company and Collaborative will address the budget cap in the 2018 Annual Plan when more detailed information will be available.

The funding plan does illustrate the \$12.5 million reallocation from the efficiency program budget to the state budget. A \$12.5 million investment in energy efficiency is equal to approximately 23,279 Annual MWh in savings, creating \$48.3 million in benefits and avoided 103,940 tons of carbon over the life of the installed measures. It also equals 1,210 jobs years. It also could have reduced the illustrated rate by 16% in 2018. For a very large industrial customer, this rate reduction could have saved \$29,700 a year.

## **Bill Impacts**

National Grid recognizes that energy efficiency is an investment in the future that results in lower costs in the future by reducing energy and transmission today. This investment is funded by a rate on customers' bills. National Grid conducts a Bill Impact Analysis to determine if all customers, even those who do not participate in energy efficiency projects, benefit by having lower future bills. Previous analysis has found that over the lifetime of the programs, the average Rhode Island customer's bills are lower than they would have been if there were no programs. National Grid will continue to conduct the Bill Impact analysis in Annual Plans.

## **Shareholder Incentive**

The proposed shareholder incentive mechanism, applicable to energy efficiency efforts in 2018 to 2020, will initially be based on the same framework as approved in the 2017 Annual Plan. However, given the growing importance of aligning energy efficiency plans with the state's

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goals for power sector transformation and greenhouse gas emissions reduction, the Company will work with the OER, the DPUC, the EERMC, and the Collaborative to consider new performance metrics to promote these complementary policy goals.

Any agreed upon changes to the Performance Incentive mechanism would not be included until the 2019 Annual Plan. Changes in performance metrics may cause Annual Plan budgets to differ from the illustrative budget included in the Three-Year Plan as they will incent a different measure mix that may carry different implementation costs. This could change the total amount of the shareholder incentive. The Company will also collaborate with stakeholders on possible further changes to the incentive structure for the 2021-2023 Three-Year Plan.

For the purpose of the illustrative budget in this Three-Year Plan the Company calculated the incentive based on the framework in the 2017 EE Plan (Docket 4654).

As in 2017, the proposed incentive mechanism establishes an incentive of 1.25% of the annual spending budget for achieving 75% of the savings goals in a sector. This would increase linearly to 5% of the annual spending budget for achieving 100% and increase linearly from that point to 6.25% of the annual spending budget for achieving 125% of the savings goals.

Expressed mathematically, the shareholder incentive would be calculated as follows for both energy and demand savings, where SB is the Annual Spending Budget in the sector:

- From 75% of savings to 100% of savings:
  - Incentive =  $SB \times (0.15 \times \% \text{ of savings achieved} - 0.10)$ 
    - x 0.7 for electric energy savings
    - x 0.3 for electric demand savings
    - x 1.0 for natural gas savings
- From 100% of savings to 125% of savings:
  - Incentive =  $SB \times (0.05 \times \% \text{ of savings achieved})$

The Company believes this structure will incent the Company to achieve savings that approach or exceed 100% of the annual goals. It does so by setting the threshold for savings required to earn an incentive at 75% of the annual savings goals, by creating a steep slope to earn a greater incentive in the range of 75% of savings to 100% of savings, by establishing the target incentive at 5.0% of the annual spending budget, and by offering a higher incentive for exceeding 100% of the annual goals.

The threshold performance level for energy savings by sector will be set at 75% of the annual energy and demand savings goal for the sector. The Company must attain at least this threshold level of savings in the sector before it can earn an incentive. The Company will have the ability to earn an incentive for each MWh, MW or MMBtu saved, once threshold savings for the sector are achieved. The cap for the target incentive amount of energy savings will remain at 125%.

In addition, in order to promote cost efficiency in spending in the achievement of the energy savings goals, an adjustment would be made under certain circumstances to MWh and MMBtu savings goals in the shareholder incentive calculation. If the actual implementation expenses in a sector at year end are less than the planned implementation expenses for that sector by more than five percent, and if achieved savings in the sector exceed 100% of the target savings goal, the savings goal for that sector will be adjusted by the ratio of actual implementation expenses to the planned implementation expenses. Conversely, if the actual implementation expenses in a sector at year end are greater than the planned implementation expenses by more than five percent, and if achieved savings in the sector are less than 100% of the target savings goal, the savings goal for that sector will be adjusted by the ratio of actual implementation expenses to the planned implementation expenses.

The ability to earn up to 125% of the target incentive is worthwhile because Rhode Island customers will realize additional energy and cost savings if the Company achieves a high level of energy savings performance. Given budget control requirements included in the incentive structure, this feature will provide the Company with an incentive to improve the efficiency of its program implementation efforts while providing Rhode Island customers with value in excess of the incremental incentive that may be earned by the Company. That is, the Company will have an incentive to increase customers' savings and customers will realize an overwhelming majority of the savings.

Table 6 provides an illustration of the target incentive over the Three Year Plan.

Table 76. Illustration of Target Shareholder Incentive

<b>Electric Programs</b>	<b>2018</b>	<b>2019*</b>	<b>2020</b>
Spending Budget	\$ 96,634,953	\$113,272,514	\$102,229,204
Target Shareholder Incentive			
Energy Savings (3.5%)	\$ 3,382,223	\$ 3,964,538	\$ 3,578,022
Demand Savings (1.5%)	\$ 1,449,524	\$ 1,699,088	\$ 1,533,438
Total Benefits	\$ 373,004,694	\$438,942,301	\$451,782,884
<b>Gas Programs</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
Spending Budget	\$ 27,408,372	\$ 28,709,749	\$ 29,707,869
Target Shareholder Incentive (5.0%)	\$ 1,370,419	\$ 1,435,487	\$ 1,485,393
Total Benefits	\$ 97,702,163	\$101,369,221	\$104,184,334

\*2019 includes 25,539 Annual MWh and correlated costs and benefits, as an adder for future innovation.

## Timeline

The Standards outline the following timeline for the development of the annual program implementation plans and detailed budgets. National Grid will work with the EERMC and the Collaborative to meet these deadlines:

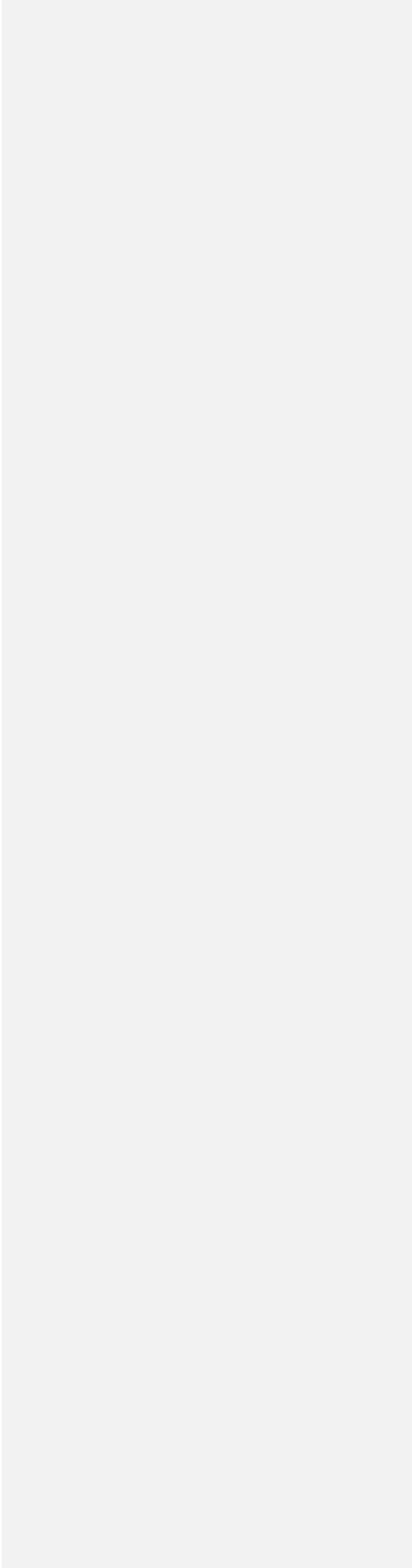
- a. Three-Year Least Cost Procurement Plans
  - By August 17, 2017 and triennially thereafter: The EERMC will vote whether to endorse the Energy Efficiency Procurement Plan.
  - September 1, 2017 and triennially thereafter: Submit the Energy Efficiency Procurement Plan for three years of implementation beginning with January 1 of the following year.
  - September 1, 2017 and triennially thereafter: Submit the System Reliability Procurement Plan, which will propose general planning principles and potential areas of focus that incorporate non-wires alternatives into National Grid’s distribution planning process for three years of implementation beginning January 1 of the following year.
  
- b. Annual Energy Efficiency Procurement Plans

- National Grid will submit a draft ~~Annual EE Program~~ Plan to the Council and the Division of Public Utilities and Carriers for their review and comment annually at least one week before the Council's scheduled meeting prior to the filing date that year.
- The EERMC shall vote whether to endorse the ~~Annual EE Program~~ Plan prior to the prescribed filing date, annually.
- November 1, 2017 (and on October 15, 2018 and October 15, 2019): Submit the annual program implementation plan and detailed budget for the next program year. The Annual Plan filing shall also provide for adjustment, if necessary, to the remaining years of the Energy Efficiency Procurement Plan based on experience, ramp-up, and increased assessment of the resource levels available.

c. Annual System Reliability Procurement Reports

- November 1, 2017 (and on October 15, 2018 and October 15, 2019): Annual System Reliability Procurement Plan and funding plan submitted to the Commission.

**Attachment 1: Energy Efficiency Funding Plan**





## Attachment 2: Evaluation updates to Recommended Targets for Electric and Natural Gas Energy Efficiency Programs

Information gathered in recent evaluations will have a significant impact on net savings and cost-effectiveness in the forthcoming Annual Plans and has therefore been illustrated in the Three-Year Plan. The following summaries explain a few of the recent evaluation results and how their application causes the Three-Year Plan Targets to deviate from the Targets in Docket 4684. The tables illustrate the deviation from the Docket 4684 Targets in order to illustrate the magnitude of the changes. Additional evaluations are anticipated to be completed for the 2018 Annual Plan and variances are anticipated.

### Electric Evaluation Results and Changes

#### Energy Star Lighting

A draft Connecticut residential lighting Free Ridership (FR) study, *RI615 LED Net-to-Gross Evaluation*, by NMR, Inc., has been recommended by the EERMC consulting team as a guidance document for assessing the direction of NTG attribution in the market-driven program for 2018-2020. The draft study is available on the Connecticut Energy Efficiency website: <https://www.energizect.com/connecticut-energy-efficiency-board/evaluation-reports>. While the Connecticut study recommends specific values for FR/SO, after discussion on the applicability of those results to the RI market, the collaborators decided to use an estimate of FR that is the mid-point between the Target values selected in Docket 4684 and the Connecticut study results. A study by the Massachusetts Program Administrators, including National Grid, is underway and results are anticipated in early 2018.

The FR rate used for the residential lighting program during Target selection was estimated to be 40% in 2018, 50% in 2019 and 60% in 2020 for standard (STD) units. STD units comprise approximately 95% of the program target savings. Furthermore, values ranging from 10% to 20% were estimated for hard to reach (HTR) units, which made up the remaining 5% of bulbs in the program. Table 1 illustrates the impact of the changes due to this evaluation.

The savings from the transformation of the residential lighting market are still very real. Customers are still reducing energy through efficient lighting and the benefits to customers and

the state through reduced consumption are being realized. However, National Grid will not attribute those savings to the programs.

National Grid is committed to continuing this transformation in other residential lighting products in order to delivering aggressive energy savings and benefits to customers. To increase attributable savings, National Grid plans to increase the number of specialty bulbs in 2018 and 2019 compared to what was assessed in the Docket 4684 Targets.

Table 1: Residential Lighting Evaluation Impacts

Change in Free-Ridership	2018	2019	2020
Target planning (STD)	0.4	0.5	0.6
Consultant recommendation (STD)	0.5	0.57	0.64
% impact (STD)	20%	12%	6%
Target goal (95% STD)	44,763	30,776	21,977
MWh/yr Reduction (STD)	-8,953	-3,780	-1,374
Target planning (HTR)	0.1	0.15	0.2
Consultant recommendation (STD)	0.3	0.37	0.44
% impact (HTR)	67%	59%	55%
Target goal (5% HTR)	2,356	1,620	1,157
MWh/yr Reduction (HTR)	-1,571	-963	-631
Total Res ES Lighting MWh/yr reduction	-10,523	-4,743	-2,005

#### Residential Home Energy Reports

National Grid has completed an impact evaluation for the RI Home Energy Reports (HER). The study, *RI Home Energy Reports Impact Evaluation* by Illume Consulting was finalized in August 2017. The EERMC consulting team has reviewed the study. It will be filed with the Commission as part of the 2018 EE Annual Report and made publically available via the EERMC website. The study has determined new realization rates for the electric savings associated with RI Home Energy Reports will result in decrease in the electric savings by approximately 5% per year in 2018-2020.

In order to increase attributable savings to the program, National Grid plans to increase electric savings through several of the strategies described in the Home Energy Reports section. The

Three-Year Plan illustrates more savings compared to what was assessed in the Docket 4684 Target base potential.

Table 2: Electric HER RR Impact on Targets

	2018	2019	2020
Target Planning RR*	98%	98%	99%
2017 HER Evaluation RR	93%	93%	93%
% Impact	-5%	-5%	-6%
Approx. MWh/yr Reduction	-1,350	-1,300	-1,250

\*Target Planning RRs represent the weighted average RR for 2017.

### C&I Upstream Lighting Initiative

An Upstream Lighting impact evaluation is nearing completion for the Massachusetts Program Administrators, which includes National Grid. National Grid Rhode Island is working on a companion impact evaluation (*Rhode Island C&I Upstream Lighting Impact Evaluation by DNV-GL*), as well as working on the *C&I Free Ridership and Spillover*, by TetraTech, Inc. Upstream Lighting has been a large savings driver in both Massachusetts and RI and the program is implemented similarly in both states. The final study will be filed with the 2018 EE Annual Report and available via the EERMC website.

The evaluations are still being finalized and reviewed by National Grid and EERMC consultants. Based on the work completed to date, the evaluation contractor recommended a realization rate of 0.67 based on the similarity of Rhode Island early findings and Massachusetts findings. Over time, the RR is expected to rise, as program delivery and savings estimates become more aligned with the evaluation approach. Early impressions from the in-progress C&I free-ridership / spillover (FR/SO) study suggest that the FR has risen significantly to ~20% and SO has fallen significantly to ~5%, leading to another significant reduction in program savings. The net (1-FR+SO) factor is also expected to remain constant, as the Upstream program introduces more capital-intensive measures and moves away from “screw-in” type technologies that are simple replacements. The total effect on the C&I upstream lighting initiative is that overall net to gross values are dropping to roughly 50% of the values seen in recent history with screw in LEDs. The last line in Table 2 shows the total estimated evaluation impact from the two studies compared to savings estimated during the Targets.

Table 3: C&I Upstream Lighting  
Evaluation impacts

	2016	2018	2019	2020
Planning Realization Rate	0.95	0.67	0.75	0.8
Free-Ridership	0.088	0.2	0.2	0.2
Spillover	0.25	0.05	0.05	0.05
overall NTG	1.10	0.57	0.64	0.68
Targets MWh		24,000	25,000	26,000
Approximate MWh Reduction		-12,800	-11,700	-11,000

In order to aggressively transform the lighting market and deliver energy savings, National Grid will actively be promoting new products such as fixtures, troffers, exterior and linear products. The Company is also assessing increased efficacy in new TLED technologies which will increase savings.

#### Code Compliance Initiative

The *2017 Rhode Island Residential and Commercial Code Compliance Study* by NMR analyzes the energy impacts of compliance patterns found in 2016 relative to 2009 and 2012 International Energy Conservation Code (IECC). National Grid applies the modeled energy performance of the sampled buildings and the modeled energy performance of fully compliant buildings to the codes compliance calculator to estimate the technical savings potential for promoting code compliance in the commercial new construction sector. NMR also utilized the results to determine the relative importance (in terms of energy impacts) of the code provisions for the attribution analysis to the Codes Initiative. Unlike the previous Three-Year Plan, National Grid will not be able to claim savings for code compliance support for retrofit projects, which was the majority of savings. There is also rising compliance with the energy code without any accompanying update to the code pushing these minimum requirements higher. As such, the technical potential (difference between full compliance and current practice) has shrunk.

Table 4: Code Compliance impact on Targets

	2018	2019	2020
Codes Compliance Attribution Reduction MWh	-2,900	-2,900	-2,900

## Gas Evaluations and Changes

### Residential Gas Home Energy Reports

As stated above, the *RI Home Energy Reports Impact Evaluation* by Illume Inc. has been completed. It found a higher realization rate for the gas savings than estimated in the Targets. When applied, it results in an increase in the gas savings by approximately 15% per year in 2018-2020, illustrated in Table 3.

Table 5: Gas RR Impact on Targets

	2018	2019	2020
Target Planning RR*	94%	95%	95%
2017 HER Evaluation RR	110%	110%	110%
% Impact	16%	15%	15%
Approximate MMBtu/yr Increase	9,900	9,500	9,200

\*Target Planning RRs represent the weighted average RR for 2017.

### C&I Gas Retrofit

A Massachusetts study, *Steam Trap Evaluation, Phase 2* by DNV GL, was completed in 2016. The study will be filed with the Commission in the 2018 EE Annual Plan and available publically via the EERMC website. Steam traps have two types of measures within the C&I Retrofit program: custom and prescriptive. The custom savings use customer-specific inputs and are engineered – the study found the savings estimates were reasonable and recommended slightly modified savings estimation tool. The prescriptive savings used a deemed value. The study found that the deemed value should be updated. The deemed value will decrease from 257 therms/trap to 122 therms/trap. In 2016, prescriptive steam traps accounted for a significant percent savings in the RI C&I Retrofit gas program – savings that were used in the Target development as base potential. Applying the new deemed savings values decreases prescriptive steam traps savings by 14%. Table 4 illustrates the MMBtu change to the targets if the evaluated deemed savings value had been used.

Table 6: Gas RR Impact on Targets

2018      2019      2020

Steam Trap Deemed savings reduction	-20,900	-20,800	-20,700
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**C&I Gas New Construction**

A Massachusetts study of C&I condensing boilers (*Gas Boiler Market Characterization Study Phase II*, by DNV-GL) was completed in 2016. The study finds baseline boiler efficiency was increased to 85% versus the former baseline of 80%, reducing the claimable savings by approximately 50% compared to values used in Target development. Applying this result to the 2016 program savings, which were used as the Targets base potential, would reduce C&I Gas New Construction savings by 6%. It is illustrated in Table 5.

Table 7: C&I Gas New Construction (MMBTU/yr)

	2018	2019	2020
Condensing Boiler Baseline Savings reduction	-2,400	-2,400	-2,400

**Code Compliance Initiative**

As described above, the *2017 Rhode Island Residential and Commercial Code Compliance Study* by NMR also effects gas savings.

