

System Reliability Procurement (SRP) Investment Proposal for Electric Demand Response 2024-2026

INITIAL VERSION FOR COMMENT

For discussion and review by the Rhode
Island Division of Public Utilities and
Carriers and the Rhode Island Energy
Efficiency and Resource Management
Council

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Rhode Island Energy™

a PPL company

System Reliability Procurement Investment Proposal for Electric Demand Response 2024-2026

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Pre-Filed Testimony

[Forthcoming at time of filing]

System Reliability Procurement Investment Proposal for Electric Demand Response 2024-2026

Section 1. Introduction

In accordance with Least-Cost Procurement Statute and Least-Cost Procurement Standards, Rhode Island Energy respectfully files this proposal for continuation of its electric demand response program, branded ConnectedSolutions, during 2024-2026. Herein, the Company describes electric demand response within the stepwise system reliability procurement process, discusses the objectives that underpin the design of ConnectedSolutions, proposes and motivates some program design modifications, sets annual peak reduction targets and associated budget, and requests approval for cost recovery of the budget via the System Reliability Procurement Factor (SRP Factor) added to the Energy Efficiency System Benefit Charge (EE Charge).

Timeline for Development and Review

September 6	Preliminary draft SRP Investment Proposal circulated for external review and feedback
September 20	Opportunity for discussion of SRP Investment Proposal at the SRP Technical Working Group meeting
September 21	Revised draft SRP Investment Proposal included in final draft of <i>2024-2026 SRP Three-Year Plan</i> ; opportunity for discussion at the EERMC meeting on September 28
October 18	Opportunity for discussion of SRP Investment Proposal at the SRP Technical Working Group meeting
November ~1	SRP Investment Proposal submitted to DPUC and EERMC for review per LCP Standards 6.3.G
November 15	Opportunity for discussion at the SRP Technical Working Group meeting
November 16	Discussion and possible action at the EERMC meeting
November <21	SRP Investment Proposal included as Appendix to <i>2024-2026 SRP Three-Year Plan</i> filed with the Commission
December ~15	SRP Investment Proposal filed for regulatory review and approval alongside, but separate from, the <i>FY25 Electric ISR Plan</i>
December 21	Possible discussion, possible action at the EERMC meeting

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Section 2. Electric System Needs and Optimization

Reducing Supply Costs through Electric Demand Response

System Need or Optimization

Electricity supply costs are partially driven by the high cost of electricity during the few hours of the year when we use the most electricity. During these “peak periods,” the most expensive generators are needed to supply enough electricity to meet demand, and their cost is factored into the supply rates customers incur.

Although Rhode Island Energy is an electricity delivery company (akin to FedEx or UPS for delivering packages), we are obliged to help customers who choose not to buy supply from a third-party supplier by buying electricity in bulk via supply contracts chosen in auctions and through the wholesale market. Rhode Island Energy cares about helping customers access the most affordable electricity and, as such, has identified an opportunity to reduce supply costs by incentivizing demand reductions during peak periods. Reducing peak supply needed also has the corollary benefits of avoiding further investments in the electric system infrastructure.

System Reliability Procurement – Electric System Screening Criteria

This optimization meets all four electric system screening criteria and is, therefore, an opportunity for system reliability procurement:

1. The optimization is not related to an asset condition issue;
2. The optimization is eligible because the optimization requires load relief;
3. The opportunity for system reliability procurement is likely to garner sufficient market interest; and
4. There is adequate time to implement a system reliability procurement solution.

Best Alternative Utility Reliability Procurement Solution

Demand response proposed for this system need is specifically to reduce system-level peak demand. There is no best alternative utility reliability procurement solution at this time.^{1,2}

¹ Rhode Island General Laws 39-1-27.7.b(1)(iii) establishes “demand response, including, but not limited to, distributed generation, back-up generation, and on-demand usage reduction, that 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” as an eligible activity within system reliability procurement.

