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## Memorandum

TO: PUBLIC UTILITIES COMMISSION

FROM: JONATHAN SCHRAG, DPUC AND TIM WOOLF, SYNAPSE ECONOMICS

DATE: 8/14/2018

RE: **DOCKET 4684. DIVISION COMMENTS ON THE REVISIONS TO LEAST-COST PROCUREMENT STANDARDS**

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On August 3 the Commission Staff circulated a new set of least-cost procurement (LCP) standards, on which parties are asked to comment by August 24. Attached to this memo is copy of the Staff's proposal with redlines. This memo explains the key redlines that are offered in that attachment.

First, in Section B(i) it is important to clarify that the Rhode Island Benefit Cost Test (RI Test) developed in Docket 4600 should be the test that is used to determine the cost-effectiveness of energy efficiency resources. The purpose of developing that test was to use it for assessing the cost-effectiveness of energy efficiency, as well as other types of DERs. Further, the RI Test was used to assess the cost-effectiveness of the energy efficiency programs in the 2018 Energy Efficiency Plan.

Second, in Section B(ii) it is important to be clear that the standard for "less than the cost of supply" should also be based on the RI Test, which includes costs associated with generation, transmission, and distribution.

Third, the RI Test is still a work in progress and there are some impacts whose values still need to be developed. Some of those values are likely to take considerable resources and time to develop. The Division recognizes that the need to review and update the implementation of the 4600 framework as better methods become available must be balanced with the need to provide stakeholders reliable goalposts over several years' planning cycle. We would look forward to greater discussion with all parties on how to achieve this balance over a planning cycle without interrupting development of individual annual plans.

Fourth, the impacts included in the RI Test are listed as “mixed benefit-cost, cost, or benefit.” By not separating the costs from the benefits this way, it is difficult to articulate separately the costs of supply and the costs of energy efficiency. This challenge can be easily remedied by requiring the distribution company to separately identify the costs of supply from the costs of energy efficiency. This is necessary anyway to conduct a benefit-cost analysis, and this is what National Grid did when applying the RI Test in the 2018 Energy Efficiency Plan. Section B(ii) of the attached redlined copy of the LCP standards includes a requirement that the distribution company separately identify the costs of supply and the costs of energy efficiency. In practice, the costs of energy efficiency are frequently referred to as “costs,” while the costs of supply are referred to as “avoided costs” or “benefits.”

The Division is in the process of preparing a report to describe the methodologies that should be used to develop inputs to the RI Test.<sup>1</sup> This report starts by consolidating the RI Test developed in Docket 4600 into a simpler version that separately identifies the costs and the benefits. Table 1 below presents a summary of the RI Test as approved in Docket 4600, and Table 2 below presents a consolidated version that separates the cost of energy efficiency (costs) from the cost of supply (benefits). If National Grid were to use this format for presenting its application of the RI Test, then the Commission and others would have sufficient information to compare the cost of energy efficiency with the cost of supply.

Fifth, given that the RI Test is still a work in progress and some values have not yet been developed, the Division intends to work with all parties to create a common understanding of which costs and benefits are relevant to include in any one analysis. The Commission and others may want to also assess whether the costs of supply and the cost of energy efficiency are consistent in terms of which costs are included. Section B(ii) of the attached redlined copy of the LCP standards includes language that will allow the Commission and others to make both of these assessments.

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<sup>1</sup> The Division plans to complete this report and submit it to the Commission within the next six weeks.

**Table 1: The Rhode Island Benefit-Cost Test – From Docket 4600**

Level	Mixed Cost or Benefit Category From Original Framework	Consolidated Benefits and Costs
Power Sector	Energy Supply & Transmission Operating Value of Energy Provided or Saved (Time- & Location-specific LMP)	Benefit: Reduced Energy Costs
	Renewable Energy Credit Cost / Value	Benefit: Reduced REC Costs
	Retail Supplier Risk Premium	Benefit: Reduced Energy Costs
	Forward Commitment: Capacity Value	Benefit: Reduced Generation Capacity Costs
	Forward Commitment: Avoided Ancillary Services Value	Benefit: Reduced Ancillary Services Costs
	Utility / Third Party Developer Renewable Energy, Efficiency, or DER costs	Cost: Utility Administration and Measure Costs Cost: Third Party Developer Costs
	Electric Transmission Capacity Costs / Value	Benefit: Reduced Transmission Costs
	Electric transmission infrastructure costs for Site Specific Resources	Cost: Increased Transmission Costs
	Net risk benefits to utility system operations (generation, transmission, distribution) from 1) Ability of flexible resources to adapt, and 2) Resource diversity provided by DER to limit impacts (ADD TIM R EDIT)	Benefit: Reduced Risk
	Option value of individual resources	Benefit: Reduced Risk
	Investment under Uncertainty: Real Options Cost / Value	Benefit: Reduced Risk
	Energy Demand Reduction Induced Price Effect	Benefit: Wholesale Market Price Suppression Effect
	Greenhouse gas compliance costs	Benefit: Reduced Carbon Compliance Costs
	Criteria air pollutant and other environmental compliance costs	Benefit: Reduced Environmental Compliance Costs
	Innovation and Learning by Doing	Benefit: Innovation and Market Transformation
	Distribution capacity costs	Benefit: Reduced Distribution Costs Cost: Increased Distribution Costs
	Distribution delivery costs	Benefit: Reduced Distribution Costs Cost: Increased Distribution Costs
	Distribution system performance	Benefit: Reduced Distribution Costs Cost: Increased Distribution Costs
	Customer	Utility low income
Distribution system and customer reliability / resilience impacts		Benefit: Reduced Distribution Costs Cost: Increased Distribution Costs
Distribution system safety loss/gain		Benefit: Reduced Distribution Costs Cost: Increased Distribution Costs
Program participant / prosumer benefits / costs		Cost: Participant Measure Costs Cost: Participant Non-Energy Costs Benefit: Participant Non-Energy Benefits
Participant non-energy costs/benefits: Oil, Gas, Water, Waste Water		Cost: Increased Water and Other Fuel Use Benefit: Reduced Water and Other Fuel Use
Societal	Low-Income Participant Benefits	Benefit: Low-Income Participant Non-Energy Benefits
	Consumer Empowerment & Choice	Benefit: Customer Empowerment
	Non-participant (equity) rate and bill impacts	Rate and Bill Impacts. Not an input to the cost-effectiveness model.
	Greenhouse gas externality costs	Benefit: Reduced Carbon Emissions
	Criteria air pollutant and other environmental externality costs	Benefit: Reduced Environmental Impacts (non-GHG)
	Conservation and community benefits	Benefit: Reduced Environmental Impacts (non-GHG)
	Non-energy costs/benefits: Economic Development	Benefit: Economic Development Impacts
	Innovation and knowledge spillover (Related to demonstration projects and other RD&D preceding larger scale deployment)	Benefit: Innovation and Market Transformation (captured in the Power Sector)
Societal Low-Income Impacts	Benefit: Societal Low-Income Benefits	
Public Health	Benefit: Public Health Benefits	
National Security and US international influence	Benefit: Energy Security Benefits	