Table 8: Code Compliance Impact on Targets

	2018	2019	2020
Codes Compliance Attribution Reduction MMBTU/yr	-4,700	-4,700	-4,700

### Attachment 3: AESC Non-Embedded CO<sub>2</sub> Values

The below exhibits are referenced in the Cost-Effectiveness section of this Plan and are from the Avoided Energy Supply Costs in New England: 2015 Report, by Tabors, Caramanis, and Rudkevich (TCR), April 3, 2015.

Exhibit 4-7. AESC 2015 Non-Embedded CO<sub>2</sub> Costs (2015 dollars per short ton CO<sub>2</sub>)

	Marginal	Allowance Price	Externality
	Abatement Cost		
	a	b	c = a - b
2015	\$100	\$6.28	\$93.72
2016	\$100	\$7.26	\$92.74
2017	\$100	\$7.87	\$92.13
2018	\$100	\$8.47	\$91.53
2019	\$100	\$9.32	\$90.68
2020	\$100	\$10.16	\$89.84
2021	\$100	\$12.54	\$87.46
2022	\$100	\$14.92	\$85.08
2023	\$100	\$17.30	\$82.70
2024	\$100	\$19.67	\$80.33
2025	\$100	\$22.05	\$77.95
2026	\$100	\$24.43	\$75.57
2027	\$100	\$26.80	\$73.20
2028	\$100	\$29.18	\$70.82
2029	\$100	\$31.56	\$68.44
2030	\$100	\$33.94	\$66.06

Exhibit 4-14. Annual Pollutant Emission Values by Sector (2015\$/MMBtu)

	Residential			Commercial			Industrial		
	NO <sub>x</sub>	CO <sub>2</sub>	CO <sub>2</sub> at \$100/ton	NO <sub>x</sub>	CO <sub>2</sub>	CO <sub>2</sub> at \$100/ton	NO <sub>x</sub>	CO <sub>2</sub>	CO <sub>2</sub> at \$100/ton
2015	\$0.000	\$0.37	\$5.88	\$0.000	\$0.37	\$5.88	\$0.001	\$0.37	\$5.88
2016	\$0.000	\$0.43	\$5.88	\$0.000	\$0.43	\$5.88	\$0.001	\$0.43	\$5.88
2017	\$0.000	\$0.48	\$5.88	\$0.001	\$0.48	\$5.88	\$0.001	\$0.48	\$5.88
2018	\$0.000	\$0.53	\$5.88	\$0.001	\$0.53	\$5.88	\$0.001	\$0.53	\$5.88
2019	\$0.000	\$0.59	\$5.88	\$0.001	\$0.59	\$5.88	\$0.001	\$0.59	\$5.88
2020	\$0.001	\$0.66	\$5.88	\$0.001	\$0.66	\$5.88	\$0.001	\$0.66	\$5.88
2021	\$0.001	\$0.83	\$5.88	\$0.001	\$0.83	\$5.88	\$0.001	\$0.83	\$5.88
2022	\$0.001	\$1.00	\$5.88	\$0.001	\$1.00	\$5.88	\$0.001	\$1.00	\$5.88
2023	\$0.001	\$1.19	\$5.88	\$0.001	\$1.19	\$5.88	\$0.001	\$1.19	\$5.88
2024	\$0.001	\$1.38	\$5.88	\$0.001	\$1.38	\$5.88	\$0.001	\$1.38	\$5.88
2025	\$0.001	\$1.57	\$5.88	\$0.001	\$1.57	\$5.88	\$0.001	\$1.57	\$5.88
2026	\$0.001	\$1.78	\$5.88	\$0.001	\$1.78	\$5.88	\$0.001	\$1.78	\$5.88
2027	\$0.001	\$1.98	\$5.88	\$0.001	\$1.98	\$5.88	\$0.001	\$1.98	\$5.88
2028	\$0.001	\$2.20	\$5.88	\$0.001	\$2.20	\$5.88	\$0.001	\$2.20	\$5.88
2029	\$0.001	\$2.43	\$5.88	\$0.001	\$2.43	\$5.88	\$0.001	\$2.43	\$5.88
2030	\$0.001	\$2.66	\$5.88	\$0.001	\$2.66	\$5.88	\$0.001	\$2.66	\$5.88

**Exhibit 4-18. Value of Pollutant Emissions from Fuel Oil in 2015 (2015\$/MMBtu)**

Sector	SO <sub>2</sub>	NO <sub>x</sub>	CO <sub>2</sub>
Residential	\$0.0000	\$0.0001	\$8.16
Commercial	\$0.0000	\$0.0001	\$8.15
Industrial	\$0.0000	\$0.0001	\$8.15



## Attachment 4: 2018-2020 System Reliability Procurement Plan

### Background

The 2006 Act identified a unique opportunity for Rhode Island to systematically identify and procure customer-side resources that were not only cost-effective compared to traditional supply options, but that could also provide a cost-effective path to lower supply and delivery costs to ratepayers in Rhode Island. Least Cost Procurement might provide savings over time for customers and might lower the volatility and cost uncertainty of the larger energy and capacity markets in New England by securing sources of energy supply and capacity from in-state resources and/or by the deferral or avoidance of distribution system investments.

Traditionally, the solutions to problems such as overloaded facilities, low voltage, contingencies, loss of load, asset condition, and system losses have been provided by capital projects that enhance the utility's delivery systems: new circuits, new substations, or larger conductors. As developing technologies continue to make improvements in energy efficiency, load management, energy storage and distributed generation, the range of possible alternative solutions to traditional utility infrastructure can now increasingly consider demand side management, demand response, direct load control, distributed generation, energy storage, and dynamic pricing. As technologies and markets continue to mature and gain momentum, these "non-wires alternatives" (NWAs) are becoming increasingly cost-effective. Recognizing the potential economic benefits of cost-effective NWAs, R.I.G.L. § 39-1-27.7(a)(1) calls for standards for "system reliability" resources to include, but not be limited to: distributed renewable energy resources; cost-effective combined heat and power systems; and demand response designed to provide local system reliability benefits through load control or using on-site generating capacity.

On June 7, 2011, the Commission approved significantly revised System Reliability Procurement Standards (Standards). The revised Standards established a procedure and funding options for systematically identifying customer-side and distributed resources that, if cost-effective, defer or avoid distribution upgrades, improve system reliability, and provide for better utilization of distributed resources. The revised Standards guided the Company's efforts toward integrating

analysis of NWAs into the Company's planning functions and evaluating the specific costs, benefits, and comparability of traditional and NWA solutions.

On June 11, 2014, the Commission approved minor enhancements to the 2011 Standards intended to broaden the range of methods and technologies that should be considered or utilized in the evaluation of NWA projects.

On April 27, 2017, the Commission approved additional enhancements to the 2014 Standards intended to further incorporate NWAs into the company's distribution planning process. The revised Standards allow the distribution company to investigate the application of NWAs to reduce or manage peak load at appropriate times and in specific areas, including, but not limited to, highly utilized distribution systems; where construction is physically constrained; and where some level of new electric growth is anticipated, to prolong the useful lifetime of existing systems.

Section 2.4 (A) of the System Reliability Procurement Standards states:

The distribution company System Reliability Procurement Plan (SRP Plan) submitted on September 1, 2017, and triennially thereafter on September 1, shall describe general planning principles and potential areas of focus for SRP for the three years of implementation, beginning with January 1 of the following year. Such SRP Plans shall include, but are not limited to:

- i. proposed evolutions to definitions, identification, and assessment of non-wires alternatives, which may include, but are not limited to:
  - a. observations and lessons learned from the most recent three-year period,
  - b. trends in distributed energy resource technology and analytics, either grid-side or customer-side, that may influence NWA planning over the three-year period;
- ii. anticipated scope of NWA deployment in the coming three-year period,
  - a. in-progress NWA projects projected to continue and a high-level timeline,

- b. projected areas of focus<sup>1</sup> for distribution planning review that may result in the identification of new NWA projects;
- iii. description of how the SRP Plan complements the objectives of Rhode Island's energy efficiency, renewable energy, and clean energy programs listed in 2.1.C; and
- iv. proposed shareholder incentive framework.

The 2018 – 2020 SRP Plan is being submitted consistent with those Standards and as a part of the larger Least Cost Procurement plan. This Plan describes National Grid's proposed approach to further integrate analysis of NWAs into the Company's transmission and distribution planning functions in Rhode Island. The Standards also stress, and the Company intends to uphold, the importance of continuing to integrate System Reliability Procurement with Energy Efficiency Procurement efforts wherever feasible, to manage demand and optimize grid performance, ~~which the Company intends to do~~.

The Company's established procedure for considering NWAs evaluates potential NWA solutions in parallel to traditional wires solutions. During the period of 2018 – 2020, the Company will continue to evaluate all transmission and distribution (T&D) projects that meet the screening criteria established in Section 2.3 of the 2017 Standards for potential NWA solutions that could reduce, avoid, or defer the traditional wires solution, or prolong the useful lifetime of an existing system.

Feasible NWAs will be compared to traditional wires solutions based on the following, among other, factors:

- Ability to meet the identified system needs;
- Anticipated reliability of the alternatives;
- Risks associated with each alternative;
- Potential for synergy savings based on alternatives that address multiple needs;
- Operational complexity and flexibility;

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<sup>1</sup> It is not anticipated that this will include project specifics, which are dependent on needs and screening; those are expected in annual SRP Reports. In the absence of project specifics or budgets, this section is intended to give a picture of the expected size and scope of NWA efforts during the three-year period and a sense of whether it is expected to grow relative to current activities.

- Implementation issues; and,
- Customer impacts.

To facilitate the screening of potential NWA projects and traditional solutions, the Company will continue to utilize the analytical tools, existing evaluation reports and any relevant data available. For each need where an NWA is determined to be the preferred solution, the Company will develop an implementation plan that includes a detailed characterization of the need (in terms of both maximum kW peak reduction and annual required duration hours), the traditional wires solution, a description of the NWA, and an NWA investment scenario, as outlined in the Standards. This description of the need will include the location and the mix of customers within that location.

Separate from the SRP process, the Company also plans to submit a proposal in the upcoming rate case for the cost of developing and maintaining a RI System Data Portal with some similarities in the portal used for its NY subsidiary that will have a tab that will show a Heat Map as part of this Plan in accordance with the revised Standards. The Heat Map will provide further visibility into the distribution system by identifying highly utilized distribution systems where construction is physically constrained and/or demand growth is anticipated. The Heat Map will identify feeder locations where the deployment of NWAs and Distributed Energy Resources could provide benefits to the system by reducing or managing load. As in the past, annual system reliability procurement reports will continue to be submitted to the Commission for consideration on November 1, 2017, and on October 15 in each of the two years thereafter. The annual reports will include, among other information, a summary of where NWAs were considered, identification of projects where NWAs were selected as a preferred solution, an implementation and funding plan for selected and ongoing NWA projects, and recommendations for demonstration distribution or transmission projects for which the Company will use selected NWA reliability and capacity strategies. The annual Report will direct parties to the RI System Data Portal which will show the feeders identified through the Heat Map process, along with annual kW reduction and duration goals. Once the annual plan is approved by the PUC, the Company will provide quarterly updates on the progress of any approved demonstration project(s) to the EERMC and Collaborative Subcommittee.

The Company and its stakeholders are also exploring the possibility of considering NWA solutions earlier in the planning process and incorporating market solicitations to third parties for potential distributed energy resource solutions. This strategy is similar to the process employed by the Company in its procurement of a battery storage solution for the Tiverton/Little Compton NWA in 2016/2017.

Comment [LF1]: Added to address comments from DPUC and OER

## 2018 – 2020 Areas of Focus

### Tiverton and Little Compton, RI

The 2017 SRP Report (Docket No. 4655) marked the final implementation year of the DemandLink™ pilot in Tiverton and Little Compton, which the company originally proposed in the 2012 System Reliability Procurement Report – Supplement (2012 SRP Report) Docket 4296. The purpose of the Pilot was to test the use of customer demand response and targeted energy efficiency as a means of managing local distribution capacity requirements during peak periods. The goal of the pilot is to create 1 MW of load relief by the end of 2017 in order to defer a new substation feeder until 2018.

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As detailed in the 2017 SRP Report, the Company issued a Request for Proposals (RFP) in 2017 for ~~an~~ additional load relief. The Company issued a contract to a proposal for a battery storage system that was originally assumed to be able to provide an additional 250 kW of load relief during the summer of 2017. Due to the procurement process, this project has been delayed, but is expected to provide load relief for the summer of 2018, and could offer load relief for up to two additional years if pricing can be provided that continues to meet the overall cost benefit analysis. Therefore the savings for 2017 will continue to come from existing pilot initiatives such as incentives for wi-fi thermostats on central AC systems with demand response, heat pump water heaters, window AC purchases, and recycling, and targeted energy efficiency.

The Company won't know if it met its 1 MW goal until the evaluation results are final in early 2018. However, even if the 1 MW goal is achieved and the new substation feeder can continue to be deferred, recent analysis shows the two feeders serving the area are still between 95% and 99% loading pending the severity of the summer weather. Loading remains high enough that continued load relief efforts in the pilot area would be beneficial. Depending on need, National

Grid will engage customers via direct load control mechanisms already in place and described herein in the annual SRP reports. ~~Newer ways of engaging customers such as voice control technologies and customer messaging to elicit a behavioral response during times of system need that can also be used. The Company plans to move away from company provided thermostats but it has the appropriate systems in place to add on a Bring Your Own Thermostat program to expand program reach.~~ Additionally, the Company may extend or increase grid side solutions via its battery storage vendor or other ~~company~~ Company controlled technologies.

### Heat Maps

While the Company plans to continue screening transmission and distribution projects against the NWA criteria over the next three-years, it is possible that no projects will be identified due to minimal load growth in Rhode Island. ~~Asset condition remains a key driver of infrastructure investment in Rhode Island.~~ In an effort to further promote NWAs in accordance with the revised Standards, the Company will ~~shift its efforts to focus on~~ prioritize the development and deployment of the RI System Data Portal which will have a Heat Map component to identify opportunities where NWAs can be utilized to reduce or manage load in areas, including, but not limited to, highly utilized distribution systems; where construction is physically constrained; and where demand growth is anticipated, to prolong the useful lifetime of existing systems.

Highly utilized areas are those stations and circuits within a relatively compact geography that have loading near but not exceeding distribution planning mitigation guidelines under current forecasting scenarios. Often times they are linked to physically constrained construction areas (heavy urban environments). While such areas are not new to distribution planning they are becoming more widespread as state wide growth rates remain slightly above zero and do represent operational challenges. As the loading slowly increases, contingency issues increase as shown in the Chart 1 below. Additionally, the sudden application of modest customer loads could ~~equate to~~ create a load impact equivalent to many years of annual growth.

~~As can be seen in The chart and Table 1 table below, Cases 5 and 6 illustrate how~~ the risk of a contingency situation increases as the feeder nears 100% loading. As the feeder approaches that limit, the maximum annual load growth rate that can be accommodated is reduced. As a result, a 1MW customer coming on line late in the feeder's bandwidth will have a similar impact as a 10 or 20MW customer coming on line early in the feeder's bandwidth. a modest 1 megawatt load

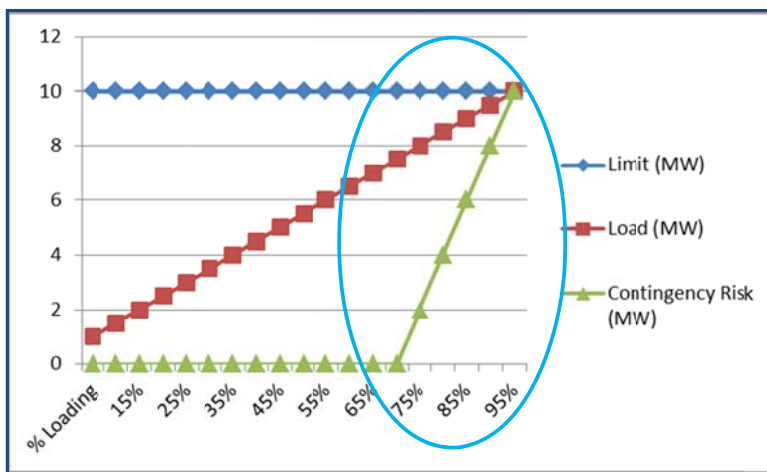
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Comment [LF2]: Added to address comments from DPUC and OER.

Comment [LF3]: Clarified language in response to OER/DPUC's comments.

could equate to 10 or 20 years of growth respectively. These cases/situations will become more prevalent if current growth rates continue. Such systems and would will result in an increased frequency of unexpected, short-term, normal-system overloads requiring which would require resolution through a significant infrastructure investment.

**Chart 1 - Contingency Risk for Highly Loaded Systems**



Case	1	2	3	4	5	6
% Loading	70%	75%	80%	85%	90%	95%
Maximum yearly growth rate that can be accommodated (10 year period)	3.6%	2.9%	2.3%	1.6%	1.1%	0.5%
Maximum per year growth (MW)	0.300	0.250	0.200	0.150	0.100	0.050
Years equivalent to a 1 MW customer	3.3	4.0	5.0	6.7	10.0	20.0

With customer service expectations ever increasing and the issues described above, a utility may be inclined to revise its guidelines to encourage infrastructure investment at lower system loading percentages. Instead, the Heat Map concept allows or encourages Distributed Energy Resources (DER), targeted energy efficiency, and demand reduction technologies to be deployed prior to a utility applying or changing distribution investment rules. There are a variety of potential benefits to be explored under this approach:

- Indefinite deferral of load relief related investment. With continued low growth rates, the successful deployment of cost-effective DER, energy efficiency, and demand response

through the Heat Map would reduce the load relief component of any system plan. Over time, this would result in less new feeders and less equipment upgrades.

- The advanced or preemptive nature of the Heat Map concept allows the utility to observe DER performance and success before system risks become untenable.<sup>2</sup>
- The Heat Map is an example of the type of information dissemination demonstrated by utilities across the United States to satisfy various energy policy and DER developer needs. This particular example is intended to link loading and time of day opportunities throughout the distribution system. An expected learning is the value or use of such information in faster determination and development of the DER solution to achieve the load reduction at the proper time.

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In preparation for the 2018 SRP Report filing, the Company has taken the initial steps of developing a Heat Map by identifying highly utilized areas in Northwest Rhode Island. This process included typical study tasks such as circuit modeling and data gathering plus improved distributed generation modeling. With modeling complete, cases were developed to test the possible interpretation and uses of the heat map. The cases suggested further refinement is needed in end user simplicity to help indicate the best time, type, and distribution of the possible energy resources. Example figures are shown below demonstrating one of the interpretation challenges. A quick review of the figures indicates loading issues occur in close proximity to the substations while voltage issues occur furthest from the stations. The Company plans to test and observe whether the voltage information adds value indicating additional system benefits or simply confuses the end users.