² The current demand response program is not capable of managing loads in response to circuit peaks because the current demand response program does not have the necessary inputs, including localized data, to sufficiently manage the distribution system with the existing software/systems. Rhode Island Energy’s Grid Modernization Plan analysis identified a need to dispatch demand response resources with an understanding of both localized resource characteristics and system topology. The current system is incapable of doing this for two reasons. First, the current electric system does not have the requisite equipment (sensors, meters, etc.) to provide the data required to understand system topology. Second, the current demand response management system does not have the functionality to pair these two attributes (resource characteristics and system topology). The proposed grid

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Solicit and Evaluate System Reliability Procurement Proposals

This system reliability procurement opportunity has been addressed since 2019 through the Company’s demand response program, branded ConnectedSolutions.³ As of September 2023, approximately 8,000 customers are participating in ConnectedSolutions through their connected thermostats, battery energy storage systems, and production process curtailments. In aggregate, the participation of these customers has led to a meaningful reduction in peak load resulting in \$74 million in costs avoided for our customers. To leverage the value of program continuity, Rhode Island Energy proposes to maintain ConnectedSolutions through 2026.⁴

To administer ConnectedSolutions, Rhode Island Energy partners with a number of curtailment service providers, contracts with a residential demand response vendor, and collaborates with major distribution utilities throughout the region to coordinate demand response events. Rhode Island Energy will continue to coordinate with and grow this ecosystem of third-parties, participants, and partner utilities to increase collective demand reduction and resulting benefits. In the last quarter of 2023, Rhode Island Energy will solicit proposals for a third-party vendor to work with us to achieve a certain level of peak reduction annually for the 2024-2026 period.

Request Regulatory Approval

Rhode Island Energy will request regulatory approval for ConnectedSolutions via a *System Reliability Procurement (“SRP”) Investment Proposal* to be filed in December alongside, but separately from, the *Electric Infrastructure, Safety, and Reliability (“ISR”) Plan*.⁵ As such, this *SRP Investment Proposal* includes program design specifications, budget, and anticipated participation and impacts.

modernization investments include the requisite equipment to provide the data required to understand the system topology and associated limitations on a granular basis. This understanding will provide incremental benefits, such as having the ability to provide localized solutions to address system needs, which will increase the impact of the existing demand response programs. Rhode Island Energy recognizes circuit-focused peak load management is an important functionality for achieving the State’s climate and clean energy mandates safely, reliably, and affordably. Rhode Island Energy notes that its proposed grid modernization, our demand response program can be improved to (1) be tied not only to peak load reduction, but also to peak generation management; (2) be tied to distribution system constraints for better infrastructure avoidance; and (3) be integrated and scaled to levels commensurate with State policy drivers. Furthermore, Rhode Island Energy’s proposed advanced metering functionality will (i) provide more granular and timely meter data; (ii) improve the Company’s ability to dispatch resources; and (iii) allow for more accurate measurement and evaluation of performance. The granular data provided by these investments would be used with the grid modernization investments to provide system-wide real time visibility.

³ ConnectedSolutions had previously been housed within filings related to energy efficiency (e.g., *2021-2023 Energy Efficiency Three-Year Plan*, *2023 Energy Efficiency Annual Plan*). Beginning in 2024, Rhode Island Energy will include ConnectedSolutions within filings related to system reliability procurement instead.

⁴ Although this *SRP Investment Proposal* covers 2024-2026, Rhode Island Energy envisions the continuation of an electric demand response program past 2026, subject to future design modification and appropriate regulatory review.

⁵ As is recommended by the Least-Cost Procurement Standards (2023 version) Section 5.5.A.

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Implement Solution

Pending regulatory approval, Rhode Island Energy will reopen ConnectedSolutions for the 2024 peak demand season, beginning in Spring 2024. Rhode Island Energy will report the resulting impacts in its *SRP Annual Report*.

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Section 3. Motivation, Objectives, and Program Design Principles

Electricity supply costs differ in the summer and the winter, driven by economics of generation plants needed to serve the amount of electricity consumed by customers (called ‘load’) and the fuel costs for those generation plants. On hot, humid summer weekday afternoons and evenings, customers typically demand the most electricity, and this ‘peak demand’ requires the less and less economically efficient generators to produce electricity to serve the load. These ‘peaker plants’ are the most expensive generators and drive-up summer electricity supply costs.⁶

Rhode Island Energy proposes to offer a ‘demand response’ program to incentivize participating customers to shift a portion of peak electricity demand to off-peak hours in 2024-2026. This shift (referred to technically as ‘reducing regional coincident peak demand’) should reduce peak electricity supply costs and, therefore, put downward pressure on wholesale electricity supply prices which may translate to lower supply rates.