**Table 2. A Consolidated Cost-Effectiveness Framework**

<b>Level of Impact</b>	<b>Cost or Benefit</b>
<b>Costs</b>	
<b>Power Sector</b>	Utility Administration Costs
	Utility Measure Costs
	Utility Shareholder Incentives
	Increased Transmission Costs
	Increased Distribution Costs
<b>Customer</b>	Participant Measure Costs
	Participant Non-Energy Costs
<b>Societal</b>	Third Party Developer Costs
	(Other costs included in net societal benefits)
<b>Benefits</b>	
<b>Power Sector</b>	Reduced Energy Costs
	Reduced Generation Capacity Costs
	Reduced Transmission Costs
	Reduced Distribution Costs
	Reduced Ancillary Services Costs
	Wholesale Market Price Suppression Effect
	Reduced REC Costs
	Reduced Carbon Compliance Costs
	Reduced Environmental Compliance Costs
	Reduced Risk (net)
	Utility Non-Energy Benefits (net)
	Innovation and Market Transformation
	<b>Customer</b>
Participant Non-Energy Benefits	
Low-Income Participant Non-Energy Benefits	
Customer Empowerment	
<b>Societal</b>	Reduced Carbon Emissions (net)
	Reduced Environmental Impacts (net)
	Economic Development Impacts (net)
	Societal Low-Income Benefits (net)
	Public Health Benefits (net)
	Energy Security Benefits (net)

**STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS**

**PUBLIC UTILITIES COMMISSION**

**LEAST COST PROCUREMENT STANDARDS**

**CHAPTER 1 – Energy Efficiency Procurement**

**1.1. Introduction**

- A. Energy Efficiency (EE) Procurement, as mandated by §39-1-27.7, is intended to complement system reliability and supply procurement as provided for in §39-1-27.8, with the common purpose of meeting electrical and natural gas energy needs in Rhode Island in a manner that is optimally cost-effective, reliable, prudent, and environmentally responsible.
- B. In order to adhere to the principles set forth in §39-1-27.7, and to meet Rhode Island’s energy system needs in a least cost manner, the EE Standards set forth guidelines for the development of least cost energy efficiency plans.

**1.2. Definitions**

- A. Energy Efficiency
  - i. Energy efficiency is defined as the reduction of energy consumption or strategic and beneficial management of the time of energy use within a defined system. A system may be a residence; a place of business; a public accommodation; or an energy production, delivery, and end-use consumption network.
  - ii. Energy Efficiency Plans<sup>1</sup> should be designed, where possible, to complement the objectives of Rhode Island’s energy efficiency; renewable energy; and clean energy programs, and describe their interaction with them, including, but not limited to, the System Reliability Procurement Plan; the Renewable Energy Standard; the Renewable Energy Growth Program; the Net Metering Program; and the Long-Term Contracting for Renewable Energy Standard. Energy Efficiency Plans should also be coordinated, where possible, with other applicable energy procurement, planning, and investment programs, including, but not limited to, Standard Offer Supply Procurement.
  - iii. Innovation. Energy Efficiency Plans should address new and emerging issues as they relate to Least Cost Procurement (e.g., CHP, strategic electrification, integration of grid modernization, gas service expansion, distributed generation and storage technologies, energy efficiency services for non-regulated fuels,

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<sup>1</sup>Energy Efficiency Plans refers to both the EE Procurement Plan (or Three-Year Plan) and EE Program Plan (or Annual Plan), as applicable.

etc.), as appropriate, including how they may meet State policy objectives and provide system, customer, environmental, and societal benefits.

iv. Comprehensiveness.

The distribution company should consistently design programs and strategies to ensure that all customers have an opportunity to benefit comprehensively through types of measures or depth of services, realizing both near-term and long-lived savings opportunities where appropriate, from expanded investments in this low-cost resource. The programs should be designed and implemented in a coordinated fashion by the distribution company, in active and ongoing consultation with the Energy Efficiency and Resource Management Council (Council).