An example of a feeder that was identified through this process is the 38F1 circuit in Northwest Rhode Island. This circuit is predicted to have approximately 2.5 miles of highly loaded (80%-100%) mainline within a 15 year study forecast horizon. Currently the feeder peaks during the summer at 5:30PM. To reduce loading below 80%, a peak reduction of 2,600 kilowatts is required. Generic solar distributed generation analysis shows a 27% nameplate contribution or reduction to peak for the 5 PM hour. Therefore 2,600 kilowatts at 5:30PM would require a 9,800 kilowatt solar generator. In this example, solar generation alone may not be the most economical

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<sup>2</sup> One of the Tiverton NWA learnings was the need for a backup plan should the DER customer participation lag or drop off from necessary levels. Due to infrastructure investment design, permitting, and construction timelines it is unreasonable to expect the utility to back up a DER plan without some advanced notice.



solution. Perhaps targeted energy efficiency (street and neighborhood level targets), some form of distributed generation, and/or energy storage would address this issue and this is the purpose and expected learning from the Heat Map concept. The Company would weigh any proposed non wires solution, whether identified through a request for proposal or identified by the Company, on its ability to provide feeder load relief at the ~~correct~~ time of peak loading and duration and on its costs and benefits as required by the Standards.

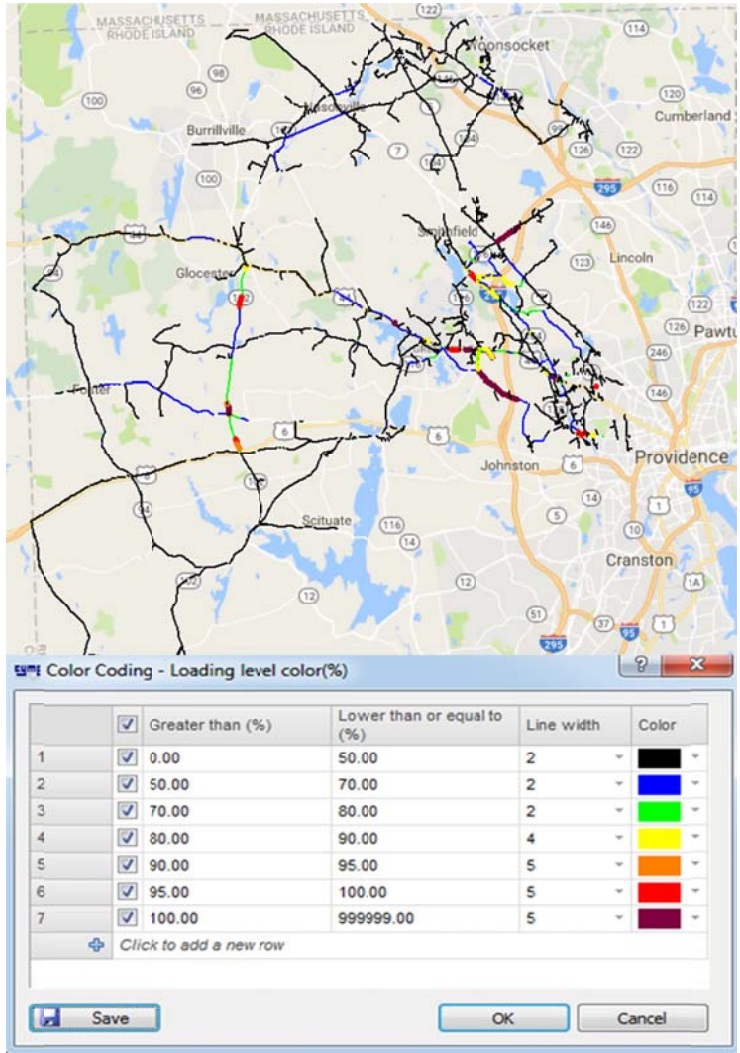
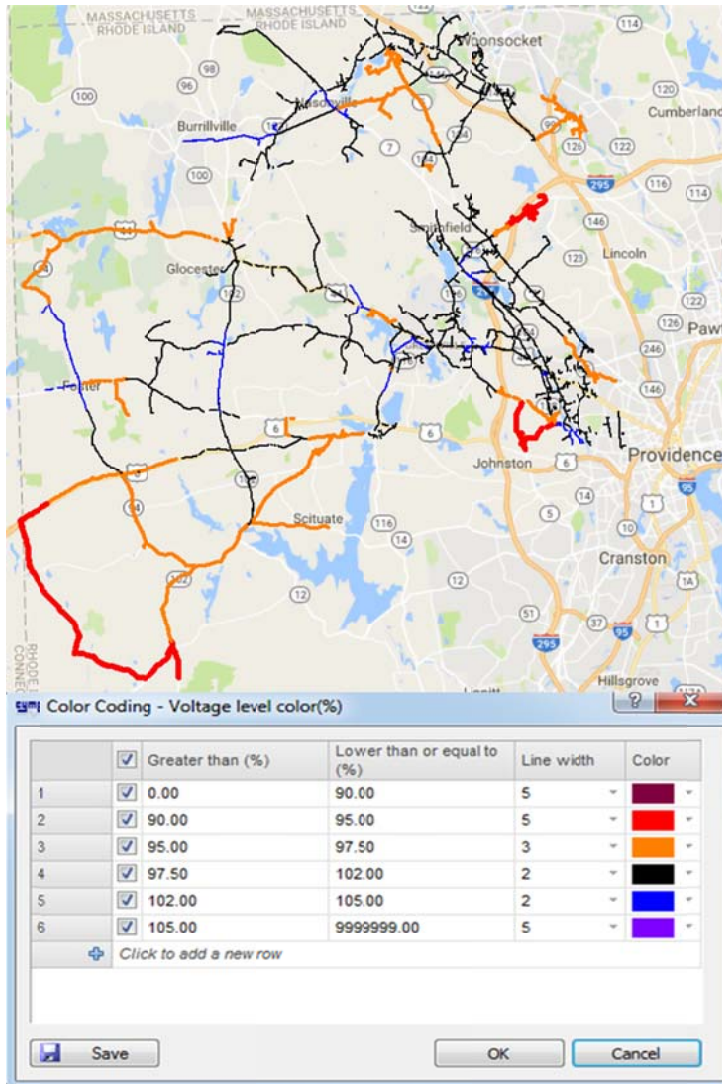


Figure 1: Heat Map Example Loading

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**Figure 2: Heat Map Example Voltage**

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National Grid plans to control development costs of this concept through incorporation of the Heat Map within and existing ongoing distribution studies. In this manner, the Company can leverage data gathering, model development, and similar analysis steps to keep Heat Map costs

as low as possible. Once the learnings are achieved, the most efficient and effective state-wide deployment will be presented.

### Partial NWAs

In 2015-2017, the Company began to explore the idea of deploying partial NWAs, which are NWAs developed to reduce the size or scope of a traditional investment rather than an entire project. In the 2016 SRP Report, the Company committed to reviewing the potential for integrating partial NWA consideration into its distribution planning process. In the 2017 SRP Report, the Company described a project in Bristol and Warren, RI that was reviewed as a potential partial NWA location. While the partial-project ultimately did not pass the NWA screening, the Company was successful in executing a process to review the project as a partial NWA. The Company will continue to implement this process for areas reviewed in the 2018-2020 timeframe.

Comment [LF4]: Added this section to address comments from the OER and DPUC.

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### **NWA Technology Options**

In 2015-2017, the Company continued deploying baseline energy efficiency, and geographically focused energy efficiency and demand response and introduced new technologies including, heat pump water heaters to replace traditional units, incorporating solar, and has begun the process for energy storage. Over the next three years, the Company will continue to explore new technologies to provide additional non-wires solutions listed below.

#### A. Customer-side NWAs:

1. energy efficiency baseline services,
2. peak demand and geographically-focused supplemental energy efficiency strategies,
3. distributed generation generally, including combined heat and power and renewable energy resources,
4. demand response,
5. direct load control including BYOT control capability,
6. energy storage,
7. electric vehicles and EV control technology,
8. controllable or dispatchable electric heat or cooling,
9. alternative metering and tariff options, including time-varying rates.

#### B. Distribution company investment in grid-side tools and technologies.

#### C. Grid-wide NWAs may include, but are not limited to:

1. energy storage,
2. voltage management,
3. communications systems,
4. grid-optimization technologies including Distributed System Platform,
5. generation to provide, or in support of, any or all of B(ii)(1)-(4), consistent with Rhode Island General Laws.

D. Combinations of NWAs (both customer-side and grid-side) and combinations of NWAs with traditional infrastructure investments.

## Funding

As in the 2015-2017 Plan, this Plan does not project a three-year budget for SRP expenditures.

Typically, NWAs are identified as the preferred solution to a system need on a rolling basis. ~~It cannot be predicted how many~~ The number of NWA projects that will be identified and implemented over the three- year period cannot be proactively determined. In addition, the components and structure of any given NWA solution, as well as its duration, are highly dependent on the situational characteristics of the system need for which it is being designed.

~~The Company is still awaiting results from the 2017 summer season to inform the future continuation of the Tiverton and Little Compton pilot and therefore costs will not be known by the time of this filing. In addition, the~~ The Company has identified the need for a RI System Data Portal to show potential Heat Map feeders in this plan but the incremental annual targets and potential solutions will not be known until the Annual filing. These unknowns make illustrative budgeting for System Reliability Procurement ~~quite~~ difficult and are why budgeting in this Plan is not required in Section 2.4 of the Standards.

Comment [LF5]: These costs are already established to be included in the annual plans only. No need to reiterate here.

However, as in the past, annual system reliability procurement budgets will be submitted to the PUC on November 1 of each year. Section 2.5 v. of the Standards for system reliability procurement approved by the PUC on April 27, 2017 describe five possible funding sources for system reliability investments, including:

1. capital funds that would otherwise be applied towards traditional wires based alternatives, where the costs for the NWA are properly capitalized under generally accepted

accounting principles and can be properly placed in rate base for recovery in rates along with other ordinary infrastructure investments,

2. existing distribution company EE investments, as required in Chapter 1 of these Standards, and the resulting Annual Plans,
3. additional energy efficiency funds to the extent that the energy efficiency-related NWA can be shown to pass the cost-benefit test, as outlined in Chapter 1 of these Standards, and such additional funding is approved,
4. utility operating expenses, to the extent that recovery of such funding is explicitly allowed,
5. identification of customer contribution or third-party investment that may be part of a NWA based on benefits that are expected to accrue to the specific customers or third parties,
6. any other funding sources that might be required and available to complete the NWA;

## Shareholder Incentive

### Proposal

The Company is proposing a shareholder incentive mechanism in accordance with Section 2.4(A)(iv) and Section 2.6 of the Proposed Revisions to the Least Cost Procurement Standards included in the RI Energy Efficiency and Resource Management Council (EERMC) - Proposed Energy Efficiency Savings Targets, 2018-2020 (Docket 4684), and approved at the Open Meeting on April 27, 2017.

The Company proposes to apply the current energy efficiency shareholder incentive mechanism to the SRP plan with minor adjustments. The energy efficiency incentive structure is a proven, transparent, simple, straightforward mechanism that is an appropriate model for SRP. Similar to energy efficiency, The Company is committed to working with the OER, the DPUC, the EERMC, and the Collaborative to consider modifications to the SRP incentive structure ~~can be modified~~ in future annual filings as the energy landscape evolves and to incorporate future outcomes of the Power Sector Transformation initiative.

Under the current energy efficiency incentive structure, the Company can earn a target based-incentive rate equal to 5.0% of the eligible spending budget in a program year for achieving

electric and gas energy savings goals. The Company must attain a threshold level of 75% of its savings goal before it can earn an incentive.

The Company is proposing to modify ~~these two aspects~~one aspect of the energy efficiency structure for SRP. The Company proposes to modify the target based-incentive rate for SRP to 9.0% of the eligible annual spending budget for achieving demand (kW) savings goals. The aim of the percentage increase is to create equal emphasis on the development of both wires and non-wires solutions by mirroring what the Company can earn on ~~supply-side resources~~infrastructure investments such as distribution projects.

~~The Company also proposes to lower threshold performance level from 75% to 50% of the annual kW goal. The lower threshold reflects the fact that NWAs and the Heat Map are less mature than energy efficiency.~~

Comment [LF6]: Removed based on comments from DPUC, OER and Acadia Center. The performance level will remain at 75%. The 50% was based on a recommendation from a non-Company party at a previous meeting, but the Company is comfortable with 75%.

The remaining aspects of the energy efficiency incentive structure will remain the same for SRP including the threshold performance level of 75% and the mechanism for calculating how much of the above target incentive the Company can earn. The proposed incentive mechanism establishes an incentive of 1.25% of the annual spending budget for achieving ~~50~~75% of the savings goals in a sector. This would increase linearly to ~~59~~9% of the annual spending budget for achieving 100% and increase linearly from that point to ~~61~~11.25% of the annual spending budget for achieving 125% of the savings goals.

Expressed mathematically, the shareholder incentive for the 2018, 2019, and 2020 SRP Plans would be calculated as follows for kW savings, where SB is the Annual Spending Budget for SRP:

- From ~~50~~75% of savings to 100% of savings:
  - Incentive = SB x (0.15 x % of savings achieved – 0.10)
- From 100% of savings to 125% of savings:
  - Incentive = SB x (0.09 x % of savings achieved)

The Company believes this structure will incent the Company to achieve savings that approach or exceed 100% of the annual goals. It does so by setting the threshold for savings required to earn an incentive at ~~50~~75% of the annual savings goals, by creating a steep slope to earn a

greater incentive in the range of 75% of savings to 100% of savings, by establishing the target incentive at 9.0% of the annual spending budget, and by offering a higher incentive for exceeding 100% of the annual goals.

The threshold performance level for demand savings will be set at ~~50~~75% of the annual kW goal. The Company must attain at least this threshold level of savings before it can earn an incentive. The Company will have the ability to earn an incentive for each kW saved, once threshold savings are achieved. The cap for the target incentive amount of kW savings will remain at 125%.

The ability to earn up to 125% of the target incentive is worthwhile because Rhode Island customers will realize additional benefits if the Company achieves a high level of demand savings performance. Given budget ~~control~~ requirements, this feature will provide the Company with an incentive to improve the efficiency of its program implementation efforts while providing Rhode Island customers with value in excess of the incremental incentive that may be earned by the Company. That is, the Company will have an incentive to increase customers' savings and customers will realize an overwhelming majority of the savings.

In order to encourage the most efficient use of customer funds, the following mechanism from the energy efficiency incentive will also be applied to SRP. If the actual spending at year end is less than the planned spending by more than five percent, and if achieved savings exceed 100% of the target savings goal, the savings goal will be adjusted by the ratio of actual spend to the planned spend. Conversely, if the actual spend at year end is greater than the planned spend by more than five percent, and if achieved savings are less than 100% of the target savings goal, the savings goal will be adjusted by the ratio of actual spend to the planned spend.

The Company concludes that the SRP incentive proposal is in accordance with the 2017 Standards. It is clearly focused on achieving annual kW reduction goals with transparent metrics around determining performance. The design of the incentive is tied directly to spend only occurring in the SRP program and therefore ensures that there is no duplication of incentive across other Company filings

### **Illustration**



The table below provides an illustration for what the proposed incentive structure applied to the 2017 SRP Plan.

	<b>2017 Plan</b>
<b>Spending Budget</b>	\$400,305
<b>Target Shareholder Incentive</b>	\$36,027
<b>Total Benefits</b>	\$1,412,383

### **Conclusion**

The Standards approved by the PUC on June 7, 2011 and modified on June 11, 2014 and April 27, 2017 promote a framework for considering and integrating NWAs as possible solutions to planning and reliability issues. As in the past, in the annual SRP Reports, the Company will continue to report on Heat Maps and progress towards identified savings goals, projects where NWAs were considered, projects where NWAs were selected as a preferred solution, and recommendations on pilot distribution projects that will utilize NWA reliability and capacity strategies.

**2018-2020 Energy Efficiency Plan  
Electric Funding Plan**

**PART A: TOTAL FUNDING AND GOALS**

	2017	2018	2019*	2020	Three Year Total
1) Projected kWh Sales:	7,503,692,780	7,458,294,598	7,462,072,041	7,437,757,554	
2) Currently Effective EE Charge	\$ 0.01077	\$ 0.01077	\$ 0.01077	\$ 0.01077	
3) <b>Projected DSM Revenues from DSM Charge = (1) x (2)</b>	<b>\$ 80,814,771</b>	<b>\$ 80,325,833</b>	<b>\$ 80,366,516</b>	<b>\$ 80,104,649</b>	<b>\$ 240,796,998</b>
<b>Other Sources of DSM Funding</b>					
4a) Projected Commitments from prior year	\$ -	\$ -	\$ -	\$ 4,000,000	\$ 4,000,000
4b) Projected Entering Fund Balance and Interest:	\$ (2,677,637)	\$ 10,695,594	\$ 0	\$ 0	\$ 10,695,594
4c) Projected Capacity FCM Payments from ISO-NE:	\$ 12,031,837	\$ 24,743,137	\$ 22,607,901	\$ 17,481,764	\$ 64,832,802
4d) Projected RGGI Proceeds	\$ 2,009,452				
4) <b>Subtotal Other Sources of DSM Funding</b>	<b>\$ 11,363,652</b>	<b>\$ 35,438,731</b>	<b>\$ 22,607,901</b>	<b>\$ 21,481,764</b>	<b>\$ 79,528,396</b>
5) <b>Projected Funding Available from Traditional Sources = (3) + (4)</b>	<b>\$ 92,178,423</b>	<b>\$ 115,764,564</b>	<b>\$ 102,974,417</b>	<b>\$ 101,586,413</b>	<b>\$ 320,325,394</b>
6) <b>Implementation Budget</b>	<b>\$ 88,510,554.82</b>	<b>\$ 96,634,953.46</b>	<b>\$ 113,272,514</b>	<b>\$ 102,229,204</b>	<b>\$ 312,136,672</b>
<b>Other Expenses</b>					
7a) Estimated Commitments to Future Years	\$ -	\$ -	\$ 4,000,000	\$ -	\$ 4,000,000
7b) Target Incentive	\$ 4,425,528	\$ 4,831,748	\$ 5,663,626	\$ 5,111,460	\$ 15,606,834
7c) EERMC Expenses	\$ 816,252	\$ 790,579	\$ 998,425	\$ 874,680	\$ 2,663,685
7d) OER Expenses	\$ 816,252	\$ 790,579	\$ 998,425	\$ 874,680	\$ 2,663,685
7) <b>Subtotal Additions to Program Expenses</b>	<b>\$ 6,058,031</b>	<b>\$ 6,412,906</b>	<b>\$ 11,660,476</b>	<b>\$ 6,860,821</b>	<b>\$ 24,934,203</b>
8) RI Legislation Budget Request	\$ -	\$ 12,500,000	\$ -	\$ -	\$ 12,500,000
9) <b>Total Funding Required = (6) + (7) + (8)</b>	<b>\$ 94,568,586</b>	<b>\$ 115,547,860</b>	<b>\$ 124,932,991</b>	<b>\$ 109,090,025</b>	<b>\$ 349,570,875</b>