The objective of Rhode Island Energy’s demand response program, branded ConnectedSolutions, is to reduce regional coincident peak demand.

In offering ConnectedSolutions, the Company asserts the following program design principles, explained further below:

1. Be agnostic toward technology and participants
2. Encourage diffuse and diverse participation for reliable response
3. Right-size incentives
4. Comply with Least-Cost Procurement Standards
5. Reduce and mitigate distribution system issues
6. Facilitate easy participation
7. Share value created

Stemming from the program objective to reduce regional coincident peak demand, Rhode Island Energy does not differentiate a kilowatt reduced by one technology or participant from a kilowatt reduced by another technology or participant. Each of those kilowatts reduced has the same value for putting downward pressure on electricity costs. In this manner, ConnectedSolutions is technology and participant agnostic.

This principle is most clearly displayed in commercial and industrial participation in ConnectedSolutions, where participants can use any technology, process, or other innovation to reduce peak demand. For residential and small business participants, technology is limited by practical considerations for implementation (i.e., a subset of thermostat and battery manufacturers and models). Rhode Island Energy seeks to expand eligible technologies in 2024-2026 to include electric vehicles that can automatically curtail charging during peak events.

⁶ Electricity supply costs reflect three components: energy, capacity, and ancillary. Reducing peak demand puts downward pressure on energy and capacity supply cost components, which benefits all customers.

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ConnectedSolutions is a voluntary program; not all participants reduce demand when called on, nor are they required to. Rhode Island Energy seeks to build a demand response program with a relatively certain level of response from its participants. This leads to favoring program design that encourages diffuse participation (i.e., no one participant's level of response substantially sways the overall peak demand reduction achieved by the program) and diverse participation (i.e., no one technology type exerts a disproportionate influence on the overall peak demand reduction achieved by the program). This principle is intended to be complementary – not contradictory – to the principle of being technology and participant agnostic. All else equal, more participants and more technologies will result in a more reliable and consistent level of response. Rhode Island Energy seeks to encourage more participants over fewer, with more technology types than fewer, within its program design for ConnectedSolutions.

While each kilowatt of peak demand reduction is considered to be equal, achieving each kilowatt of peak demand reduction may require different levels of action or opportunity cost on the part of the participant. For example, an automatic setback to a participant's thermostat requires no action, while a request for participants to reduce their thermostats manually requires some action. Another example: having a thermostat that is controllable is a relatively small upfront cost and workload when compared to the upfront costs and work entailed to install a battery energy storage system. A third example for good measure: the opportunity cost of setting back a thermostat (potential temporary discomfort) is small relative to the opportunity cost of skipping a production sequence (definite unrecoverable lost revenue). Rhode Island Energy's third program design principle posits that incentives should be right-sized to spur action; because different methods of reducing peak load require different burdens, it makes sense to differentiate incentive levels. Doing so will minimize program costs while achieving the same peak demand reduction.

Demand response activities are contemplated within the Least-Cost Procurement Statute, and further stipulated in the Least-Cost Procurement Standards. Accordingly, demand response must be reliable, prudent, cost-effective, and environmentally responsible. These Standards constitute guardrails on program design. One example of application of these guardrails is with limitations on eligible technologies incentivized for reducing peak demand. Switching from electricity to emissions-intensive fossil-fuel generators to reduce peak demand is inconsistent with the Standard of environmental responsibility; therefore, emissions-intensive fossil-fuel generation is ineligible to receive incentives from ConnectedSolutions.

An eligible alternative to fossil-fuel generation is battery energy storage, which can power a home or business during a peak period and/or export electricity to the electric distribution system for other customers to use. However, large levels or concentrated electricity export may have unintended adverse impacts to the electric distribution system, especially as battery energy storage becomes more common. Rhode Island Energy seeks to maintain the benefits of peak demand reduction through program design that encourages on-site consumption of stored

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electricity and discourages large levels of unconstrained exported electricity on feeders with relatively low capacity to handle that export.⁷

Of course, customers only receive benefits of ConnectedSolutions if there are participants, so Rhode Island Energy is proposing to clarify how customers in different rate classes can participate in 2024-2026. The intent is to clarify how and when participants may stack incentive payments.