- a. Equity. The portfolio of programs proposed by the distribution company should be designed to ensure that different sectors and all customers receive opportunities to participate and secure efficiency resources lower cost than the cost of supply.

B. Cost-Effectiveness

- i. The distribution company shall assess the cost-effectiveness of measures, programs, and portfolios according to ~~the Rhode Island Benefit Cost Test (RI Test) that was approved by the Public Utilities Commission (PUC) in Docket 4600A.~~ The distribution company shall, after consultation with the Council, propose the specific benefits and costs to be reported, and factors to be included, in the RI Test and include them in Energy Efficiency Plans. 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 technologies, such as income-eligible programs or combined heat and power, may be considered.

- ii. The distribution company shall apply the following principles when developing the RI Test:

- a. **Efficiency as a Resource.** EE is one of many resources that can be deployed to meet customers' needs. It should, therefore, be compared with both supply-side and demand-side alternative energy resources in a consistent and comprehensive manner.
- b. **Energy Policy Goals.** Rhode Island's cost-effectiveness test should account for its applicable policy goals, as articulated in legislation, PUC orders, regulations, guidelines, and other policy directives.
- c. **Hard-to-Quantify Impacts.** Efficiency assessment practices should account for all relevant, important impacts, even those that are difficult to quantify and monetize.

**Commented [TW1]:** This change is necessary to make the first sentence consistent with the second sentence. As well as sections below.

**Deleted:** a benefit-cost test that builds on the Total Resource Cost Test

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**Deleted:** Rhode Island Benefit Cost Test (

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- d. **Symmetry.** Efficiency assessment practices should be symmetrical, for example, by including both costs and benefits for each relevant type of impact.
  - e. **Forward Looking.** Analysis of the impacts of efficiency investments should be forward-looking, capturing the difference between costs and benefits that would occur over the life of efficiency measures with those that would occur absent the efficiency investments. Sunk costs and benefits are not relevant to a cost-effectiveness analysis.
  - f. **Transparency.** Efficiency assessment practices should be completely transparent, and should fully document and reveal all relevant inputs, assumptions, methodologies, and results.
- iii. With respect to the value of greenhouse gas reductions, the RI 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 RI 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 RI Test may include the value of greenhouse gas reduction not embedded in any of the above. The RI Test may also include the costs and benefits of other emissions and their generation or reduction through Least Cost Procurement.
  - iv. Benefits and costs that are projected to occur over the term of the Energy Efficiency Plans shall be stated in present value terms in the RI Test calculation using a discount rate that appropriately reflects the risks of the investment of customer funds in energy efficiency; in other words, a discount rate that indicates that energy efficiency is a low-risk resource in terms of cost of capital risk, project risk, and portfolio risk. The discount rate shall be reviewed and updated in the Energy Efficiency Plans, as appropriate, to ensure that the applied discount rate is based on the most recent information available.
  - v. The distribution company shall provide a discussion of the carbon impacts efficiency and reliability investment plans will create, whether captured as benefits or not.
  - vi. The distribution company shall measure cost effectiveness according to the RI Test. In order to assess the impact of adopting the RI Test, the distribution company shall provide a comparison of its cost-effectiveness analysis under the Total Resource Cost (TRC) Test, as approved by the PUC in Docket No. 4580, to the RI Test, as adopted in this proceeding as part of its 2018-2020 Three-Year Plan and for each 2018, 2019 and 2020 Annual Plan filing.

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C. Less than the Cost of Supply

- i. The distribution company shall assess the cost of energy supply and the cost of energy efficiency using all applicable costs enumerated in the Rhode Island

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Benefit Cost Framework approved by the PUC in Docket No. 4600A and the Rhode Island Test, as updated periodically and approved by the PUC. The distribution company shall, after consultation with the Council, propose the specific costs to be included in the cost of energy supply and energy efficiency in Energy Efficiency Plans. These costs should include applicable resource impacts, non-energy impacts, distribution system impacts, economic development impacts, greenhouse gas impacts, among others. The accrual of applicable, specific non-energy costs to only certain programs or technologies, such as income-eligible programs or combined heat and power, may be considered.

ii. The cost of supply shall include costs associated with generation, transmission, and distribution of electricity. Additional energy supply shall mean supply that would be incremental to marginal energy supply.

a. The distribution company shall describe which costs in the cost-effectiveness test were included in the cost of supply and which costs are included in the cost of energy efficiency. For any impacts that are not included in either the cost of supply or the cost of energy efficiency, the distribution company shall describe why they are not included.

C.D. Reliable

- i. Build on prior plans. Energy Efficiency Plans shall describe the recent energy efficiency programs offered by the distribution company and highlight how the Energy Efficiency Plans supplement and expand upon these offerings at the appropriate level of detail, including, but not limited to, new measures, implementation strategies, measures specifically intended for demand or load management, and new programs as appropriate.
  - a. Build on prior programs. Distribution company program development shall proceed by building upon what has been learned to date in distribution company program experience, systematically identifying new opportunities and pursuing comprehensiveness of measure implementation, as appropriate and feasible.

D.E. Prudent

- i. Plan based on potential assessments. The distribution company shall use the Council's Opportunity Report, as issued on July 15, 2008, or other assessments of potential, as resources in developing its Three-Year Plan. The distribution company shall include in its Three-Year Plan an outline of proposed strategies to supplement and build upon these assessments of potential.
- ii. Unlocks capital and effectively uses funding sources. Energy Efficiency Plans

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**Commented [TW4]:** This language allows the Commission and others to determine whether costs are accounted for consistently between energy efficiency and supply.