**PART B: FULLY RECONCILING FUNDING**

10) Projected Funding Available = (5)	\$ 92,178,423	\$ 115,764,564	\$ 102,974,417	\$ 101,586,413	\$ 320,325,394
11) Fully Reconciling funding needed from additional source = (8) - (9)	\$ 2,390,163	\$ (216,704)	\$ 21,958,574	\$ 7,503,612	\$ 29,245,482
12) Fully Reconciling funding charge per kWh = (10) / (1)	\$ 0.00031	\$ (0.00002)	\$ 0.00294	\$ 0.00100	
13) Currently Effective EE Charge = (2)	\$ 0.01077	\$ 0.01077	\$ 0.01077	\$ 0.01077	
<b>Proposed Adjustment to Reflect Fully Reconciling Funding Mechanism = (11) + (12)</b>					
14) Proposed System Reliability Factor per kWh, excluding uncollectible recovery:	\$ 0.00002	\$ 0.00002	\$ 0.00002	\$ 0.00002	
16) Currently Effective Uncollectible Rate	1.25%	1.25%	1.25%	1.25%	
17) <b>Proposed Energy Efficiency Program charge per kWh, including uncollectible recovery = (13)+(14) / (1-(15))</b>	<b>\$ 0.01124</b>	<b>\$ 0.01090</b>	<b>\$ 0.01390</b>	<b>\$ 0.01193</b>	

**PART C: Plan TARGETS AND COST/LIFETIME kWh**

18) Plan Target, Annual Net MWh	201,347	179,968	194,677	189,509	564,154
19) Plan Target, Annual Net Peak kW Savings	28,543	29,639	35,188	34,224	99,051
20) Plan Target, Net Lifetime MWh	2,065,732	1,712,064	1,904,592	2,160,318	5,776,974
<b>RI Test</b>					
21a) Total benefits	\$ 373,004,694	\$ 438,942,301	\$ 451,782,884	\$ 1,263,729,880	
22a) Net benefits = (21a) - (9)	\$ 257,456,835	\$ 314,009,310	\$ 342,692,859	\$ 914,159,004	
23) Customer Costs	\$ 24,104,979	\$ 27,490,604	\$ 30,574,406	\$ 82,169,989	
24a) Cost/lifetime kWh = ((9) + (23)) / (20)*1000	\$ 0.071	\$ 0.077	\$ 0.062	\$ 0.070	
25a) Benefit Cost Ratio = (21a) / ((9) + (23))	\$ 2.93	\$ 2.88	\$ 3.23	\$ 2.93	
26a) Utility Spending per lifetime kWh = ((6)+(7b)) / (20)) / 1000	\$ 0.059	\$ 0.062	\$ 0.050	\$ 0.057	
<b>TRC Test</b>					
21b) Total benefits	\$ 247,871,847	\$ 238,486,733	\$ 287,248,549	\$ 297,271,014	\$ 823,006,297
22b) Net benefits = (21b) - (9)	\$ 153,303,261	\$ 122,938,874	\$ 162,315,559	\$ 188,180,989	\$ 473,435,422
23) Customer Costs	\$ 29,534,595	\$ 24,104,979	\$ 27,490,604	\$ 30,574,406	\$ 82,169,989
24b) Cost/lifetime kWh = ((9) + (23)) / (20)*1000	\$ 0.058	\$ 0.071	\$ 0.077	\$ 0.062	\$ 0.070
25b) Benefit Cost Ratio = (21b) / ((9) + (23))	\$ 2.00	\$ 1.88	\$ 1.88	\$ 2.13	\$ 1.91
26b) Utility Spending per lifetime kWh = ((6)+(7b)) / (20)) / 1000	\$ 0.045	\$ 0.059	\$ 0.062	\$ 0.050	\$ 0.057

**Notes:**

- 1 Sales from Company sales forecast (Fall 2016) and includes Streetlights. The forecast is expected to be updated in Fall 2017 and will be used in the 2018 EE Annual Plan.
- 2 2016 EE Charge includes uncollectible recovery and System Reliability factor. See Line 13, Table E-1, Attachment 5 - 2016 EE Plan, Docket 4580.
- 4b Projected Entering Fund Balance source is the projected 2017 Year-End Fund Balance with actuals through June 2017. Fund balance assumed to be \$0 in 2019 and 2020 as part of Fully Reconciling Funding.
- 4c FCM Payments based on internal estimates.
- 6 Program expenses include implementation and evaluation expenses. Do not include RIIB funding, OER, EERMC, or target shareholder incentives.
- 7b Target incentive is equal to 5% of program expenses.
- 7c EERMC Expenses equal to 2% of total collections from customers' Energy Efficiency Program Charge, reduced by 1%.
- 7d OER Expenses equal to 2% of total collections from customers' Energy Efficiency Program Charge, reduced by 1%.
- 21-26 21-26a reflects benefit/cost using the RI Test and 21-26b reflects benefit/cost using the TRC Test
- 24a&b Excludes \$12.5 M legislation cost since it is not an energy efficiency expense.
- 25a&b Excludes \$12.5 M legislation cost since it is not an energy efficiency expense.
- \*2019 includes 25,539 Annual MWh and correlated costs and benefits, as an adder for future innovation.

**2018-2020 Energy Efficiency Plan  
Gas Funding Plan**

<b>PART A: TOTAL FUNDING AND GOALS</b>		<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>Three Year Total</b>
1)	Projected Dth Sales:	39,804,237	38,149,821	38,509,934	38,825,806	
2)	Currently Effective Average EE Charge	\$ 0.596	\$ 0.780	\$ 0.780	\$ 0.780	
3)	<b>Projected DSM Revenues from DSM Charge = (1) x (2)</b>	\$ 23,727,856	\$ 29,771,711	\$ 30,052,740	\$ 30,299,242	\$ 90,123,693
<b>Other Sources of DSM Funding</b>						
4a)	Projected Commitments from prior year	0	0	0	0	\$ -
4b)	Projected Entering Fund Balance and Interest:	\$ (1,515,724)	\$ (378,798)	0	0	\$ (378,798)
4c)	Low Income Weatherization in Base Rates	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 600,000
4)	<b>Subtotal Other Sources of DSM Funding</b>	\$ (1,315,724)	\$ (178,798)	\$ 200,000	\$ 200,000	\$ 221,202
5)	<b>Projected Funding Available from Traditional Sources = (3) + (4)</b>	\$ 22,412,131	\$ 29,592,914	\$ 30,252,740	\$ 30,499,242	\$ 90,344,896
6)	<b>Implementation Budget</b>	\$ 27,750,991	\$ 27,408,372	\$ 28,709,749	\$ 29,707,869	\$ 85,825,990
<b>Other Expenses</b>						
7a)	Estimated Commitments to Future Years	\$ -	\$ -	\$ -	\$ -	\$ -
7b)	Target Incentive	\$ 1,387,550	\$ 1,370,419	\$ 1,435,487	\$ 1,485,393	\$ 4,291,299
7c)	EERMC Expenses	\$ 304,264	\$ 310,540	\$ 315,396	\$ 326,525	\$ 952,461
7d)	OER Expenses	\$ 304,264	\$ 310,540	\$ 315,396	\$ 326,525	\$ 952,461
7)	<b>Subtotal Additions to Program Expenses</b>	\$ 1,996,077	\$ 1,991,498	\$ 2,066,280	\$ 2,138,444	\$ 6,196,221
8)	<b>Total Funding Required = (6) + (7)</b>	\$ 29,747,068	\$ 29,399,869	\$ 30,776,029	\$ 31,846,313	\$ 92,022,211
<b>PART B: POTENTIAL INCREMENTAL FUNDING NEEDED</b>						
9)	Projected Funding Available = (5)	\$ 22,412,131	\$ 29,592,914	\$ 30,252,740	\$ 30,499,242	\$ 90,344,896
10)	Fully Reconciling funding needed from additional source = (8) - (9)	\$ 7,334,936	\$ (193,044)	\$ 523,290	\$ 1,347,070	\$ 1,677,316
11)	Fully Reconciling funding charge per Dth = (10) / (1)	\$ 0.184	\$ (0.005)	\$ 0.013	\$ 0.034	
12)	Currently Effective Average EE Charge = (2)	\$ 0.596	\$ 0.780	\$ 0.780	\$ 0.780	
Proposed Adjustment to Reflect Fully Reconciling Funding Mechanism = (11) + (12)						
13)		\$ 0.780	\$ 0.775	\$ 0.793	\$ 0.814	
14)	Currently Effective Uncollectible Rate	<u>3.18%</u>	<u>3.18%</u>	<u>3.18%</u>	<u>3.18%</u>	
<b>Proposed Average Energy Efficiency Program charge per Dth including uncollectible recovery = (13) / (1-(14))</b>						
15)		\$ 0.805	\$ 0.800	\$ 0.819	\$ 0.841	
Proposed Residential Energy Efficiency Program charge per Dth including uncollectible recovery						
15a)		\$ 0.888	\$ 0.882	\$ 0.903	\$ 0.928	
Proposed Commercial & Industrial Energy Efficiency Program charge per Dth including uncollectible recovery						
15b)		\$ 0.726	\$ 0.721	\$ 0.739	\$ 0.758	
<b>PART C: PLAN TARGETS AND COST/LIFETIME Dth</b>						
16)	Plan Target, Annual Dth	414,606	384,486	396,859	405,373	1,186,717
17)	Plan Target, Lifetime Dth	4,945,564	4,391,662	4,553,143	4,682,906	13,627,710
<b>RI Test</b>						
18a)	Total benefits	\$	\$ 97,702,163	\$ 101,369,221	\$ 104,184,334	\$ 303,255,718
19a)	Net benefits = (18a) - (8)	\$	\$ 68,302,293	\$ 70,593,192	\$ 72,338,021	\$ 211,233,507
20)	Customer Costs	\$	\$ 9,177,429	\$ 9,890,893	\$ 10,284,820	\$ 29,353,141
21a)	Cost/lifetime Dth = ((8) + (20)-(7b)) / (17)	\$	\$ 8.47	\$ 8.62	\$ 8.68	\$ 8.91
22a)	Benefit-Cost Ratio = (18a) / (8) + (20)	\$	\$ 2.53	\$ 2.49	\$ 2.47	\$ 2.50
23a)	Utility Spending per lifetime Dth = ((6)+(7b)) / (17)	\$	\$ 6.55	\$ 6.62	\$ 6.66	\$ 6.61
<b>TRC Test</b>						
18b)	Total benefits	\$	\$ 66,558,401	\$ 59,359,761	\$ 62,581,346	\$ 186,951,834
19b)	Net benefits = (18) - (8)	\$	\$ 36,811,333	\$ 29,959,892	\$ 31,805,317	\$ 94,929,622
20)	Customer Costs	\$	\$ 10,992,016	\$ 9,177,429	\$ 9,890,893	\$ 29,353,141
21b)	Cost/lifetime Dth = ((8) + (20)-(7b)) / (17)	\$	\$ 7.96	\$ 8.47	\$ 8.62	\$ 8.59
22b)	Benefit-Cost Ratio = (18b) / (8) + (20)	\$	\$ 1.63	\$ 1.54	\$ 1.54	\$ 1.54
23b)	Utility Spending per lifetime Dth = ((6)+ (7b)) / (17)	\$	\$ 5.89	\$ 6.55	\$ 6.62	\$ 6.61

**Line Notes:**

1 From the Company's Summer 2017 Gas Forecast. Includes projections for firm and non-firm customers, excludes exempt DG customers.

2 The Currently Effective Average Charge is illustrated as one charge, shared among residential and commercial customers. The charge is separated into separate charges by customer segment on lines 15a and 15b.

4a There are no commitments planned at this time.

4b Projected Entering Fund Balance source is the projected 2017 Year-End Fund Balance with actuals through June 2017. Fund balance assumed to be \$0 in 2019 and 2020 as part of Fully Reconciling Funding.

7b Target incentive is equal to 5.0% of program expenses

7c EERMC Expenses equal to 2% of total collections from customers' Energy Efficiency Program Charge, reduced by 1%.

7d OER Expenses equal to 2% of total collections from customers' Energy Efficiency Program Charge, reduced by 1%.

The proposed charges by sector are an illustration for the first draft. The calculations will be updated for the final draft. 3YP is projected at a portfolio level therefore the split between residential and C&I charges is based of 2017 Annual Plan and 15a & 15b will be updated in subsequent Annual Plans.

21-26 21-26a reflects benefit/cost using the RI Test and 21-26b reflects benefit/cost using the TRC Test

## Shareholder Incentive

### Proposal

The Company is proposing a shareholder incentive mechanism in accordance with Section 2.4(A)(iv) and Section 2.6 of the Proposed Revisions to the Least Cost Procurement Standards included in the RI Energy Efficiency and Resource Management Council (EERMC) - Proposed Energy Efficiency Savings Targets, 2018-2020 (Docket 4684), and approved at the Open Meeting on April 27, 2017.

The Company proposes to apply the current energy efficiency shareholder incentive mechanism to the SRP plan with minor adjustments. The energy efficiency incentive structure is a proven, transparent, simple, straightforward mechanism that is an appropriate model for SRP. Similar to energy efficiency, the SRP incentive structure can be modified in future annual filings as the energy landscape evolves.

Under the current energy efficiency incentive structure, the Company can earn a target based-incentive rate equal to 5.0% of the eligible spending budget in a program year for achieving electric and gas energy savings goals. The Company must attain a threshold level of 75% of its savings goal before it can earn an incentive.

The Company proposes to adopt the energy efficiency mechanism for SRP with an incentive level that will be, at a minimum, the percent of spend as per the energy efficiency programs, up to a percentage of spend that would mirror a standard wires investment. The differential percentage between these two amounts would be determined in consultation with the parties to properly incent the Company to invest in non-wires opportunities in lieu of a capital investment made in the annual ISR filing. ~~is proposing to modify one aspect of the energy efficiency structure for SRP. The Company proposes to modify the target based incentive rate for SRP to 9.0% of the eligible annual spending budget for achieving demand (kW) savings goals.~~ The aim of the percentage increase is to create equal emphasis on the development of both wires and non-wires solutions by mirroring what the Company can earn on infrastructure investments such as distribution projects.

The remaining aspects of the energy efficiency incentive structure will remain the same for SRP, including the threshold performance level of 75% and the mechanism for calculating how much of the above target incentive the Company can earn. ~~The proposed incentive mechanism establishes an incentive of 1.25% of the annual spending budget for achieving 75% of the savings goals in a sector. This would increase linearly to 9% the target percentage of the annual spending budget for achieving 100% and increase linearly from that point to an additional 10.25% above the target percentage of the annual spending budget for achieving 125% of the savings goals.~~

~~Expressed mathematically, the shareholder incentive for the 2018, 2019, and 2020 SRP Plans would be calculated as follows for kW savings, where SB is the Annual Spending Budget for SRP:~~

- ~~• From 75% of savings to 100% of savings:
  - ~~○ Incentive = SB x (0.19 x % of savings achieved - 0.10)~~~~
- ~~• From 100% of savings to 125% of savings:
  - ~~○ Incentive = SB x (0.09 x % of savings achieved)~~~~

~~The Company believes this structure will incent the Company to achieve savings that approach or exceed 100% of the annual goals. It does so by setting the threshold for savings required to earn an incentive at 75% of the annual savings goals, by creating a steep slope to earn a greater incentive in the range of 85% of savings to 100% of savings, by establishing the target incentive at 9.0% of the annual spending budget, and by offering a higher incentive for exceeding 100% of the annual goals.~~

The threshold performance level for demand savings will be set at 75% of the annual kW goal. The Company must attain at least this threshold level of savings before it can earn an incentive. The Company will have the ability to earn an incentive for each kW saved, once threshold savings are achieved. The cap for the target incentive amount of kW savings will remain at 125%.

The ability to earn up to 125% of the target incentive is worthwhile because Rhode Island customers will realize additional benefits if the Company achieves a high level of demand

**Comment [LF1]:** Removed based on comments from DPUC, OER and Acadia Center. The performance level will remain at 75%. The 50% was based on a recommendation from a non-Company party at a previous meeting, but the Company is comfortable with 75%.

savings performance. Given budget requirements, this feature will provide the Company with an incentive to improve the efficiency of its program implementation efforts while providing Rhode Island customers with value in excess of the incremental incentive that may be earned by the Company. That is, the Company will have an incentive to increase customers' savings and customers will realize an overwhelming majority of the savings.

In order to encourage the most efficient use of customer funds, the following mechanism from the energy efficiency incentive will also be applied to SRP. If the actual spending at year end is less than the planned spending by more than five percent, and if achieved savings exceed 100% of the target savings goal, the savings goal will be adjusted by the ratio of actual spend to the planned spend. Conversely, if the actual spend at year end is greater than the planned spend by more than five percent, and if achieved savings are less than 100% of the target savings goal, the savings goal will be adjusted by the ratio of actual spend to the planned spend.

The Company concludes that the SRP incentive proposal is in accordance with the 2017 Standards. It is clearly focused on achieving annual kW reduction goals with transparent metrics around determining performance. The design of the incentive is tied directly to spend only occurring in the SRP program and therefore ensures that there is no duplication of incentive across other Company filings

**Illustration**

~~The table below provides an illustration for what the proposed incentive structure applied to the 2017 SRP Plan.~~

	<b>2017 Plan</b>
<b>Spending Budget</b>	\$400,305
<b>Target Shareholder Incentive</b>	\$36,027
<b>Total Benefits</b>	\$1,412,383

Dear Chris,

Since I cannot be at the August meeting of the EERMC, I was hoping you could share the following comments with our fellow Council members.

1. **Role of the EERMC:** Before we take our vote today, I wanted to emphasize our role as council members, which is to ensure that the 3 year plan allows NGRID to obtain the maximum amount of energy supply from energy efficiency measures below the cost of supplying that need with fossil fuels. At the meeting, I urge you to verbally review our role, not just give a printed handout, which can be easily overlooked.
2. **2018 Targets:** I am glad that NGRID is able to meet the PUC-approved targets for 2019-2020. **I am disappointed, however, that the approved targets for 2018 will not be achieved.** I hope that this short-coming will not set any kind of precedent for meeting targets in the future. I want to be sure that the EERMC and the teams supporting us do the necessary work to inform the legislature that taking \$12.5 million from our budget will only hurt the state in the long run, as it limits our ability to build energy efficiency, promote energy independence, and sustain affordable energy prices for residents, businesses and municipalities in Rhode Island.
3. **SRP incentive: I agree that the SRP incentive should be described qualitatively in the 3 year plan and that each annual plan will identify the specific financial incentive.** With the parallel process regarding Power Sector Transformation, there is still much to be discovered about what will shape our needs for SRP. Further, it is unclear to me why an increase in the incentive rate is necessary. First I prefer for GRID to demonstrate that they have merited such an increase before deciding on the amount earned.

Thank you for sharing these comments.