Finally, Rhode Island Energy is creating value by offering ConnectedSolutions; indeed, creating value is a cornerstone of program design. Rhode Island Energy is careful to procure peak demand reduction through ConnectedSolutions such that customers benefit through reduced utility bills *regardless of their participation in the program*. Of course, customers who participate will also receive great value through both reduced bills and incentive payments. In considering tangible monetary value – customers keep money in their wallets because electricity bills are less expensive because of ConnectedSolutions – Rhode Island Energy seeks to share this quantifiable monetary value between customers and its shareholders such that *all* parties are better off with ConnectedSolutions than without.

⁷ Although interconnection system impact studies do examine the stated charge/discharge patterns of battery energy storage systems, including reducing or mitigating system issues as a program design principle is a necessary and beneficial backstop to ensure demand reduction benefits. In this manner, consistency in considering distribution system issues in demand response program design carries over to system impact studies to ensure full flexibility in program participation without adverse system risks.

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Section 4. Program Design for 2024-2026

This section describes major program design elements of ConnectedSolutions and highlights proposed program design modifications for 2024-2026. This section is not intended to be comprehensive of all program design detail; such detail is developed and made available in advance of each peak demand season, annually.

Administration

Rhode Island Energy's Role:

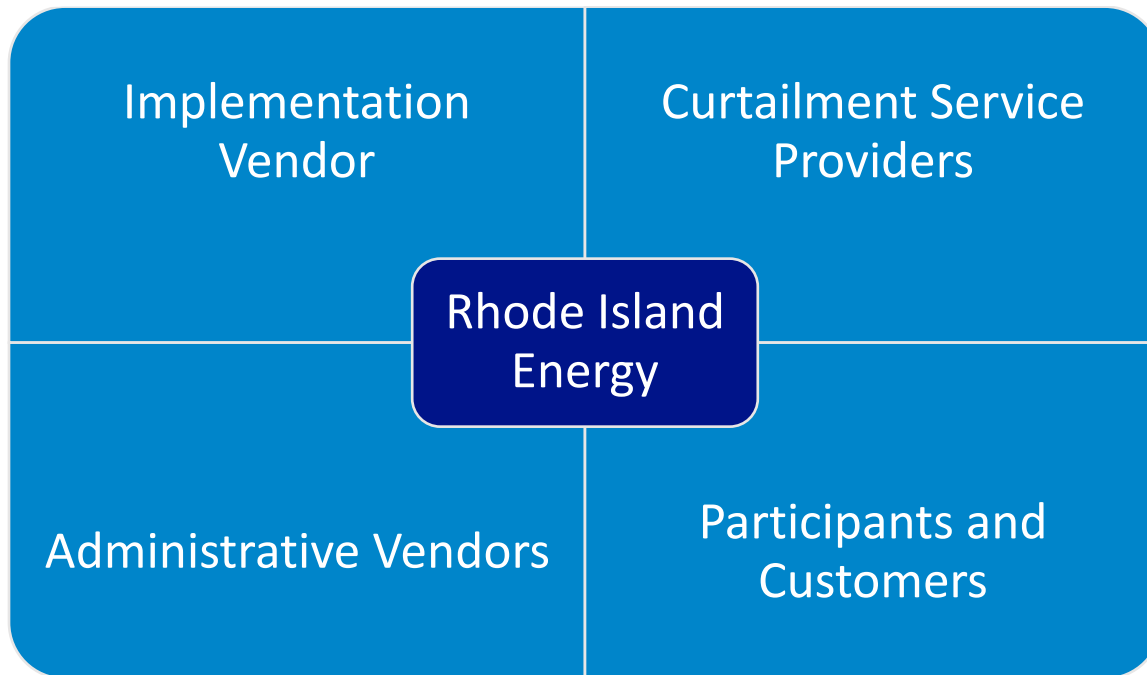
Rhode Island Energy serves as the Program Administrator, providing strategic direction and management of ConnectedSolutions. Rhode Island Energy's role manifests through program design, implementation, and evaluation. Rhode Island Energy is uniquely suited for this role because of its expertise in wholesale energy and capacity markets, knowledge of its electric distribution system to mitigate risks through program design, everyday relationship with its customers to promote program participation, relationships that enable coordination with other electric distribution companies regionally, and ability to coordinate demand response with all other business activities.