**Commented [TW5]:** This language allows the Commission and others to evaluate whether any of the costs that were excluded should have been excluded.

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 <#>Which are included identically in the cost-effectiveness test.¶  
 <#>Which are included differently in the cost-effectiveness test, and why, and.¶  
 Which are not applicable, and thus not included, and why they are not applicable.

**Deleted:** <#>The distribution company shall determine whether efficiency portfolios cost less than supply by comparing the levelized cost of the portfolio per.¶  
 <object>unit of lifetime energy saved with the relevant supply cost as defined in item C.iii of this section. The comparison with the cost of supply is a distinct criterion from the cost-effectiveness requirement in item B of this section.¶  
 <#>The levelized cost of the portfolio shall be calculated as the total of all direct spending by the distribution utility, including customer incentives and rebates, administrative costs, implementation contracts, marketing costs, and evaluation activities. Performance incentive payments to the distribution utility at nominal levels and the costs of regulatory support shall also be included. Customer contributions to the cost of efficiency measures are not included in the cost of the efficiency portfolio. The levelized cost shall be calculated using the same discount rate used for the RI Test.¶  
 <#>For the electric efficiency portfolio, the cost of supply shall be calculated.¶  
 using an average of the distribution company's standard offer prices in effect during the 12 months preceding the date of Plan filing. An average standard offer price across all customer sectors shall be used, weighted by the relative lifetime energy savings planned or realized for each sector. For the gas efficiency portfolio, the cost of supply shall be calculated using the most recent Avoided Energy Supply Component Study (AESC) prepared by the AESC Study Group and published triennially. An average levelized avoided cost across all sectors shall be used, weighted by the relative lifetime energy savings planned or realized for each sector.¶



shall include a section outlining and discussing new strategies to make available the capital needed to effectively overcome barriers to implement projects in addition to direct financial incentives provided in order to cost-effectively achieve the Least Cost Procurement mandate. Such proposed strategies shall move beyond traditional financing strategies and shall include new capital availability strategies and partnerships that effectively overcome market barriers in each market segment in which it is feasible to do so.

- iii. Integration. Energy Efficiency Plans shall address how the distribution company plans to integrate gas and electric energy efficiency programs to optimize customer energy efficiency and provide benefits from synergies between the two energy systems and their respective programs.
- iv. Three-Year Plans shall be developed to propose strategies to achieve the energy efficiency savings targets that shall be proposed by the Council and approved by the PUC 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.
- v. Energy Efficiency investments shall be made on behalf of all customers. This will ensure consistency with existing program structure under which all customers pay for, and benefit from, Rhode Island's efficiency programs.

- a. Efficacy. All efforts to establish and maintain program capability shall be done in a manner that ensures quality delivery and is economical and efficient. The Utility shall include wherever possible and practical partnerships with existing educational and job training entities.

**E.F.** Environmentally Responsible

- i. Environmental responsibility is indicated by the procurement of energy savings, compliance with State environmental policies, and the proper valuation of greenhouse gas reduction benefits.

**1.3. EE Procurement Plan**

- A. The distribution company Energy Efficiency and Conservation Procurement Plan (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>2</sup> and shall guide Annual Energy Efficiency 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, prudent and reliable, and consistent with the definitions provided herein. The Three-Year Plan shall contain sections that describe the following:
  - i. Strategies and Approaches to Planning.
  - ii. Cost-Effectiveness
  - iii. Prudence and Reliability
  - iv. Funding Plan and Initial Targets
    - a. The distribution company 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 distribution company 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 R.I. Gen. Laws § 23-82-6;

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<sup>2</sup> As the Three-Year Plan is illustrative and provisional, variances between Annual Energy Efficiency 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 PUC review of Utility explanation for those variances.

- (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. Gen. Laws § 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 Council, the Office of Energy Resources (OER), and the distribution company.
- b. The distribution company 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 kilowatt-hours (kWh) or cents/lifetime million British thermal units (MMBtu). The preliminary budget and initial energy saving targets may be updated, as necessary, in the distribution company's Annual Energy Efficiency Plan.

v. Performance Incentive Plan Structure, pursuant to Section 1.5

#### 1.4. **EE Program Plan**

- A. The distribution company shall prepare and file a supplemental filing containing details of implementation plans by program for the next program year (Annual Energy Efficiency Plan or Annual Plan). Beginning in 2014, the Annual Plan shall be filed on October 15, except in years in which a Three-Year Plan is filed; in those years, the Annual Plan filing shall be made on November 1. The Annual Plan filings shall also provide for adjustment, as necessary, to the remaining years of the Three-Year Plan based on experience, ramp-up, and assessment of the resources available.
- B. Principles of Program Design. The Annual Plan shall identify and contain programs proposed for implementation by the distribution company pursuant to the Three-Year Plan and which demonstrate consistency with the principles of program design described above in Section 1.2.
- C. Cost-effectiveness. The distribution company shall propose a portfolio of programs in the Annual Plan that is cost-effective. Any program with a benefit-cost ratio greater than 1.0 (i.e., where benefits are greater than costs), should be considered cost-effective. The portfolio must be cost-effective and programs should be cost-effective, except as noted below.
- i. The distribution company shall be allowed to direct a portion of proposed funding to conduct research and development and pilot program initiatives. These efforts will not be subject to cost-effectiveness considerations. However,

the costs of these initiatives shall be included in the assessment of portfolio-level cost-effectiveness.