See you in September,

Betsy



STATE OF RHODE ISLAND  
**ENERGY EFFICIENCY &  
 RESOURCE MANAGEMENT COUNCIL**

# PUBLIC COMMENT SIGN-UP: August 17, 2017

Please note that all public comments shall be limited to two (2) minutes per person/affiliation

NAME		AFFILIATION	Please indicate your comment category with a X	
			Three-Year Plan/SRP Comments	Other Comments
1	Doug Coblentz	FEC-RI	<input checked="" type="checkbox"/>	
2	Kat G Swinom	People's Power & Light	<input checked="" type="checkbox"/>	
3	<del>Christy Estey</del>	<del>National Grid</del>		
4	Brigid Ryan	Rhode Island Housing	<input checked="" type="checkbox"/>	
5	Enika Niedziuski	Acadia Center	<input checked="" type="checkbox"/>	
6	Scott Murphy	Henry Law	<input checked="" type="checkbox"/>	
7				
8				
9				
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11				
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STATE OF RHODE ISLAND

**ENERGY EFFICIENCY &  
RESOURCE MANAGEMENT COUNCIL**

# Three-Year Plan Review

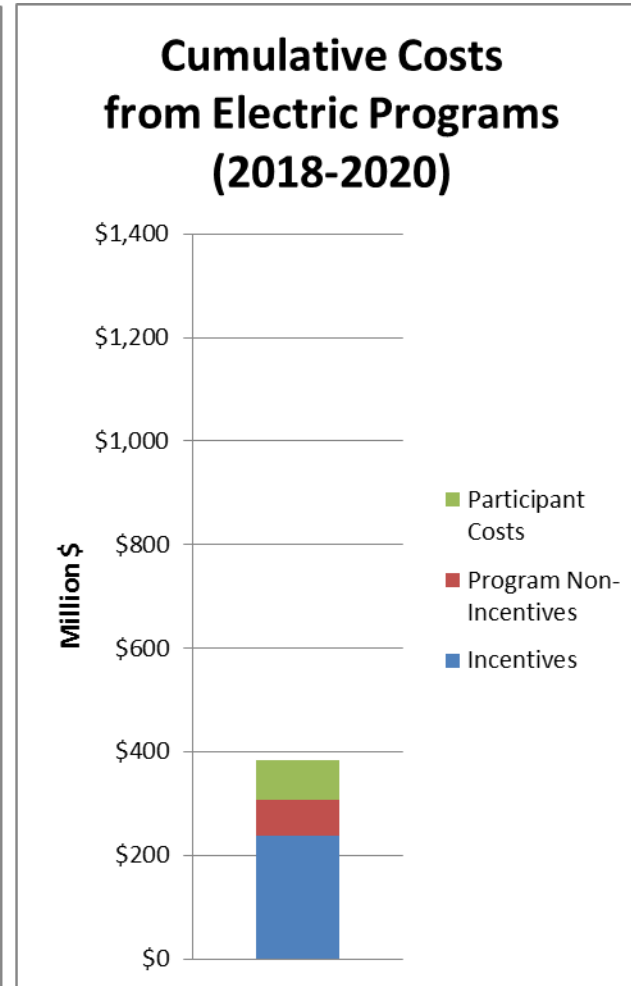
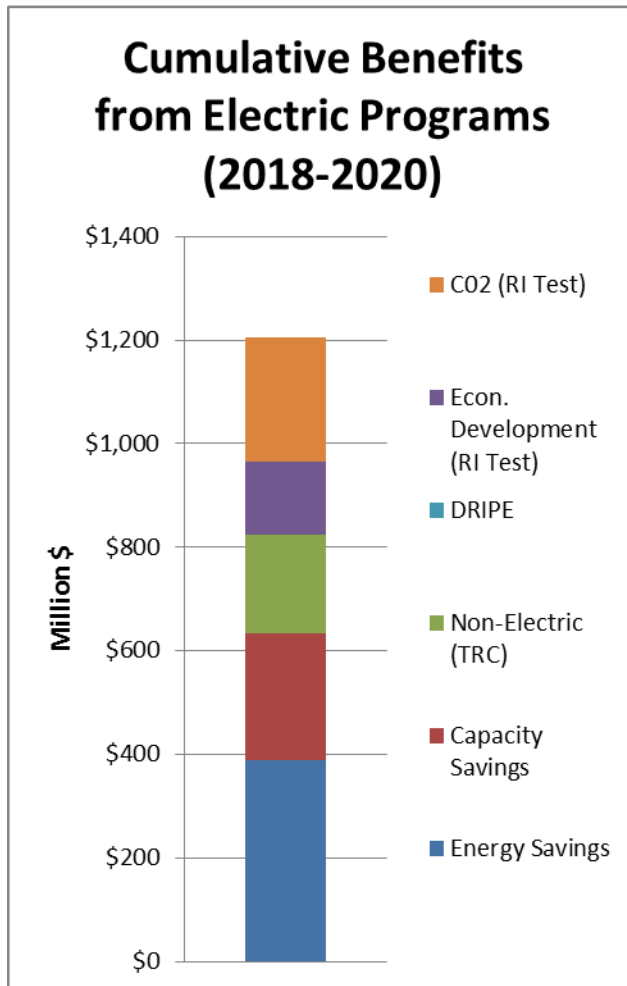
## Cost-Effectiveness Review

**Presented By:** the Consultant Team

**Date:** August 17, 2017

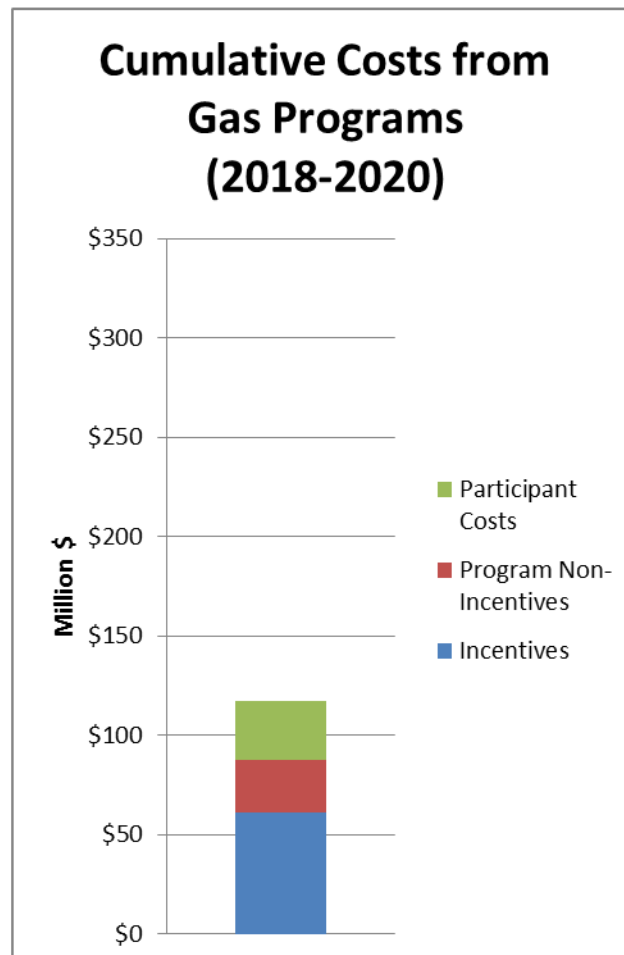
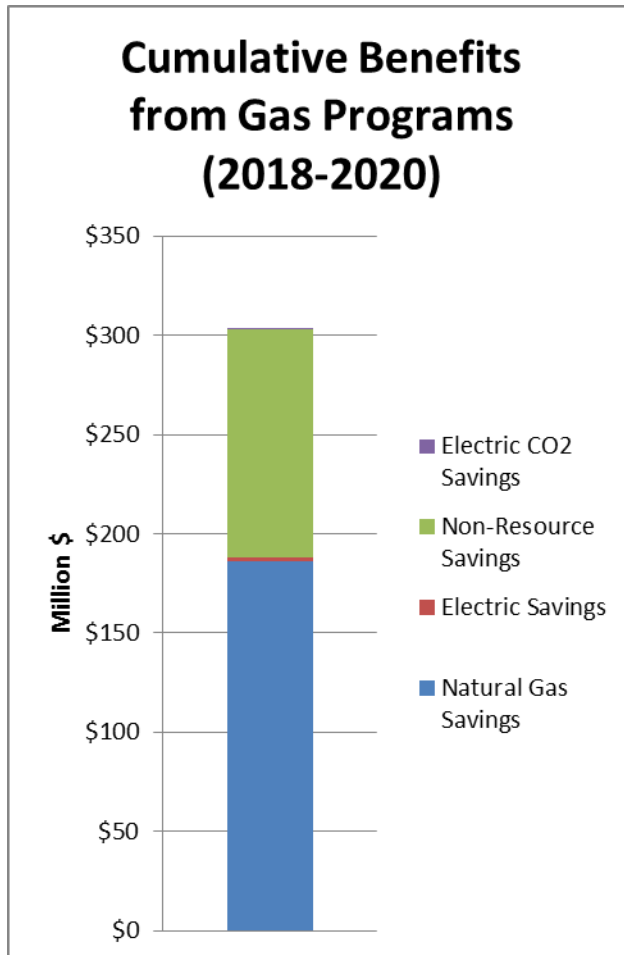


# Electric Benefits and Costs



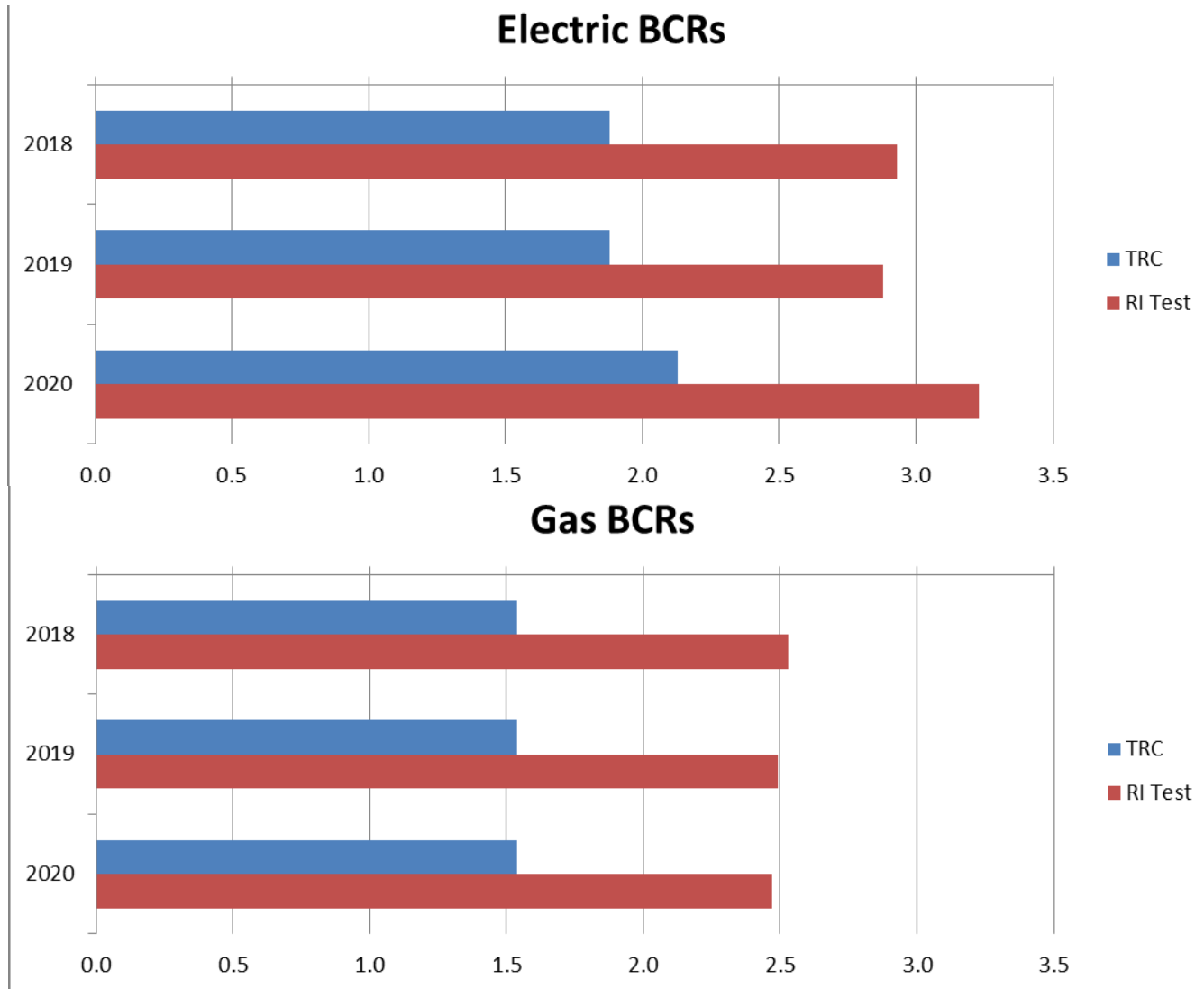


# Gas Benefits and Costs





# Benefit-Cost Ratios



# Cost-Effectiveness Report On National Grid's 2018-2020 Energy Efficiency and System Reliability Procurement Plan

An Assessment and Report by  
The VEIC/Optimal Energy Consultant Team

## CONSULTANT TEAM



Working on Behalf of the



STATE OF RHODE ISLAND  
**ENERGY EFFICIENCY &  
RESOURCE MANAGEMENT COUNCIL**

DRAFT for EERMC review  
15 August 2017

Submitted to the Rhode Island Public Utilities Commission  
**September 15, 2017**

## Summary of Consultant Team Findings

The EERMC Consultant Team finds that the *2018-2020 Energy Efficiency and System Reliability Procurement Plan* (“the Plan”), filed on September 1, 2017 by National Grid, is cost-effective according to both the recently adopted “Rhode Island Test” (RI Test) and the historically referenced Total Resource Cost (TRC) test. The new RI test was created by the revised Least Cost Procurement Standards approved by the Public Utilities Commission (“the Commission”) on July 28, 2017.<sup>1</sup>

We also find that the implementation strategies outlined in the Plan will support a reasonable and credible sustained implementation of National Grid’s energy efficiency implementation efforts, and align with the savings targets proposed by the EERMC in its December 22, 2016 filing and approved by the PUC at its Open Meeting held on March 29, 2014.

These findings and the remainder of this report were presented to the Energy Efficiency and Resource Management Council (EERMC or “the Council”) by the EERMC Consultant Team at its August 17, 2017 meeting, and were provisionally approved and adopted in a vote of the EERMC.

Because the Plan has been approved by the EERMC and meets the cost-effectiveness requirements of R.I.G.L. § 39-1-27.7(c)(5), the Consultant Team recommends that the Plan also be approved by the Commission. Through such approval the Plan can be used by National Grid to guide the development of more detailed annual implementation plans for 2018, 2019, and 2020, which will be submitted to the Commission by November 1<sup>st</sup> of this year and by October 15<sup>th</sup> prior to the 2019 and 2020 plans’ implementation.

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<sup>1</sup> Section 1.2.B., [http://www.ripuc.org/eventsactions/docket/4684-LCP-Standards\\_7-27-17.pdf](http://www.ripuc.org/eventsactions/docket/4684-LCP-Standards_7-27-17.pdf)

## I. Introduction

This report was prepared by the Consultant Team and the EERMC to help fulfill the requirements of R.I.G.L. § 39-1-27.7(c)(5) related to the Public Utility Commission's approval of National Grid's three-year procurement plan and related annual energy efficiency plans. Since 2010, the EERMC has directed the Consultant Team to prepare this report for all three-year and annual plans filed with the Commission. This version addresses National Grid's proposed *2018-2020 Energy Efficiency and System Reliability Procurement Plan* ("the Plan"), as presented to the Council at its August 17, 2017 meeting.<sup>2</sup> The Council voted to approve this report in draft form, subject only to non-substantive adjustments based on ensuing enhancements to the Plan document by National Grid that do not affect the cost-effectiveness of the proposed energy efficiency programs and measures.

This report submits our finding that the Plan is cost-effective as evidence to the Commission. It also describes the nature and process of the review and documents the professional experience and qualifications of the Consultant Team that performed the review.

In order to assess the cost-effectiveness of the *2018-2020 Energy Efficiency and System Reliability Procurement Plan*, the EERMC Consultant Team engaged in the following plan development and review processes:

1. Consistent and on-going oversight of actual National Grid energy efficiency planning and implementation activities, both through direct interactions with National Grid staff and through participation in the Collaborative Subcommittee process (documented in Section V).
2. Direct review of National Grid's cost-effectiveness assessment practices and its screening process (documented in Sections VI and VII).
3. Review of National Grid's Evaluation Process (documented in Section VIII).

**Comment [JML1]:** Update these internal references

## II. Defining Cost-Effectiveness

Cost-effectiveness tests for energy efficiency measures and programs compare the net present value of a stream of benefits to the net present value of a corresponding stream of costs, whether they occur at the time of implementation or over several years. When the benefits exceed the costs, the measure or program is said to be "cost-effective."<sup>3</sup> Several tests exist that

<sup>2</sup> Although the Council is directed to approve the Plan by August 15 triennially, a slight delay in the Council meeting schedule was required to assure a quorum.

<sup>3</sup> The results of this analysis can be expressed as either the net benefits (i.e., total benefits minus total costs), where cost-effective is defined as positive net benefits, or as the benefit-to-cost ratio (total benefits divided by total costs), where cost-effective is defined as a ratio of greater than or equal to 1.

each assess cost-effectiveness from a different perspective. The Total Resource Cost (TRC) has been widely accepted and used by regulators and policy-makers to evaluate demand-side management programs because it takes an expansive view of the effects of these programs, including all of the costs borne by consumers (whether directly or indirectly through utility rates) and all of the benefits that accrue to those consumers. Historically, Rhode Island relied on the TRC test to assess whether the benefits of an efficiency measure or program is cost-effective if the benefits outweigh the costs for Rhode Island consumers.

More recently, the Rhode Island Public Utilities Commission ordered National Grid to develop a benefit-cost test that “more fully reflects the policy objectives of the State.” The Commission did not specify the components of the new “Rhode Island Test” in detail, but provided a number of principles to follow, including symmetry, transparency, and the importance of accounting for all relevant impacts, even those that are difficult to quantify or monetize.

National Grid subsequently proposed two additional categories of benefits to include in the new RI Test in addition to those already included in the TRC. These were discussed among the EERMC Consultant Team, the Collaborative, and National Grid. Based on general agreement, these benefits have been included in the cost-effectiveness analysis presented in the Plan. They are:

- **The benefits associated with reduction in greenhouse gas (GHG) emissions** – The TRC test used in previous Plans accounted for the costs of mitigating CO emissions imposed by the Regional Greenhouse Gas Initiative and the costs of reasonably anticipated future GHG regulations.<sup>4</sup> The revised Standards provide for inclusion of additional value related to GHG emissions reductions.
- **The benefits associated with economic development resulting from investment in energy efficiency** – Changes in how consumers and other entities spend money in the Rhode Island economy can result in changes in overall economic activity. For example, shifting spending from goods or services produced outside of the state to those produced within the state will increase economic activity. Because investing in energy efficiency in part replaces spending on energy, the Plan may result in such a shift. The economic impacts of investing in one type of energy efficiency measure (combined heat and power, or CHP) were included in previous cost-effectiveness analyses; the new RI Test extends this to capture these impacts for all Plan activity.

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<sup>4</sup> The cost of mitigating emissions becomes a benefit in the cost-effectiveness analysis, because energy efficiency results in lower emissions, and thus avoids some of these costs. Rather than account for them as a negative cost, they are considered a positive benefit.