Implementation Vendor:

Rhode Island Energy contracts with a third-party solution provider that offers software-as-a-service to implement day-to-day program operations. This implementation vendor is responsible for managing relationships and contracts with technology providers, in order to enable those technologies to participate in ConnectedSolutions (or, more precisely, to enable customers who have those particular technology types and models to enroll and participate). The implementation vendor also assists with data collection, participant enrollment, program impact evaluation, participant satisfaction, troubleshooting, incentive payouts, and ancillary technical assistance. Contracting with a vendor for these roles allows Rhode Island Energy and its customers to benefit from the innovation and price competition within the competitive market for demand response implementation.

Prior to peak season in 2024, Rhode Island Energy will conduct a competitive solicitation for an implementation vendor, in accordance with the system reliability procurement process described in the *2024-2026 SRP Three-Year Plan*. The final contract and scope of work contingent on regulatory ruling.

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Curtailment Service Providers:

Rhode Island Energy and its implementation vendor work with a network of curtailment service providers. These curtailment service providers manage relationships with commercial and industrial customers under their own, independent contracts for value-sharing to which Rhode Island Energy is not party. However, curtailment service providers are essential to the ecosystem of ConnectedSolutions so that they align their support for commercial and industrial customers with Rhode Island Energy's calls for peak demand reduction.

Administrative Vendors:

Rhode Island Energy contracts with additional vendors to support administrative functions, including but not limited to, administering financing interest buy-down incentives.

Participants and Customers:

Rhode Island Energy designs ConnectedSolutions such that all customers benefit regardless of participation; however, these benefits only materialize if a subset of customers participate in the program. A participant not only receives the value that accrues to all customers regardless of participation, but also receives an incentive payment for their performance.

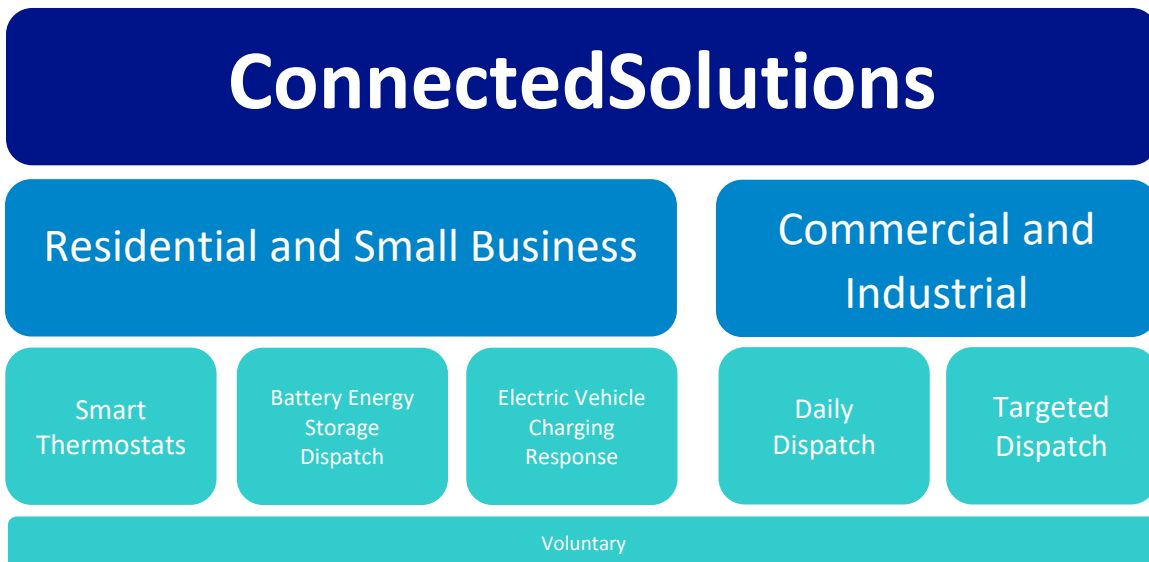
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ConnectedSolutions

The program structure of ConnectedSolutions is illustrated in Figure X, below.