- ii. The distribution company shall allocate funds to the Council and OER as specified in R.I. Gen. Laws § 39-2-1.2. These allocations will not be subject to cost-effectiveness considerations. However, these costs shall be included in the assessment of portfolio-level cost-effectiveness.
- D. Parity. While it is anticipated that rough parity among sectors can be maintained, as the limits of what is cost-effective are identified, there may be more efficiency opportunities identified in one sector than another. The distribution company should design programs to capture all resources that are cost-effective and lower cost than supply. The distribution company should consult with the Council to address ongoing issues of parity
- E. Final Funding Plan and Budget Amounts, Cost-Effectiveness, and Goals
- i. The distribution company shall include a detailed budget for the Annual Plan, covering the annual period beginning the following January 1, that identifies the projected costs; benefits; and energy saving goals of the portfolio and of each program. The budget shall identify, at the portfolio level, the projected total resource cost of efficiency resources in cents/lifetime kWh or cents/lifetime MMBtu.
  - ii. The Annual Plans filed October 15 or November 1 will reflect program implementation experience and anticipated changes, shifts in customer demand, changing market costs, and other factors, including a discussion of market transformation impacts as noted above in Section 1. The annual detailed budget update shall include the projected costs, benefits, and energy saving goals of each program, as well as the total resource cost of efficiency resources in cents/lifetime kWh or cents/lifetime MMBtu.
  - iii. The Annual Plan shall identify the energy cost savings and bill impacts that Rhode Island ratepayers will realize through its implementation.
- F. Program Descriptions
- i. The distribution company shall, as part of its Annual Plan, describe each program, how it will reach its target market, and how it will be implemented. In these descriptions, the distribution company shall demonstrate, as appropriate, how the program is consistent with the principles of program design described above.
  - ii. In addition to these basic requirements, the Annual Plan shall address, where appropriate, the following elements:
    - a. comprehensiveness of opportunities addressed at customer facilities;
    - b. integration of electric and natural gas energy efficiency implementation and delivery (while still tracking the cost-effectiveness of programs by fuel); energy efficiency opportunities for delivered fuels customers should be addressed to the extent possible;

- c. integration of energy efficiency programs with renewables and other System Reliability Procurement Plan elements;
- d. promotion of the effectiveness and efficiency levels of codes, standards, and other market transforming strategies; if the distribution company takes a proactive role in researching, developing and implementing such strategies, it may, after consultation with the Council, propose a mechanism to claim credit for a portion of the resulting savings;
- e. implementation, where cost-effective, of demand response and load management measures or other programs that are integrated into the electric and natural gas efficiency program offerings; such measures/programs will be designed to supplement cost-effective procurement of long-term energy and capacity savings from efficiency measures; and
- f. integration with non-wires alternatives.

G. Monitoring and Evaluation (M&E) Plan

- i. The distribution company shall include an M&E Plan in its Annual Plan.
- ii. This M&E Plan shall address at least the following:
  - a. savings verification, including, where appropriate, analysis of customer usage; such savings verification should also facilitate participation in ISO-NE's forward capacity market;
  - b. issues of ongoing program design and effectiveness;
  - c. any other issues, for example, efforts related to market assessment and methodologies to claim savings from market effects, among others;
  - d. a discussion of regional and other cooperative M&E efforts the distribution company is participating in, or plans to participate in; and
  - e. longer-term studies, as appropriate, to assess programs over time.
- iii. The distribution company shall include in its M&E Plan any changes it proposes to the frequency and level of detail of distribution company program plan filing and subsequent reporting of results.

H. Reporting Requirements

- i. The distribution company, in consultation with the Council, will propose the content to be reported and a reporting format that is designed to communicate clearly and effectively the benefits of the efforts planned and implemented, with particular focus on energy cost savings and program participation levels across all sectors, to secure all EE resources that are lower cost than supply.

I. Performance Incentive Plan, pursuant to Section 1.5

**1.5. Efficiency Performance Incentive Plan**

- A. Pursuant to R.I. Gen. Laws § 39-1-27.7(e) and § 39-1-27.7.1, the distribution company shall have an opportunity to earn a shareholder incentive that is dependent on its performance in implementing the approved Annual Plan.
  - i. The distribution company, in consultation with the Council, will propose in its Three-Year Plan and subsequent Annual Plans a Performance Incentive (PI) Plan that is designed to promote superior distribution company performance in cost-effectively and efficiently securing for customers all efficiency resources lower cost than supply.
  - ii. The PI should be structured to reward program performance that makes significant progress in securing all cost-effective efficiency resources that are lower cost than supply while, at the same time, ensuring that those resources are secured as efficiently as possible.
  - iii. The distribution company PI model currently in place in Rhode Island should be reviewed by the distribution company and the Council. The distribution company and Council shall also review incentive programs and designs in other jurisdictions, including those with penalties and increasing levels of incentives based on higher levels of performance.
  - iv. The PI may provide incentives for other objectives that are consistent with the goals, including, but not limited to, comprehensiveness; customer equity; lifetime net benefits; increased customer access to capital; and market transformation.
- B. The PI should be sufficient to provide a high level of motivation for excellent distribution company performance annually and over the three-year period of the Three-Year Plan, but structured so that customers receive most of the benefit from energy efficiency implementation.
- C. The PI shall state clearly each specific objective it is designed to direct the distribution company to achieve and the reason it is needed to do so. The design of the PI shall be clear and focused, have clear metrics for determining performance, not duplicate incentives, and not provide multiple or different incentives for attaining the same objective.