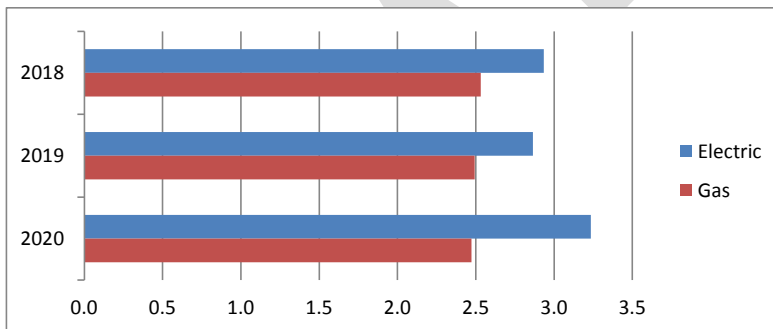
### III. Assessing the Cost-Effectiveness of the 2018-2020 Plan

<Briefly describe the details of the two new benefit categories in the RI Test and our finding that they are appropriate and included in the results presented in the Plan; use text from the Plan, pages 31 to 34; indicate that consultant team agrees with these approaches>

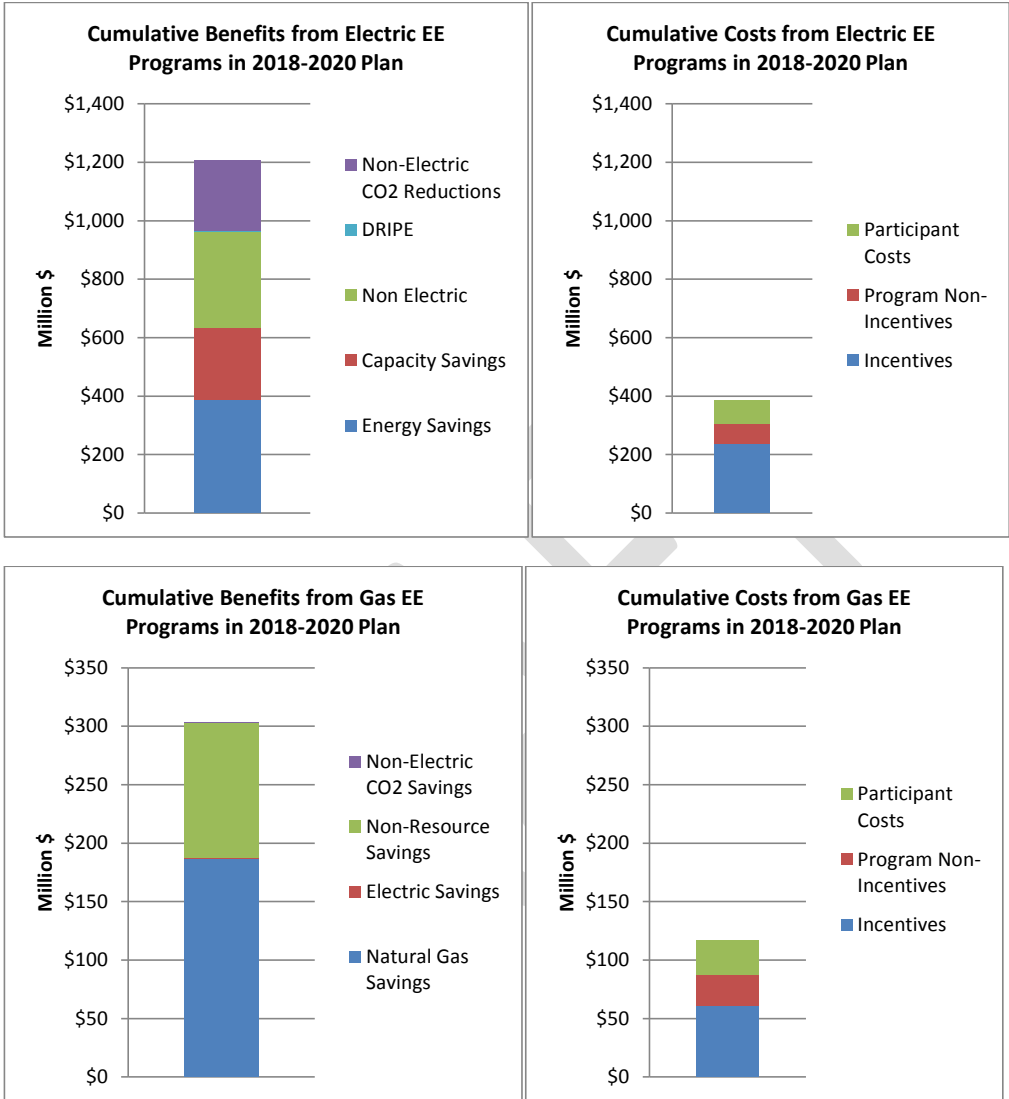
<introduce and describe table showing BCRs for E&G, by year, both RI Test and RI Test; reference source document and page(s)>

<b>BCR (RI Test/TRC test)</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
Electric	2.9/1.9	2.9/1.9	3.2/2.1
Gas	2.5/1.5	2.4/1.5	2.5/1.5

<state clearly that the portfolio is robustly cost-effective in every year, even without the additional benefits in the RI Test, use chart below with a bold line at 1.0> Each program year for electric and natural gas efficiency has a BCR greater than 1.0 as required by the PUC's Standards for Energy Efficiency Procurement and R.I.G.L. § 39-1-27.7 (c)(5).



<graphs showing breakdown of costs and benefits for the three years in total; benefits charts need to be revised to better indicate the additional benefits in the RI Test>



As the above charts show, the total resource benefits in both the gas and electric portfolios are mostly derived from primary fuel savings. Similarly, the total resource costs are largely participant incentives.

<make sure to include a short note about the benefit-cost ratio at the sector level includes the shareholder incentive as a cost. As shareholder incentive is not calculated at a program level, it is not included in any program level BCRs>

The EERMC Consultant Team concludes that the Procurement Plan meets the cost-effective requirements of R.I.G.L. § 39-1-27.7(c)(5) and therefore should be approved by the Commission and used by National Grid to develop more detailed, specific annual implementation plans for 2018, 2019, and 2020 to be submitted to the Commission by November 1 annually.

#### **IV. Additional Findings**

<discuss proposed implementation strategies and relationship to the Plan>

<discuss how EM&V supports the findings of cost-effectiveness>

#### **V. Conclusion**

**For the reasons stated herein, the EERMC and the EERMC's Consultant Team finds that National Grid's 2018-2020 Energy Efficiency and System Reliability Procurement Plan is cost-effective and lower cost than the acquisition of additional supply pursuant to R.I.G.L. § 39-1-27.7 (c)(5).**

## Appendices

### The Rhode Island Legal and Regulatory Framework

Rhode Island’s Comprehensive Energy Conservation, Efficiency, and Affordability Act of 2006 (“2006 Comprehensive Energy Act”) established a comprehensive energy policy that explicitly and systematically requires maximization of ratepayers’ economic savings through investments in all cost-effective energy efficiency. By means of this requirement on the distribution utility to procure all cost-effective energy efficiency, Rhode Island ratepayers stand to save hundreds of millions of dollars in energy bills over the next decade.

The primary guidelines informing the planning process to achieve this objective are the “standards for energy efficiency and conservation procurement and system reliability” (“the Standards”), required in the 2006 legislation. The EERMC proposed the initial Standards in June, 2008, and a subsequent revision was approved by the Commission in July, 2008. Updates to the Standards were proposed by the EERMC in 2011 under Docket #4202, and again in 2014 under Docket #4443, which were both approved by the Commission. The purpose of these Standards is to provide sufficient direction to guide National Grid in its 3-year and annual Plans.

**Comment [MG2]:** Update to reference new standards and adoption of RI Test.

The Standards ordered by the PUC identify the Total Resource Cost (TRC) test as the methodology to use in determining whether the measures, programs, and the portfolio of energy efficiency (EE) services are cost-effective. The Standards for determining cost-effectiveness were modified in 2014 to include additional language, designated below by italics, from Section 1.2, A, 2, (a) and (b):

(a) The Utility shall assess measure, program and portfolio cost-effectiveness according to the Total Resource Cost test (“TRC”). The Utility shall, after consultation with the Council, propose the specific benefits and costs to be reported and factors to be included in the Rhode Island TRC test *and include them in the EE Procurement Plan. These benefits may include resource impacts and non-energy impacts. The accrual of non-energy impacts to only specific programs or technologies, such as income eligible programs or combined heat and power, may be considered.*

(b) That test shall include the costs of CO<sub>2</sub> mitigation as they are imposed and are projected to be imposed by the Regional Greenhouse Gas Initiative. The test shall *also include any other utility system costs associated with reasonably anticipated future greenhouse gas reduction requirements at the state, regional or federal level for both electric and gas programs. A comparable benefit for greenhouse gas reduction resulting from natural gas or delivered fuel energy efficiency or displacement may be considered.*

The same TRC methodology (adjusted appropriately for gas measures and programs) has been applied to the evaluation of cost-effectiveness for natural gas energy efficiency since natural gas was added to the Least Cost Procurement mandates in 2010.

<reference the new RI Test components, but don't repeat detail from the main text>

## Review Process

Comment [JML3]: Update this.

Our review of the cost-effectiveness of the EE Procurement Plan addressed the methodology, mechanics, and assumptions used to estimate efficiency program costs and benefits for each year. The Consultant Team's previous, detailed review of National Grid's Annual Plan had confirmed their correct methodology for the TRC test, and provided detailed information on the mechanics of their cost-effectiveness model. Projections of costs and benefits for the 3-year plan are informed by detailed measure-level inputs and analysis, but are ultimately determined at a higher level than for an annual plan. This approach is appropriate given that there is less certainty in the inputs and assumptions for the 3-year period, and since a higher level of detail and associated effort is anticipated for the individual annual plans. With this in mind, the Consultant Team's review consisted of the following primary activities:

- Confirm National Grid's methodology for calculating the TRC test through review of their screening model;
- Review draft versions of the EE Procurement Plan and its cost-effectiveness projections;
- Review key changes in assumptions, including new avoided energy supply costs, carbon costs, and the results of new evaluation studies;
- Review the impacts of updated assumptions on estimated efficiency costs and savings;
- Discuss with National Grid specific issues regarding their methodology for projecting costs and savings, including anticipated cost and savings drivers, uncertainty, and contingency;
- Review the screening model with National Grid staff, including new and dropped measures, changes to measure baselines due to new codes and standards, and updates to other inputs such as realization rates, coincidence factors, and net to gross factors.

In addition, the Consultant Team has worked with National Grid over recent months on updating the latest version of the Rhode Island Technical Reference Manual (TRM), which documents the algorithms to calculate measure savings as well as additional inputs required for cost-effectiveness screening. This project has updated some of the savings assumptions that

inform the projections of the Plan. The TRM will be especially useful for the more detailed development and review of the annual plans.

In general, the Consultant Team found National Grid’s processes for revising their cost-effectiveness inputs and assumptions to be thorough and comprehensive. National Grid appropriately adjusts baselines for new building codes and federal standards, and incorporates the latest findings from evaluation studies. In addition, the Company updates anticipated program costs based on recent experience and new market information. Finally, the proposed pilot programs are appropriate for determining the cost-effectiveness and viability of new measures (e.g., behavioral measures).<sup>5</sup>

The Consultant Team’s review of the general model assumptions and inputs for the EE Plan’s projected costs and savings was performed via meetings with National Grid staff. The Consultant Team’s review focused on the general mechanics of the model, key screening inputs (such as avoided costs), and the allocation of resources between programs, markets, and sectors. During the cost-effectiveness review of subsequent Annual EE Program Plans, the Consultant Team will examine inputs further and may suggest minor revisions while working with National Grid, the EERMC, and the Collaborative Subcommittee to keep everything appropriately updated.

### **Summary of EERMC Consultant Team’s Qualifications**

**Comment [JML4]:** This needs to be updated.

The EERMC Consultant Team is composed of Vermont Energy Investment Corporation (“VEIC”) serving as the lead contractor, Optimal Energy Inc. (“OEI”), Energy Futures Group, and Prael Consultant. The Consultant Team is led by Scudder Parker and Mike Guerard. Key skills and expertise are provided by Sam Huntington on data and analytical issues; Sean Bleything, Richard Faesy and Glenn Reed on the Residential market sector; George Lawrence and Phil Mosenthal on the Commercial / Industrial sector; and Ralph Prael on evaluation, measurement, and verification (EM&V) activity. An additional layer of supporting staff is also in place, as well as a full range of industry experts available on an as-needed basis.

This team brings an impressive understanding of, and experience with, energy efficiency policy, regulatory practice, program design, cost-effectiveness analysis, measure characterization, assessment of potential savings, and evaluation, measurement and verification. Many of the

---

<sup>5</sup>Pilot programs are important because while most measures can be found to be “cost-effective” or “non-cost-effective” in most standard applications, there may be highly cost-effective measures that are not cost-effective in certain applications, and some generally non-cost-effective measures that are cost-effective in certain situations. Pilot programs are crucial to overcoming key challenges of program design: refining the knowledge base of such situations; tailoring programs and services to avoid situations in which a measure is not cost-effective; and discovering the conditions and market segments in which a measure may prove to be cost-effective. The program and portfolio level analysis combined with increasing service delivery sophistication are positive characteristics of programs that help secure all cost-effective opportunities.

individual consultants included on the Consultant Team have 15-25 years of direct experience in energy efficiency and broader regulatory policy. All participants also practice in jurisdictions outside of Rhode Island (many of those in New England) and their experience in those settings provides an important context and perspective to inform the EERMC in its oversight role.

A full listing of qualifications of the various team members and the resumes of the participating individual consultants is provided in **Attachment A**.

The Consultant Team has been involved in the Rhode Island oversight, program design, and implementation process since it was hired early in 2008. The Consultant Team:

- Helped draft the Standards for Least Cost Procurement proposed by the EERMC in 2008 and the revision to the Least Cost Procurement Standards and System Reliability Procurement Standards in 2011 and 2014, both of which were approved by the Commission;
- Oversaw the development of Phases I and II of *The Opportunity for Energy Efficiency that is Cheaper than Supply* (KEMA) report;
- Contributed to the development and review of EEPP filings by National Grid for 2009, 2010, 2011, 2012, 2013 and 2014.
- Analyzed the cost-effectiveness of the annual EEPP filings from 2009 – 2014, and documented the findings of the cost-effectiveness for the PUC on behalf of the EERMC.
- Contributed to the development and review of National Grid's 2012-2014 and 2015-2017 Energy Efficiency Procurement Plans;
- Analyzed the cost-effectiveness of the 2012-2014 Energy Efficiency Procurement Plan and documented those findings for the PUC on behalf of the EERMC;
- Developed and submitted proposed targets for the 2015-2017 Plan for the EERMC consistent with LCP, primarily through reviewing and updating assumptions in the initial KEMA Potential Study from 2010, and the 2012 Natural Gas Opportunity Report for the EERMC.

In 2013 and 2014, the Consultant Team has also worked closely with the Office of Energy Resources (OER). In this context it:

- Provided support as the OER worked with stakeholders to develop a new Rhode Island State Energy Plan;

- Advised the OER as it worked to secure legislative authorization for a new Property Assessed Clean Energy (PACE) Program and for a new approach to securing efficiency savings from street lighting;
- Provided input as the OER developed its proposals for allocation of Regional Greenhouse Gas Initiative (RGGI) funds;
- Worked closely with the OER staff in developing and delivering the Rhode Island Public Energy Partnership (RIPEP) program;
- Worked with OER, the EERMC and National Grid in developing working partnerships with the Alliance for Healthy Homes, Emerald Cities-Providence and the Rhode Island Housing Authority.
- Worked with OER and National Grid to design pilot program to locate solar installations in System Reliability Plan (SRP) target areas.

This strong familiarity with Rhode Island's policy, planning, implementation, and evaluation experience provides a high level of assurance that practices in Rhode Island are consistent with regional and national best practices in Energy Efficiency Least Cost Procurement.<sup>6</sup>

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<sup>6</sup> The EERMC and its Consultant Team also work closely with the Division and its Consultant through the Collaborative Subcommittee.



**From:** [George, Linda \(PUC\)](#)  
**To:** [marisa@desautelesq.com](mailto:marisa@desautelesq.com)  
**Cc:** ["Mike Guerard"](#); [Becca Trietch \(DOA\)](#)  
**Subject:** RE: [EXTERNAL] : RE: Docket No. TBA, National Grid's Three-Year Plan, 2018-2020  
**Date:** Tuesday, August 15, 2017 3:30:26 PM

---

Hi Marisa,

The Commission has no objection to the extension and I notified the Service List of the EERMC's request.

Linda

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**From:** Marisa Desautel [mailto:[marisa@desautelesq.com](mailto:marisa@desautelesq.com)]  
**Sent:** Monday, August 14, 2017 9:14 AM  
**To:** George, Linda (PUC) <[Linda.George@puc.ri.gov](mailto:Linda.George@puc.ri.gov)>  
**Cc:** 'Mike Guerard' <[guerard@optenergy.com](mailto:guerard@optenergy.com)>; Becca Trietch (DOA) <[Becca.Trietch@energy.ri.gov](mailto:Becca.Trietch@energy.ri.gov)>  
**Subject:** [EXTERNAL] : RE: Docket No. TBA, National Grid's Three-Year Plan, 2018-2020

Hi Linda,

I was informed on Friday of a scheduling issue with respect to the EERMC's approval of the 3- year plan. The EERMC is aware that August 15, 2017 is the deadline for EERMC approval. However, the EERMC does not have a regularly scheduled council meeting until August 17<sup>th</sup>. A discussion and vote on the 3-year plan is included on the August 17<sup>th</sup> agenda.

Further, the 3-Year Plan Cost-Effectiveness Report is due to the PUC within two weeks of the filing of the 3-Year Plan (by September 15<sup>th</sup>). The EERMC meeting on September 21<sup>st</sup> will be past the two week deadline of the National Grid filing. Would the PUC be amenable to an extension of this deadline to September 22<sup>nd</sup>? Otherwise, the EERMC can hold a provisional vote, but that seems inefficient to me.

Please let me know if this presents any issues.

Thanks,  
M

Marisa Desautel, Esq.  
55 Pine St., 4<sup>th</sup> Floor  
Providence, RI 02903  
[www.desautelesq.com](http://www.desautelesq.com)  
Phone: 401.477.0023

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**From:** Marisa Desautel  
**To:** ["Chris Powell"](#)  
**Cc:** [Becca Trietch \(DOA\)](#); ["Mike Guerard"](#)  
**Subject:** [EXTERNAL] : Chief Purchasing Officer  
**Date:** Wednesday, August 16, 2017 10:06:35 AM

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Chris,

Becca asked me to provide you with some information on the Chief Purchasing Officer position for the EERMC. We worked on a Procurement Guidance document which outlines the powers and duties of the Chief Purchasing Officer, with the appointment subject to a vote of the council. The main duties include interpretation of policy and procedure, designation of a technical review team for RFPs, ensuring compliance with the State Purchases Act, and making recommendations on proposals. During discussions on the Procurement Guidance document, it became apparent that the current executive director would be qualified to handle these duties.