ConnectedSolutions as a whole is referred to as a ‘program.’ ConnectedSolutions has two ‘tracks’ through which customers may participate: *Residential and Small Business ConnectedSolutions* and *Commercial and Industrial Connected Solutions*. Each of these tracks contains multiple ‘pathways’ for participations. Residential and Small Business ConnectedSolutions participants can participate via the *Smart Thermostat* pathway, the *Battery Energy Storage Dispatch* pathway, and/or the *Electric Vehicle Charging Response* pathway. Commercial and Industrial ConnectedSolutions participants can participate in the *Daily Dispatch* pathway and/or the *Targeted Dispatch* pathway. All customers – residential, small business, commercial, and industrial customers – can participate in the *Voluntary* pathway.

Figure 1. ConnectedSolutions program structure



Notes: ConnectedSolutions is a ‘program’ (shown in navy) with two ‘tracks,’ the Residential and Small Business track and the Commercial and Industrial track (shown in blue). Each track has a number of ‘pathways’ through which to participate (shown in teal).

The incentive levels proposed for each pathway in each track are proposed to be consistent during the 2024-2026 timeframe. This ‘multiyear incentive rate’ is intended to provide some degree of certainty about expected revenues for projects in order to support project financing for customers. Rhode Island Energy proposes to reevaluate incentive levels in development of its next three-year investment proposal spanning 2027-2029. Participants that enroll during the 2024-2026 peak seasons are valid during 2024-2026; incentives for those participants who continue to participate in 2027-2029 will be set at the prevailing approved incentive levels for 2027-2029.

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In prior years of ConnectedSolutions, the Company had proposed a ‘five-year rate lock,’ whereby the Company’s intention was to provide the same incentive levels as the first year of a participant’s enrollment for the first five consecutive seasons of participation. This five-year rate lock is and was always subject to approval of annual budgets. Rhode Island Energy proposes to honor the five-year rate lock for existing participants who first enrolled during program years 2020-2023 and who have participated in each peak season since. Additional details are included in the proposed designs of each pathway, below.

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Residential and Small Business Connected Solutions

To participate in Residential and Small Business Connected Solutions, customers must be in rate classes A-16, A-60, or C-06; customers in other rates classes are ineligible to participate in Residential and Small Business Connected Solutions. Residential and Small Business Connected Solutions participants may stack incentives through setting back thermostats, discharging battery energy storage systems, curtailing electric vehicle charging, or voluntarily pre-loading or deferring electricity consumption. Incentive structures, levels, and eligibility requirements are discussed further below.

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Smart Thermostats

Residential and small business customers may enroll eligible smart thermostats in ConnectedSolutions. During peak periods, smart thermostats will automatically increase target cooling levels, thereby reducing demand of central air conditioning units. Eligibility is defined by thermostat manufacturers and model, as determined by the implementation vendor.

Incentive structure and amount:

Eligible participants receive a one-time enrollment incentive of \$50 per enrolled device followed by an annual participation incentive of \$20 per device per year, to be rendered at the end of the peak season for all participants.

Proposed Changes for Smart Thermostats

Rhode Island Energy proposes to increase the upfront enrollment incentive from \$25 to \$50 to encourage higher participation rates.

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Battery Energy Storage Dispatch

During peak periods, battery energy storage systems discharge electricity to serve on-site load and export electricity to the electric distribution system for neighboring customers to use, thereby reducing peak demand.

Eligibility

Batteries that participate must be from eligible manufacturers (as specified in program documentation). Incentive payments will be capped at \$6,875 per year, which represents an incentive for a battery that reduces regional coincident peak load by 25 kW per peak event on average.

Incentive structure and amount:

Eligible participants receive an annual performance incentive of \$275 per average peak kilowatt reduced per peak event per year, to be rendered at the end of the peak season for all participants. Some eligible participants may additionally opt to leverage the HEAT Loan to support financing their battery energy storage systems. The HEAT Loan provides low-interest rate financing, with zero-percent interest financing available to some customers based on income eligibility.