**1.6. Role of the Council in Energy Efficiency Plan Development and Approval**

- A. The Council shall take a leadership role in ensuring that Rhode Island ratepayers receive excellent value from the Three-Year Plan being implemented on their behalf. The Council shall do this by collaborating closely with the distribution company on design and implementation of the M&E efforts presented by the distribution company under the terms of Section 1.4.D and, if necessary, provide recommendations for modification that will strengthen the assessment of distribution company programs.
- B. In addition to the other roles for the Council indicated in this filing, the distribution company shall seek ongoing input from, and collaboration with, the Council on development of the Three-Year Plan and Annual Plans, and on development of annual updates, if any, to the Three-Year Plan. The distribution company shall seek to receive the endorsement of the Energy Efficiency Plan by the Council prior to submission to the PUC.

- C. The distribution company and the Council shall report to the PUC a process for Council input and review of its 2008 EE Procurement Plan and EE Program Plan by July 15, 2008, and triennially thereafter.
- D. The Council shall vote whether to endorse the Three-Year Plan by August 15, 2008, and triennially thereafter. If the Council does not endorse the Three-Year Plan, then the Council shall document the reasons and submit comments on the Three-Year Plan to the PUC for their consideration in final review of the Three-Year Plan.
- E. The distribution company shall, in consultation with the Council, propose a process for Council input and review of its Three-Year Plan and Annual Plan. This process is intended to build on the mutual expertise and interests of the Council and the distribution company, as well as meet the oversight responsibilities of the Council.
- F. The distribution company shall submit a draft Annual 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.
- G. The Council shall vote whether to endorse the Annual Plan prior to the prescribed filing date. If the Council does not endorse the Annual Plan, the Council shall document its reasons and submit comments on the Annual Plan to the PUC for its consideration in final review of the Annual Plan.
- H. The Council shall prepare memos on its assessment of the cost effectiveness of the Three-Year Plans and Annual Plans, pursuant to R.I. Gen. Laws §39-1-27.7(c)(5), and submit them to the PUC no later than ~~two~~ three weeks following the filing of the respective Energy Efficiency Plans with the PUC.

## CHAPTER 2 - System Reliability Procurement

### 2.1. **Introduction**

- A. System Reliability Procurement (SRP), as mandated by R.I. Gen. Laws §39-1-27.7, is intended to complement energy efficiency and conservation procurement, and supply procurement as provided for in R.I. Gen. Laws §39-1-27.8, with the common purpose of meeting electrical and natural gas energy needs in Rhode Island in a manner that is optimally cost-effective, reliable, prudent, and environmentally responsible.<sup>3</sup>
- B. In order to adhere to the principles set forth in R.I. Gen. Laws §39-1-27.7, and to meet Rhode Island's energy system needs in a least cost manner, the SRP Standards set forth guidelines for the incorporation of energy efficiency, distributed generation, demand response, and other energy technologies (collectively referred to as "non-wires alternatives" or NWA) into distribution company distribution planning. These guidelines seek to enable the deployment of cost-effective NWAs to achieve state policy goals, optimize grid performance, enhance reliability and resiliency, and encourage optimal investment by the distribution company.
- C. SRP should be integrated with the distribution company's distribution planning process and be designed, where possible, to complement the objectives of Rhode Island's energy efficiency; renewable energy; and clean energy programs, and describe its interaction with them, including, but not limited to, the programs described in Section 1.2.A.ii. SRP should also be coordinated, where possible, with other applicable energy procurement, planning, and investment programs, including, but not limited to, Standard Offer Supply Procurement and the Infrastructure, Safety, and Reliability Plan.

### 2.2. **Definitions**

- A. In order to fulfill the intent of the statute, SRP is interpreted to mean an ongoing distribution company practice to maximize the prudent, reliable, and environmentally responsible use of NWAs to meet electric distribution system needs and optimize grid performance, subject to a system whereby wires solutions and NWA solutions can be properly compared for both benefits and costs. NWA, including partial NWA, may be procured to meet distribution system needs of both load and generation.
- B. NWAs may be utilized through various approaches to advance the goals of SRP and optimize grid performance as described in 2.1.B. These approaches may include, but are not limited to:
  - i. strategic promotion of customer-side NWA through investment or outreach by

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<sup>3</sup> R.I. Gen. Laws §39-1-27.7 specifies that standards and guidelines for System Reliability Procurement may include, but not be limited to: (i) procurement of energy supply from diverse sources, including, but not limited to, renewable energy resources as defined in R.I. Gen. Laws §39-26; (ii) distributed generation, including, but not limited to, renewable energy resources and thermally leading combined heat and power systems, which is reliable and is cost-effective, with measurable, net system benefits; (iii) demand response, including, but not limited to, distributed generation, back-up generation, and on-demand usage reduction, which shall be designed to facilitate electric customer participation in regional demand response programs, including those administered by the independent service operator of New England ("ISO-NE") and/or are designed to provide local system reliability benefits through load control or using on-site generating capability.



the distribution company or a third party,

a. customer-side NWAs may include, but are not limited to:

- (1) Least Cost Procurement energy efficiency baseline services,
- (2) peak demand and geographically-focused supplemental energy efficiency strategies,
- (3) distributed generation<sup>4</sup> generally, including combined heat and power and renewable energy resources,<sup>5</sup>
- (4) demand response,
- (5) direct load control,
- (6) energy storage,
- (7) electric vehicles,
- (8) controllable or dispatchable electric heat or cooling,
- (9) alternative metering and tariff options, including time-varying rates;

ii. distribution company investment in grid-side tools and technologies,

a. grid-wide NWAs may include, but are not limited to:

- (1) energy storage,
- (2) voltage management
- (3) communications systems
- (4) grid-optimization technologies<sup>6</sup>
- (5) generation to provide, or in support of, any or all of B(ii)(1)-(4), consistent with Rhode Island General Laws;

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

#### C. Electric Distribution System Needs

i. Electric distribution system needs shall include, but are not limited to: system capacity (normal and emergency), voltage performance, reliability performance, protection coordination, fault current management, reactive power compensation, asset condition assessment, distributed generation constraints, and operational considerations. Note that not all system needs can be addressed by NWAs.