According to the EERMC's enabling legislation, "the commissioner of the office of energy resources shall be the executive secretary and executive director of the council." The customary role of an executive director is to design, develop and implement plans for an organization in a cost-effective and time-efficient manner. An executive director is also responsible for the day-to-day operation of an organization, which customarily includes managing committees and staff. In essence, a typical executive director has authority to run an organization.

In this case, the commissioner of the OER has working knowledge of the state laws regarding procurement and is familiar with policy and procedure. Final decisions remain subject to a vote of the EERMC, but the day to day tasks outlined in the Procurement Guidance document fit well with the current responsibilities of the OER commissioner.

Let me know if you have any questions on the above.

Thanks,  
M

Marisa Desautel, Esq.  
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EERMC 2017 Budget - Quarterly Reports

Last Updated 8/17/2017

Income	
2016 Carry Over - Client Fund	\$ 320,411
2016 Unspent Fund Balance	\$ 126,309
2016 Carry Over to Fund	\$ 194,103
SBC - Electric (2017)	\$ 816,300
SBC - Gas (2017)	\$ 304,300
<b>TOTAL INCOME</b>	<b>\$ 1,441,011</b>

Expenses to Main Account	Budget	Expense												Total Expended		Total Remaining		
	CY 2017	Jan-17	Feb-17	Mar-17	Quarter 1	Apr-17	May-17	Jun-17	Quarter 2	Jul-17	Aug-17	Sep-17	Quarter 3	Quarter 4	\$	%	\$	%
Consultant Services	\$ 887,830.00	\$ 70,969.49	\$ 44,044.61	\$ 126,982.37	\$ 241,996.47	\$ 73,307.78	\$ 64,216.91	\$ 85,324.11	\$ 222,848.80	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 464,845.27	52.4%	\$ 422,984.73	47.6%
Core allocation	\$ 759,350.00	\$ 70,037.38	\$ 43,110.00	\$ 123,799.69	\$ 236,947.07	\$ 72,836.36	\$ 63,608.86	\$ 83,732.61	\$ 220,177.83	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 457,124.90	60.2%	\$ 302,225.10	39.8%
Travel/Expenses	\$ 19,640.00	\$ 932.11	\$ 524.61	\$ 3,182.68	\$ 4,639.40	\$ 471.42	\$ 608.05	\$ 1,591.50	\$ 2,670.97	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 7,310.37	37.2%	\$ 12,329.63	62.8%
Optional Items	\$ 108,840.00		\$ 410.00		\$ 410.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 410.00	0.4%	\$ 108,430.00	99.6%
Legal Counsel	\$ 25,000.00	\$ 1,275	\$ 4,162.58		\$ 5,437.58	\$ 2,172.65	\$ 2,100.00	\$ 1,950.00	\$ 6,222.65	\$ 2,875.00			\$ 2,875.00	\$ -	\$ 14,535.23	58.1%	\$ 10,464.77	41.9%
Annual Report	\$ 5,000.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%	\$ 5,000.00	100.0%
Council Travel	\$ 500.00	\$ -	\$ -		\$ -	\$ -	\$ -		\$ -	\$ -	\$ -		\$ -	\$ -	\$ -	0.0%	\$ 500.00	100.0%
Public Education	\$ 75,000.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%	\$ 75,000.00	100.0%
Stretch Code Development (Reside	\$ 15,000.00		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$ 15,000.00	
EERMC Website - Design Vendor	\$ 30,000.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,080.00	\$ -	\$ 4,080.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,080.00	13.6%	\$ 25,920.00	86.4%
<b>Subtotal</b>	<b>\$ 1,038,330.00</b>	<b>\$ 72,244.49</b>	<b>\$ 48,207.19</b>	<b>\$ 126,982.37</b>	<b>\$ 247,434.05</b>	<b>\$ 75,480.43</b>	<b>\$ 70,396.91</b>	<b>\$ 87,274.11</b>	<b>\$ 233,151.45</b>	<b>\$ 2,875.00</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 2,875.00</b>	<b>\$ -</b>	<b>\$ 483,460.50</b>	<b>46.6%</b>	<b>\$ 554,869.50</b>	<b>53.4%</b>

<b>Unallocated</b>	<b>\$ 82,270.00</b>																	
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Expenses to Client Fund	Budget	Expense												Total Expended		Total Remaining		
	CY 2017	Jan-17	Feb-17	Mar-17	Quarter 1	Apr-17	May-17	Jun-17	Quarter 2	Jul-17	Aug-17	Sep-17	Quarter 3	Quarter 4	\$	%	\$	%
Finance Study, Dunsky	\$ 90,000.00	\$ -	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%	\$ 90,000.00	100.0%
Energy Expo 2017	\$ 40,000.00	\$ 40,000.00	\$ -	\$ -	\$ 40,000.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 40,000.00	100.0%	\$ -	0.0%
Stretch Code Development (Comm	\$ 50,260.00	\$ -	\$ -	\$ -	\$ -	\$ -			\$ -	\$ -			\$ -	\$ -	\$ -	0.0%	\$ 50,260.00	100.0%
<b>Subtotal</b>	<b>\$ 180,260.00</b>	<b>\$ 40,000.00</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 40,000.00</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 40,000.00</b>	<b>22.2%</b>	<b>\$ 140,260.00</b>	<b>77.8%</b>

<b>Unallocated</b>	<b>\$ 140,151.45</b>																		<b>Current Fund Balance</b>	<b>\$ 280,411.45</b>
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<b>TOTALS</b>	<b>\$ 1,218,590.00</b>																		<b>\$ 287,434.05</b>	<b>\$ 75,480.43</b>	<b>\$ 70,396.91</b>	<b>\$ 87,274.11</b>	<b>\$ 233,151.45</b>	<b>\$ 2,875.00</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 2,875.00</b>	<b>\$ -</b>	<b>\$ 523,460.50</b>	<b>43.0%</b>	<b>\$ 695,129.50</b>	<b>57%</b>
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The Rhode Island Energy Efficiency and  
Resources Management Council  
("EERMC")

Request for Proposals  
("RFP")

RFP Title:	Policy & Program Planning Consultant Services
RFP Number:	EERMC-2017-02
RFP Issuance Date:	August 31, 2017
Due Date to submit Questions:	Thursday, September 14, 2017 at 5 pm ET
RFP Submission Deadline:	Thursday, October 5, 2017 at 5 pm ET

## SECTION 1: GENERAL INFORMATION

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- 1.1. Summary.** The Rhode Island Energy Efficiency and Resources Management Council (“EERMC”) is issuing this request for proposals (“RFP”) to solicit proposals from qualified offerors to support the EERMC in its review and oversight of energy efficiency and system reliability programs and initiatives proposed and administered by the electric and gas distribution company as required by R.I.G.L. § 39-1-27.7 and as further described in Section 5 of this RFP.
- 1.2. EERMC.** EERMC is a council authorized, created and established pursuant to the laws of the State of Rhode Island (“State”). See R.I. Gen. Laws §42-140.1-3. EERMC council members are appointed by the State Governor with the advice and consent of the State Senate, and the Commissioner of the Rhode Island Office of Energy Resources (“OER”) serves as the EERMC executive director. See R.I. Gen. Laws §42-140.1-4. In accordance with R.I. Gen. Laws §42-140.1-6, EERMC is authorized to engage consultants and professional services as necessary and appropriate to fulfil its statutory purposes which are to:
- Evaluate and make recommendations, including, but not limited to, plans and programs, with regard to the optimization of energy efficiency, energy conservation, energy resource development; and the development of a plan for least-cost procurement for the State;
  - Provide consistent, comprehensive, informed and publicly accountable stake-holder involvement in energy efficiency, energy conservation, and energy resource management;
  - Monitor and evaluate the effectiveness of programs to achieve energy efficiency, energy conservation, and diversification of energy resources; and
  - Promote public understanding of energy issues and of ways in which energy efficiency, energy conservation, and energy resource diversification and management can be effectuated.
- 1.3. State Purchases Act.** In general, the State Purchases Act, R.I. Gen. Laws §37-2-1 et seq., applies to every expenditure of public funds by any State governmental entity or public agency within the State. EERMC, as a council established by the Rhode Island General Assembly, is issuing this solicitation and selection for award in accordance with the underlying purposes and policies of the State Purchases Act. Any prospective offeror or offeror who wishes to submit a written protest in accordance with R.I. Gen. Laws §37-2-52, must submit the protest to the Commissioner of the Rhode Island Office of Energy Resources via mail or hand delivery to One Capitol Hill, 4<sup>th</sup> floor, Providence, RI 02908 or via email to [energyresources@energy.ri.gov](mailto:energyresources@energy.ri.gov).
- 1.4. Equal Opportunity Policy.** In accordance with R.I. Gen. Laws §28-5.1-10, any selected offeror(s) who contract(s) with EERMC must possess the same commitment to equal opportunity as prevails under federal contracts controlled by federal executive orders 11246, 11625 and 11375. The selected offeror(s) may

be required to submit an equal employment opportunity plan as proof of commitment. For more information, please contact the Rhode Island Equal Opportunity Office within the Rhode Island Department of Administration's Office of Diversity, Equity & Opportunity at 401.222.6398 or visit <http://odeo.ri.gov/offices/eoo>.

- 1.5. **Minority and Women Business Enterprises.** In accordance with R.I. Gen. Laws §37-14.1-4, small businesses owned and controlled by one or more women who are economically disadvantaged ("WBEs") or small businesses owned and controlled by one or more minorities who are economically disadvantaged ("MBEs") shall have the maximum opportunity to participate in all procurements of goods or services involving funds administered by EERMC.
- 1.6. **Disability Business Enterprises.** In accordance with R.I. Gen. Laws §37-2.2-3.1, small disadvantaged businesses owned and controlled by one or more individuals who have a disability ("Disability Business Enterprise") shall have the maximum opportunity to participate in all procurements of goods or services involving funds administered by EERMC.
- 1.7. **ISBE Utilization.** The term "ISBE" pertains to individuals who own small business enterprises and means all businesses that are certified as a WBE or MBE by the Rhode Island Office of Diversity, Equity & Opportunity ("ODEO") or as a Disability Business Enterprise by the Governor's Commission on Disabilities. In order for an offeror to receive credit for ISBE utilization either as an ISBE itself or through the utilization of a subcontractor that is an ISBE, the business must possess certification at the time the proposal is submitted to EERMC. To determine whether a business is certified by the State as an MBE or WBE or to become certified, please contact ODEO at 401.222.6398 or visit <http://odeo.ri.gov/offices/mbeco/>. To determine whether a business is certified by the State as a Disability Business Enterprise or to become certified, please contact the Rhode Island Governor's Commission on Disabilities at 401.462.0100 or visit <http://www.disabilities.ri.gov/>. Offerors will receive between 0-6 evaluation points based on their proposed ISBE utilization rates. Each offeror must submit its proposed ISBE utilization rate as part of its proposal as instructed herein.
- 1.8. **Utilization of Subcontractors.** Subcontractors are permitted, provided that their use must be clearly indicated in the proposal. To the extent possible, all proposed subcontractors must be identified in the proposal.
- 1.9. **Public Disclosure of Proposals.** All proposals received by EERMC in connection with this RFP are subject to the Rhode Island Access to Public Records Act ("APRA"), R.I. Gen. Laws §38-2-1, et. seq. Once an award is made and upon receiving an APRA request, all proposals will be released by EERMC unless EERMC finds that the certain portions of information contained within the proposals are exempt from public disclosure pursuant to R.I. Gen. Laws §38-2-2(4). Offerors are advised to clearly mark or label "confidential" any portions of information within their proposals that they believe are "[t]rade secrets and

commercial or financial information obtained from a person, firm, or corporation which is of a privileged or confidential nature.” When responding to an APRA request, EERMC will take into consideration any information marked by the offeror as confidential. However, broad disclaimers that label the entire proposal as confidential will not help EERMC in its APRA analysis and may not be considered.

- 1.10. Costs Associated with Submitting a Proposal.** All costs associated with developing or submitting a proposal in response to this RFP, or to provide oral or written clarification of its content shall be borne by the offeror. EERMC assumes no responsibility for these costs.
- 1.11. Right to Cancel this RFP.** In accordance with R.I. Gen. Laws §37-2-23, this RFP may be cancelled at any time and/or all proposals may be rejected.
- 1.12. Misdirected Proposals.** Any proposals misdirected to other state locations, or which are otherwise not present in the office of the Contact Person at the time of the submission deadline for any cause will be determined to be late and may not be considered.
- 1.13. Proposals Irrevocable.** Proposals are considered to be irrevocable for a period of not less than sixty (60) days following the submission deadline, and may not be withdrawn, except with the express written permission of EERMC.
- 1.14. EERMC Website.** Offerors are instructed to peruse the EERMC website and any other pertinent websites listed in Section 2.1 of this RFP on a regular basis, as additional information relating to this solicitation may be posted there from time to time. See Section 2.1 of this RFP for pertinent website address(es).
- 1.15. Right to Transact Business in Rhode Island.** In accordance with R. I. Gen. Laws §7-1.2-1, et seq., no foreign corporation, a corporation without a Rhode Island business address, shall have the right to transact business in the State until it shall have procured a Certificate of Authority to do so from the Rhode Island Department of State. Please contact the Rhode Island Secretary of State’s Business Services Division at 401.222.3040 or visit <http://sos.ri.gov/divisions/business-portal> for more information. This is a requirement only of the selected offeror(s).
- 1.16. Availability of Funds.** The purchase of services under an award made pursuant to this RFP will be contingent on the availability of funds.
- 1.17. Insurance.** Prior to being issued a final award, the selected offeror(s) will be required to possess all necessary insurance, as determined by the EERMC, and continue to possess such insurance throughout the life of the award.
- 1.18. Indemnification.** The selected and awarded offeror shall hold harmless and indemnify the EERMC and the State from and against any and all losses, damages, claims, suits, actions, liabilities, and/or expenses, including, without limitation, attorneys’ fees and disbursements of any character that arise from, are in



connection with or are attributable to the performance or nonperformance of the offeror or its subcontractors under an award stemming from this RFP.

**SECTION 2: AGENCY CONTACT PERSON AND OFFEROR SUBMISSION AND FORMATTING REQUIREMENTS**

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**2.1 Contact Person.** Any communication regarding this RFP must be made in writing and directed to the Contact Person whose information is listed in the table below. Revised and/or additional information regarding this solicitation may be posted on the Pertinent Website(s) listed in the table below.

Contact Person	Becca Trietch
Mailing Address	Rhode Island Office of Energy Resources One Capitol Hill, 4 <sup>th</sup> floor Providence, RI 02908
Email Address	eermc.rfp@gmail.com
Pertinent Website(s)	<a href="http://www.rieermc.ri.gov/">http://www.rieermc.ri.gov/</a>

**2.2 Important Dates.** Important dates regarding this RFP are listed in the table below.

RFP Issuance Date	August 31, 2017
Pre Proposal Conference Date	Not Applicable
Written Questions Due Date	Thursday, September 14, 2017 at 5:00 PM (Eastern Time).
Submission Deadline	Thursday, October 5, 2017 at 5:00 PM (Eastern Time).

**2.3 Pre Proposal Conference.** There will be no pre-proposal conference for this RFP.

**2.4 Written Questions.** Prospective offerors may submit written questions pertaining to this RFP. Questions must be emailed as a Microsoft WORD or searchable PDF attachment to the Contact Person. The deadline to submit questions is listed within the table in Section 2.2 of this RFP. Questions and EERMC’s responses will be posted on the Pertinent Website(s).

**2.5 Amendments to this RFP.** If this RFP is amended or addendums are issued, written notice of the amendments and/or addendums will be posted on the Pertinent Website(s).

**2.6 Submission Deadline.** Each Proposal will include three (3) components: technical, cost, and ISBE. All three components must be received by the

Contact Person by the Submission Deadline as listed within in the table in Section 2.2 of this RFP.

**2.7 Submission Requirements.** Each Proposal must be mailed or hand delivered to the Contact Person and must include the following:

- One (1) original technical component plus three (3) printed paper copies.
- One (1) original cost component plus three (3) printed paper copies. The original cost component and copies must be separated from the technical component and placed in a sealed envelope. Please label the sealed envelope as “Cost Proposal”.
- One (1) original ISBE component plus three (3) printed paper copies. This original ISBE component and copies must be separated from the technical component and placed in a sealed envelope. Please label the sealed envelope as “ISBE Proposal”.
- A thumb drive or CD-R that contains the electronic versions of the technical component, cost component (must be saved as a separate file from the technical component), and ISBE component (must be saved as a separate file from the technical component). The electronic versions must be in a searchable PDF or Microsoft WORD format unless otherwise permitted by the Contact Person. Please label each file on the thumb drive or CD-R as “Technical Proposal” or “Cost Proposal” or “ISBE Proposal”.

**2.8 Formatting of Written Documents.** For clarity, the technical component should be typed and sections should be clearly labeled to correspond with the pertinent RFP sections. These documents should use 1” margins on 8.5”x 11” paper using a font of 12 point. Technical components should be a maximum of fifteen (15) pages not counting any attachments. Each attachment should be referenced appropriately within the proposal section and the attachment title should reference the proposal section it is applicable to. The Cover Sheet, Cost component and ISBE component should be typed using the attached templates.

## **SECTION 3: EVALUATION AND SELECTION PROCESS**

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**3.1 Technical Review Team.** Proposals will be evaluated and scored by a technical review team in accordance with the criteria contained herein. The chief purchasing officer, or the technical review team through delegated authority from the chief purchasing officer, will make a recommendation to the EERMC. An award shall be made to the responsible offeror(s) whose proposal is determined to be the most advantageous to the EERMC, taking into consideration price and the evaluation factors set forth in this solicitation. The EERMC is responsible for the final selection of an offeror. The EERMC reserves the right to award one, multiple, or no awards based on the proposals

received. The EERMC also reserves the right to reissue the RFP at its sole discretion.

- 3.2 Technical Component Evaluation Stage.** To advance to the second stage of the evaluation process, which factors in the cost and ISBE components, the offeror must earn a technical component score of at least 55 (84.6%) out of the maximum 65 technical points. Any proposal with a technical component score of less than 55 points will not have the cost or ISBE components opened nor evaluated and the proposal will be dropped from further consideration.
- 3.3 Cost & ISBE Components.** Proposals scoring 55 technical points or higher will be evaluated for cost and assigned up to a maximum of 25 points in the cost category. In addition, proposals scoring 55 technical points or higher will be evaluated for ISBE participation and assigned up to a maximum of 6 points in the ISBE participation category bringing the potential maximum score to 106 points.
- 3.4 Scoring.** Proposals will be reviewed and scored based upon the following criteria:

Criteria	Points Available
Overview and Work Plan	35
Qualifications and Experience	25
Project Management and Organization	5
Total Technical Points	65
Cost	25
Total Possible Evaluation Points	90
ISBE Bonus Points	6
Interview Presentation Quality	10
Total Possible Points	106

- 3.5 Calculation of Cost Points.** The offeror with the lowest cost proposal shall receive one hundred percent (100%) of the available points for cost. All other offerors shall be awarded cost points based upon the following formula:

$$(\text{lowest cost proposal} / \text{offeror's cost proposal}) \times \text{available points}$$

For example, if Offeror A is the offeror with the lowest cost proposal of \$65,000 and Offeror B proposes a cost of \$100,000 and the total points available are 30, Offeror A would get the full 30 points and Offeror B's cost points are calculated as follows:  $\$65,000 / \$100,000 \times 30 = 19.5$  points.

- 3.6 Calculation of ISBE Points.** See Sections 1.5, 1.6 and 1.7 of this RFP for more information. EERMC adheres to 150-RICR-90-10-1 entitled *Regulations Governing Participation by Small Business Enterprises in State Purchases of Goods and Services and Public Works Projects*. The offer with the highest ISBE participation

rate shall receive one hundred percent (100%) of the available points for ISBE. All other offerors shall be awarded ISBE points based upon the following formula:

$$\left( \frac{\text{offeror's proposed ISBE participation rate}}{\text{offeror with highest ISBE participation rate}} \right) \times \text{available points}$$

For example, if Offeror A has the highest ISBE participation rate of 20% and Offeror B proposes an ISBE participation rate of 12% and the total points available are 6, Offeror A would get the full 6 points and Offeror B's cost points are calculated as follows:  $12\% / 20\% \times 6 = 3.6$  points. See Sections 3.7 and 3.8 of this RFP for information on how ISBE participation rates are calculated.

**3.7 ISBE Participation Rate if the Offeror is an ISBE.** The ISBE participation rate for an offeror who is an ISBE shall be expressed as a percentage and shall be calculated by taking the sum of the amount of the offeror's total contract price that will be subcontracted to ISBEs and the amount that will be self-performed by the offeror and dividing that number by the ISBE offeror's total contract price. For example if the offeror's total contract price is \$100,000.00 and it subcontracts a total of \$12,000.00 to ISBEs and will perform a total of \$8,000.00 of the work itself, the offeror's ISBE participation rate would  $(\$12,000 + \$8,000) / \$100,000 = 20\%$ .

**3.8 ISBE Participation Rate if the Offeror is not an ISBE.** The ISBE participation rate for an offeror who is not an ISBE shall be expressed as a percentage and shall be calculated by taking the amount of the offeror's total contract price that will be subcontracted to ISBEs and dividing that number by the ISBE offeror's total contract price. For example if the offeror's total contract price is \$100,000.00 and it subcontracts a total of \$12,000.00 to ISBEs, the offeror's ISBE participation rate would  $\$12,000 / \$100,000 = 12\%$ .

**3.9 Interview Presentation.** The chief purchasing officer, or the technical review team will select up to three of the highest scoring, qualified offerors based upon total scores received. These offerors will be interviewed by the chief purchasing officer, or the technical review team, to present their proposals and qualifications in person, and answer any questions the chief purchasing officer, or the technical review team may have.

#### **SECTION 4: OFFEROR'S SUBMISSIONS**

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Each offeror must submit a proposal containing the following information. When responding to each section below, please label responses with the corresponding RFP section.

**I. Cover Sheet.** The offeror must complete, execute, and submit the RFP Cover Sheet which is attached hereto.

- II. Technical Proposal.** An offeror's technical proposal must include the following information:
- A. Overview.** The overview should lay out the offeror's understanding of the scope of work, describe the offeror's proposed project work plan and approach, and explain how the offeror is well suited to achieve the project objectives.
  - B. Work Plan.** The offeror should describe its proposed project work plan in detail. Specifically, the offeror should describe how they will provide services to meet all the Responsibilities described in the Scope of Work. An illustrative annual timeline must also be included to showcase the offeror's understanding of key Council activities.
  - C. Company Profile.** Provide an overview of history, length of time in business, organizational and staff capacity, core competencies, and any other resources uniquely suited to achieving project objectives.
  - D. Relevant Experience:** Describe offeror's experience with similar projects.
  - E. Examples of Prior Work:** If possible, reference two or three examples of previous projects that best display the offeror's ability and experience with work of a similar nature. Specify the role the offeror played in each project.
  - F. Reference Information:** Provide names, email addresses, telephone numbers, and permission to contact two former or current clients for which the offeror has performed work in the last three years.
  - G. Identification of Staff and Subcontractors.** List all staff and subcontractors proposed as members of the offeror's team.
  - H. Staff Responsibilities.** Specifically describe each of staff and subcontractor duties, responsibilities, and areas of concentration for the project.
  - I. Staff Experience.** Please include resumes, curricula vitae, or statements of prior experience and qualification. An organizational chart showing roles and responsibilities on the project is desirable. The team may include subcontractors; however, the lead offeror will be solely responsible for the management and deliverables of the team.
  - J. Conflicts of Interests.** Describe any known conflicts of interest between offeror or an affiliate of offeror and any distribution company, or any affiliates of the foregoing. In addition, describe any known conflicts of interest between offeror or an affiliate of offeror and any member of the EERMC.
  - K. Litigation.** Describe any litigation, disputes, claims or complaints, or events of default or other failure to satisfy contract obligations, or failure to deliver

products, involving offeror or an affiliate of offer, and relating to providing services similar to the services being solicited by the EERMC.

**L. Investigation.** Confirm that offeror, and the directors, employees and agents of offeror and any affiliate of offeror are not currently under investigation by any governmental agency and have not in the last four years been convicted or found liable for any act prohibited by state or federal law in any jurisdiction involving conspiracy, collusion or other impropriety with respect to bidding on any contract.

**III. Cost Proposal.** Offerors must separate their cost proposals from their technical proposals and place cost proposals in a sealed envelope. Please complete, execute, and submit a cost proposal using the cost proposal form template attached hereto. Offerors must complete both Task Sheets Page(s) and the All-Inclusive Price Page. Please note that the Scope of Work is expected to require a commitment of approximately 4,500 hours during the course of 2018 starting on January 1, 2018, with an option for the EERMC to decide whether to renew and continue the selected consultant's work for 2019 and 2020.

**IV. ISBE Proposal.** Offerors must separate their ISBE proposals from their technical proposals and place ISBE proposals in a sealed envelope. To be eligible for ISBE points, an offeror must complete, execute, and submit the ISBE form template attached hereto. Offerors must complete both the List of ISBE Page and the ISBE Participation Rate Page. Failure to submit an ISBE proposal will result in the offeror receiving 0 points in the ISBE scoring category. See RFP Sections 1.5, 1.6, 1.7, 3.6, 3.7, and 3.8 for additional information.

## **SECTION 5: PROJECT DESCRIPTION AND SCOPE OF WORK**

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**5.1 Summary:** The Rhode Island Energy Efficiency and Resource Management Council (EERMC) is seeking the assistance of a technical consultant (Consultant) beginning on January 1, 2018. The Consultant will provide planning and policy support to the EERMC in its review and oversight of energy efficiency and system reliability programs and initiatives proposed and administered by the electric and gas distribution company as required by R.I.G.L. § 39-1-27.7.

**5.2 Background and Motivation.** The EERMC, a fourteen-member council appointed by the Governor with advice and consent of the Senate, includes ten voting members that represent large and small commercial and industrial customers, residential customers, low income customers, environmental interests, energy design and codes, energy law and policy, energy efficiency education and employment tracking, and municipal energy users. The four non-voting members include representatives from the electric and gas utilities, heating fuel industry, and the Commissioner of the Office of Energy Resources (OER). The EERMC reports annually to the Public Utilities Commission (PUC)

and to the General Assembly, and works closely with the OER. For more information, please visit: [www.rieermc.ri.gov](http://www.rieermc.ri.gov).

The Policy & Program Planning Consultant will be a crucial partner and resource to the EERMC in achieving its objectives as defined in R.I.G.L. § 42-140.1-3. These objectives are:

1. Evaluate and make recommendations including, but not limited to, the development and implementation of utility plans and programs for the least cost procurement of energy efficiency and system reliability resources that are cost-effective compared to traditional supply options; and
2. Provide consistent, comprehensive, informed, and publicly accountable stakeholder involvement in energy efficiency and system reliability resources; and,
3. Monitor and evaluate the effectiveness of programs to achieve the procurement of and investment in energy efficiency and system reliability resources; and
4. Promote public understanding of energy issues and of ways in which energy efficiency and system reliability resource procurement and investments can be effectuated.

- 5.3 Scope of Work:** The overarching responsibility of the selected Consultant is to enable the EERMC to meet its statutory objectives by managing projects, providing technical support, and ensuring tasks are accomplished and goals are met. Specifically, the Consultant will provide critical services and support for EERMC priorities through the following roles and responsibilities:

#### **Responsibilities related to EERMC Oversight**

- Enhance EERMC member interpretation and understanding of utility efficiency, distributed generation, and system reliability program planning, policy development and implementation, and facilitate EERMC member participation in the planning and oversight process. Educate EERMC members, as needed, regarding other relevant, energy-related topics.
- Actively participate and provide expertise in all EERMC meetings (including any Sub-Committee or Ad-Hoc Committee meetings); all Demand Collaborative meetings (including any Sub-committee or Ad-hoc meetings); System Reliability Subcommittee meetings; meetings with OER and other state agencies engaged in the implementation of least-cost procurement initiatives; all relevant PUC meetings, technical sessions, and proceedings; and any other stakeholder meetings that may be important to the successful advancement of Rhode Island's least-cost procurement mandates.
- Develop and review policies on a range of issues germane to the EERMC's duties including, but not limited to, triennial and annual efficiency and system reliability plan development and implementation; efficiency and system reliability standards development; energy efficiency savings targets;

program budget and financing; cost-effectiveness; evaluation, monitoring, and verification; financing; and performance incentives.

- Document and/or conduct research and analysis, and create recommendations so that stakeholder representatives can make decisions based on sound information. Provide policy summaries, analysis, and whitepapers, as needed, to inform, guide, and empower stakeholder representatives.
- Fully participate in the development of EERMC priorities and provide technical inputs, analyses, and other efforts as necessary to advance the EERMC's priorities within the development, implementation, and evaluation of utility plans and programs for least cost procurement.
- Assume overall responsibility for managing and coordinating the work of any additional consultants hired by the EERMC to support its objectives.
- Evaluate the impacts of past and potential legislation and/or PUC directives on energy efficiency and system reliability, including, but not limited to, legislation or PUC orders related to decoupling, and system benefit charge (SBC) collections and allocations. Educate key stakeholder on such legislation and associated impacts.

#### **Responsibilities related to the development of work products and representation of the EERMC**

- Develop work products for relevant PUC dockets (e.g. annual natural gas and electric efficiency plans), including direct testimony on behalf of the EERMC upon its request.
- Provide technical support from, and representation of, the EERMC with respect to relevant state and regional policies before entities including, but not limited to, the Rhode Island General Assembly and Executive branch agencies, ISO-New England, the Regional Greenhouse Gas Initiative (RGGI), and the Forward Capacity Market (FCM).
- Support the development of the required Annual Report on EERMC activities due on April 15 of each year to the General Assembly.
- Represent the priorities of the EERMC in various relevant stakeholder forums, including, but not limited to: codes and standards initiatives; the Alliance for Healthy Homes; the Power Sector Transformation Initiative; building energy labeling initiatives; regional and local evaluation, measurement and verification (EM&V) efforts; and efforts to improve efficiency delivery to multifamily buildings, the farm and agriculture sector, Block Island residents and businesses, income eligible consumers, and any other identified, underserved market sector.
- Assist with oversight of National Grid's investment of ratepayer funds, including by participating in monthly meetings with the company's strategy groups.

#### **Responsibilities related to Energy Efficiency and System Reliability Program Design and Delivery**



- Represent the EERMC’s priorities in the development of annual and triennial energy efficiency and system reliability plans.
- Verify that energy efficiency program design and implementation are delivering excellent service and maximizing the benefits of energy efficiency for all ratepayers. Provide technical support and recommendations to the utility and other key stakeholders to continually enhance program design and implementation.
- Advocate for program design and delivery improvements, including, but not limited to, providing recommendations for increasing the benefits of efficiency to underserved sectors.
- Conduct a detailed review and report on the cost-effectiveness of the annual and triennial natural gas and electric efficiency plans for submittal to the PUC.
- Provide independent assessment of utility data reports and information, including monthly data dashboards, quarterly data, and year-end performance results. Make recommendations for improvements.
- Advocate for excellent data reporting, transparency, and access to data when appropriate.
- Apprise the EERMC of developments in other jurisdictions that could improve the quality and delivery of energy efficiency programs and system reliability investments in Rhode Island.
- Monitor, facilitate, and report on the implementation and progress towards the goals of the annual Energy Efficiency Program Plan, including regular meetings with National Grid program managers and other affected stakeholders.
- Work with National Grid to receive more comprehensive and timely exchanges of relevant data as needed by the EERMC and/or OER.
- Work with National Grid and other stakeholders to ensure that all utility-administered energy efficiency programs are effectively coordinated and integrated with other state clean energy initiatives, including, but not limited to, programs funded through RGGI and implemented by OER and financing mechanisms through the Rhode Island Infrastructure Bank.

**Responsibilities related to Advancing Integrated Approaches and Addressing Emerging Issues**

- Identify innovative approaches and improvements to energy efficiency program delivery, including, but not limited to:
  - Gas/electric integration;
  - Infrastructure development;
  - Best practices and emerging technologies;
  - Statewide education and marketing;
  - Program designs that are both deeper and broader;
  - Evaluation, measurement, and verification;
  - Financing;

- Efficiency for delivered fuels;
  - Innovative delivery mechanisms and partnerships;
  - Performance metrics and incentives;
  - Strategic electrification;
  - Demand management; and
  - Other new or emerging issues.
- Document research and recommendations in the format most appropriate for the audience and purpose.
- Provide direct support to OER in the form of training, planning, technical analysis, and guidance for new initiatives, and relevant specialized expertise to assist OER with existing programs and pilot programs, including programs identified in OER’s RGGI Allocation Plans.
- Provide direct support to OER on renewable integration with energy efficiency (e.g. PACE Program).
- Research and support planning initiatives for the integration and leveraging of broader energy issues, such as strategic electrification and resiliency, with ratepayer funded efforts.
- Provide any additional work on special projects as directed by the EERMC or on an as-needed basis.

**Candidate qualifications must include:**

- A team of professionals with significant energy efficiency and system reliability/ customer-side resource expertise, stakeholder and collaborative process experience, and a capacity and track record of implementing both tried-and-true and innovative approaches to meeting aggressive energy efficiency targets and system reliability investments.
- Demonstrated technical expertise, including experience in energy efficiency and system reliability program planning, budgeting, implementation, oversight, and evaluation and verification.
- Demonstrated knowledge and understanding of energy efficiency and system reliability programs nationwide. The ability to leverage similar work in neighboring states to offer some cost mitigation and efficiencies is preferred.
- Technical degrees are preferred, but not required.
- Demonstrated knowledge and understanding of Rhode Island’s unique suite of clean energy laws and policies, particularly its least-cost procurement statute, is preferred.

Selected offeror(s) will report directly and solely to the EERMC<sup>1</sup>.

If an offeror identifies a need for additional tasks, the offeror may indicate such additions in the project proposal.

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<sup>1</sup> The Consultant will provide monthly verbal and written reports of issues and work tasks from previous months at monthly open meetings of the EERMC. The Consultants will also provide verbal and written summaries of upcoming issues to be resolved. All reports will be provided electronically and archived on the [www.rieermc.ri.gov/](http://www.rieermc.ri.gov/).

#### 5.4 Required Deliverables

- A proposal must contain all requirements described in Section 4 of this RFP and an illustrative annual timeline to showcase the offeror’s understanding of key Council activities
- During the 2018 year, the selected offeror(s) will be responsible for, but not limited to, deliverables such as:
  - A cost effectiveness report on National Grid’s 2018 Annual Energy Efficiency Program Plan
  - Quarterly memos and/or presentations to the Council on energy efficiency program progress
  - Monthly presentations and report outs to the Council on relevant topics such as program oversight, and evaluation, measurement and verification efforts
  - Council website updates
  - Coordinating and presenting at an annual Council retreat

#### 5.5 Expected Timeline

<b>Milestone</b>	<b>Anticipated Date</b>
Proposal Award	October-November 2017
Selected Offer to Begin Work	January 1, 2018
Interim Tasks & Reports	Rolling
Possible Extension of Work for 2019	December 2018

# RFP Cover Sheet

<b>Offeror's Name:</b>	
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<b>RFP Information</b>	
Title of RFP:	
RFP Number:	

<b>Offeror Information</b>	
Legal Name of Offeror:	
Type of Entity (i.e. corporation, partnership, sole proprietorship):	
Mailing Address of Primary Place of Business:	
Phone Number:	
Website:	

<b>Contact Person for the Offeror</b>	
Name:	
Title:	
Mailing Address:	
Phone Number:	
Email Address:	

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Signature of Authorized Person

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Date

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Printed Name, Title

## Cost Proposal - Task Sheets

<b>Offeror's Name:</b>	
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**Task Sheets.** Please add or delete rows for team members and add or delete task tables as needed.

<b>Task 1:</b>			
<b>Labor Costs</b>			
<b>Subcontractor or Team Member Name and/or Job Title</b>	<b>Hourly Rate</b>	<b>Estimated Hours</b>	<b>Evaluated Price (Hourly Rate * Estimated Hours)</b>
<b>Additional expenses that are not included in hourly rate</b>			
<b>Description of Expense</b>		<b>Price</b>	
<b>Total Task Price:</b>		\$ _____	

## Cost Proposal - All-Inclusive Price and Signature Page

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Offeror's Name:	
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**One All-Inclusive Price.** This number represents the sum of all total task prices and any other costs and expenses charged to EERMC.

<b>All-Inclusive Price:</b>	\$ _____
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Signature of Authorized Person

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Date

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Printed Name, Title

## ISBE Proposal – List of ISBEs Page

<b>Offeror's Name:</b>	
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Please see Sections 1.5, 1.6, 1.7, 3.6, 3.7, and 3.8 of the RFP for additional information.

<b>Is the offeror a State certified ISBE (MBE, WBE or Disability Business Enterprise):</b>	YES <input type="radio"/>	NO <input type="radio"/>
	If YES, provide the total dollar amount representing work that will be done by the offeror: <div style="text-align: right; margin-top: 10px;">\$ _____</div>	

<b>Identification of ISBE Subcontractors (Please add rows as necessary)</b>		
ISBE Subcontractor's Name	ISBE Mailing Address, Email Address, and Phone Number	The total dollar amount representing work that will be done by the ISBE Subcontractor
		\$ _____
		\$ _____
		\$ _____

# ISBE Proposal – Participation Rate and Signature Page

<b>Offeror's Name:</b>	
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<b>A. Total amount of dollars representing work that will be done by the ISBEs:</b>	\$ _____
<b>B. All-Inclusive Price Listed in the Cost Proposal:</b>	\$ _____
<b>ISBE Participation Rate (=A/B):</b>	_____ %

\_\_\_\_\_  
Signature of Authorized Person

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name, Title