#### D. Optimization of Grid Performance

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<sup>4</sup> In order to meet the statute's environmental goals, generation technologies must comply with all applicable general permitting regulations for smaller-scale electric generation facilities.

<sup>5</sup> The term is defined in the Renewable Energy Standard, R. I. Gen. Laws § 39-26-5; <http://webserver.rilin.state.ri.us/Statutes/TITLE39/39-26/39-26-5.HTM>.

<sup>6</sup> "Grid-facing" investments may include technologies that automate grid operations and allow the distribution company to monitor and control grid conditions in near real time. (Source: MA DPU Docket 12-76-A, pg. 2)

- i. Optimizing grid performance refers to activities undertaken to improve the performance and efficiency of the electric distribution system by the distribution company. Performance improvements can include enhanced reliability, peak load reduction, and increased capacity utilization for more efficient use of assets. More efficient delivery of electricity can include optimization of operations and reduced system losses. Costs and data requirements associated with these optimization activities should be considered.
- ii. In the longer term, optimizing grid performance can include a response to anticipated changes to the distribution system and the associated planning process.

E. Prudence

- i. Prudent planning under SRP will be assessed by:
  - a. risks associated with each alternative (ability to obtain licensing and permitting, significant risks of stranded investment, the potential risk reduction of a more incremental approach, sensitivity of alternatives to differences in load forecasts, and emergence of new technologies);
  - b. potential for synergy savings based on alternatives that address multiple needs;
  - c. implementation issues; and
  - d. customer responsiveness and ability to potentially modify usage at certain times and seasons.

F. Reliability

- i. Reliability will be assessed by the following solutions:
  - a. ability to meet the identified system needs;
  - b. review of anticipated reliability as compared to alternatives;
  - c. operational complexity and flexibility; and
  - d. resiliency of the system.

G. Environmental Responsibility:

- i. Environmental responsibility will be assessed by the manner in which the solution advances the goals and objectives of the State Energy Plan and other environmental policies. Considerations of environmental responsibility may include impacts on greenhouse gas emissions, criteria air pollution, land use, water, and other resources.

H. Cost-Effectiveness

- i. Cost-effectiveness will be assessed by a comparison of costs and benefits as described in Section 2.3.F.

2.3. **Assessment of Applicability of NWA's (SRP Planning)**

- A. Identified electric distribution system needs that meet the following criteria will be evaluated for potential NWAs that could reduce, avoid, or defer a transmission and distribution (T&D) wires solution over an identified time period.
- i. The need is not based on asset condition.
  - ii. The wires solution, based on engineering judgment, will likely cost more than approximately \$1 million; the cost floors may vary across different project types and time frames.
  - iii. If load reductions are necessary, then they are expected to be less than twenty (20) percent of the relevant peak load in the area, or sub-area in the event of a partial solution, of the defined need.
  - iv. The start of wires alternative construction is at least thirty (30) months in the future.
  - v. At its discretion, the distribution company may consider and, if appropriate, propose a project that does not pass one or more of these criteria if it has reason to believe that a viable NWA solution exists, assuming the benefits of doing so justify the costs.
- B. If the distribution company determines that an NWA cannot defer the entire T&D project, the distribution company is encouraged to examine the application of NWAs to avoid or defer part of the overall scope of the project. This shall be referred to as ‘partial’ or ‘hybrid’ NWA. The distribution company will review reduction of the discrete portions of the entire T&D plan. Examples include: 1) reducing two new feeders to one new feeder; and 2) reducing a new proposed fully build station (2 power transformers, 8 feeders) to a partial station (1 power transformer, 4 new feeders).<sup>7</sup>
- C. To further incorporate NWAs into the distribution company’s distribution planning process, the distribution company may investigate the application of NWAs 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. It is understood that an economic analysis framework for this type of NWA would need to be developed. With wider penetration, load-reduction NWAs are expected to generally defer or reduce infrastructure investment in a similar manner to EE efforts.
- D. A more detailed version of these criteria may be developed by the distribution company and shared with the Council and other stakeholders.
- E. Feasible NWAs will be compared to traditional solutions based on reliability, prudence, environmental responsibility, and the comparison of costs and benefits as defined below<sup>8</sup>.
- F. Comparison of Benefits and Costs

<sup>7</sup> It is understood that reduction in the size of equipment (wire, transformers, etc.) offers little to no cost reduction to enable an economic NWA due to the discrete sizing of these components, and the distribution company is not expected to pursue such analysis.

<sup>8</sup> It is recognized that individual attributes can be compared to each other, but the ability to compare all the attributes together may not be able to be done at this time and may be the subject of other proceedings.

- i. The analysis of costs and benefits for each solution shall include a full assessment of costs and benefits of the various technologies; measures; and/or strategies included in the NWA as guided, where applicable, by the cost-effectiveness test outlined in Section 1 of these Standards. The following financial analysis should be conducted for each solution where an NWA is a viable option:
  - a. a calculation of the net-present-value benefit of deferring the traditional alternative over a set time period or eliminating the traditional alternative entirely as applicable;
  - b. a calculation of the net-present-value cost of the NWA over the same time period as the net-present-value calculation in (a);
  - c. a cost-benefit analysis, which shall consist of a comparison of (a.) and (b.) plus any other estimated benefits,
    - (1) other estimated benefits<sup>9</sup> shall include, but are not limited to: avoided capacity costs; avoided energy costs; avoided transmission costs; avoided ancillary service costs; market price suppression effect; improved reliability; revenues from grid resources; avoided greenhouse gas emissions; other environmental externalities; avoided environmental compliance costs; economic development benefits; and any site-specific, or option-specific benefits or costs directly attributable to the location of the project or the proposed alternatives, provided, however, that these benefits have not already been counted in the justification of any other underlying program (e.g. the Energy Efficiency Procurement Plan, the Renewable Energy Growth Program, the Net Metering Program, the Long-Term Contracting for Renewable Energy Standard, etc.) to avoid double-counting of benefits;
    - (2) recognizing that quantification methods for some benefits are not yet defined, and may need further research, where benefits cannot be reasonably quantified, a qualitative impact analysis or description of potential benefits should be included.
- ii. Where there is no wires solution yet identified consistent with Section 2.3.C, a traditional benefit/cost analysis (consistent with this section) for the NWA should be done, and if it is greater than 1.0, the NWA can be recommended for approval.

#### **2.4. Three-Year System Reliability Procurement Plan**

- A. 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

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<sup>9</sup>It is expected that site-specific avoided distribution costs and reduced operations and maintenance costs would be captured in the calculation of the net present value benefit of deferring or avoiding the traditional alternative.

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>10</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.

## 2.5. **Annual System Reliability Procurement Report**

- A. The distribution company shall prepare and file a supplemental filing on November 1, 2017, and annually thereafter on November 1, containing details of implementation of the SRP Plan for the next program year (SRP Report). Such reports will include, but are not limited to:
  - i. identification and NWA-viability determination of needs that passed the initial screening in Section 2.3;
  - ii. identification of needs where an NWA project was selected as a solution including:
    - a. a summary of the comparative analysis following the criteria outlined in Section 2.3 above, and
    - b. characterization of the transmission or distribution need including:
      - (1) the magnitude (daily and annual load shape curves, voltage improvement, etc.); if applicable, the projected year and season by which a solution is needed; and other relevant timing issues;
      - (2) description of the traditional wires solution and how it is impacted by the NWA<sup>11</sup>;

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<sup>10</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.

<sup>11</sup> Description should include technology proposed, net present value, costs (capital and O&M), revenue requirements, and timeline for the upgrade

- (3) description of the sensitivity of the need and T&D investment to load forecast assumptions;
- iii. description of how the NWA projects complement the objectives of Rhode Island's energy efficiency, renewable energy, and clean energy programs listed in 2.1.C;
- iv. implementation plans for the newly selected NWA projects and any previously approved projects being proposed for continuation, which should include:
  - a. a description of the NWA solution, including technology; customer engagement; cost (capital and operations and maintenance), net present value, and timing,
  - b. the ability of affected customers to participate in the proposed project,
  - c. a description and results of any competitive bid (request for proposals) processes that were conducted to inform the description in 2.5.A.iv.a,
  - d. the proposed NWA investment scenario(s),
  - e. the proposed technology ownership and contracting considerations or options,
  - f. the proposed evaluation plans;
- v. funding plans for the selected NWA projects and any previously approved projects being proposed for continuation; the distribution company may propose to utilize funding from the following sources for system reliability investments:
  - a. 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,
  - b. existing distribution company EE investments, as required in Chapter 1 of these Standards, and the resulting Annual Plans,
  - c. 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,
  - d. utility operating expenses, to the extent that recovery of such funding is explicitly allowed,
  - e. 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,
  - f. any other funding sources that might be required and available to complete the NWA;
- vi. status of any previously selected and approved projects and pilots;

- vii. identification of any methodological or analytical tools to be developed in the year;
  - viii. total SRP Plan budget, including administrative and evaluation costs;
  - ix. proposed shareholder incentive.
- B. To the extent the implementation of a NWA may contribute to an outage event that is beyond the control of the distribution company, the distribution company may apply to the PUC for an exclusion of such event in the determination of Service Quality performance.

**2.6. SRP Performance Incentive Plan**

- A. The distribution company shall have an opportunity to earn a shareholder incentive that is dependent on its performance in implementing the approved SRP Plan.
- B. The distribution company, in consultation with the Council, will propose in its SRP Plan a PI proposal that is designed to promote superior distribution company performance in cost-effectively and efficiently delivering least cost and reliable non-wires alternatives projects.
- C. The PI should be structured to reward program performance that makes significant progress in securing least cost and reliable non-wires alternatives projects while, at the same time, ensuring that those resources are secured as efficiently as possible.
- D. The PI may provide incentives for other objectives that are consistent with the goals, including, but not limited to, resiliency; connectivity; and operability.
- E. The PI should be sufficient to provide a high level of motivation for excellent distribution company performance annually and over the three-year period of the SRP Plan, but structured so that customers receive most of the benefit from SRP implementation.
- F. The PI shall state clearly each specific objective it is designed to direct the distribution company to achieve and the reason it is needed to do so. The design of the PI shall be clear and focused, have clear metrics for determining performance, not duplicate incentives, and not provide multiple or different incentives for attaining the same objective.