Incentive payout schedule

Table X, below, shows the eligible incentive rate for battery energy storage dispatch based on year of peak season program participation. This table includes the proposed honoring of the five-year rate lock and the proposed multiyear incentive rate. To qualify for the \$400 incentive rate, participant(s) must enroll with a newly installed battery on or before February 1, 2024. All incentive levels are subject to regulatory review and approval.

Proposed Changes for Batteries

In accordance with the program design principle to right-size incentive levels, Rhode Island Energy is proposing to change the amount of the performance incentive. Under prior program design, participants received \$400 per average kilowatt reduced per peak event per year. The new incentive will allow participants to receive \$275 per average kilowatt reduced per peak event per year.

Recent changes to incentive levels in neighboring states suggest that participants are potentially willing to reduce peak demand for less incentive. Furthermore, Rhode Island's Renewable Energy Fund offers a purchase incentive for residential solar that is paired with energy storage (<https://commercieri.com/financing/renewable-energy-fund/>).

Therefore, Rhode Island Energy seeks to reduce the performance incentive to better align with revealed participant willingness to accept and account for external purchase incentives. Modifying the performance incentive has the additional benefit of allowing more participants for the same program cost, which advances the program design principle to encourage diffuse and diverse participation for reliable response.

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Table 1. Battery energy storage dispatch incentive schedule

Customer enrolled with a newly installed battery and begun peak season participation....	2020	2021	2022	2023	2024	2025	2026	2027
2019	\$400	\$400	\$400	\$400	\$275	\$275	\$275	TBD
2020	\$400	\$400	\$400	\$400	\$400	\$275	\$275	TBD
2021	-	\$400	\$400	\$400	\$400	\$400	\$275	TBD
2022	-	-	\$400	\$400	\$400	\$400	\$400	TBD
2023	-	-	-	\$400	\$400	\$400	\$400	TBD
2024	-	-	-	-	\$400	\$400	\$400	TBD
2024 (Participants enrolled on or after February 2, 2024)					\$275	\$275	\$275	TBD

Notes: Each row represents the peak season in which a customer first enrolled with a newly installed battery and began peak season participation. Each column represents the year of the peak season. The contents of the cells indicate the eligible incentive level in dollars per average kW reduced per peak event across that year's season. For example, a customer who enrolled with a newly installed battery and begun peak season participation in 2019 had been eligible to receive \$400/kW for average kW reduced in years 2020 through 2023, and \$275/kW in years 2024-2026. Note that for all customers, incentives are only proposed through 2026; incentives in 2027 and beyond are yet to be determined. All incentives are subject to regulatory review and oversight.

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Electric Vehicle Charging Response

New for 2024-2025, Rhode Island Energy proposes to incentivize participants who drive electric vehicles to curtail charging during peak demand periods.

Incentive structure and amount:

Eligible participants receive a one-time enrollment incentive of \$50 per enrolled vehicle followed by an annual participation incentive of \$20, to be rendered at the end of the peak season for all participants.

Notes about program design:

Rhode Island Energy may propose an off-peak charging rebate program for future years. The electric vehicle charging response option through ConnectedSolutions is distinct and separate from a potential off-peak charging rebate program in the following ways:

- The off-peak charging rebate program structures its incentive as a dollar value per *kilowatt-hour* reduced *cumulatively* during peak periods; the incentive for electric vehicle charging response through ConnectedSolutions is structured as a dollar value per *participation*.
- The off-peak charging rebate program requires an action by the participant to participate in each peak period; the electric vehicle charging curtailment option through ConnectedSolutions does not require any action by the participant to participate.
- Customers may only participate in one program or the other; customers may not participate in *both* off-peak charging rebate *and* electric vehicle charging response through ConnectedSolutions.

By offering both the off-peak charging rebate program and the electric vehicle charging curtailment option through ConnectedSolutions, Rhode Island Energy seeks to learn about the differential impacts and customer acceptance of these programs to reduce peak demand. Such learnings may inform future program and rate designs.

New Program!

This is a new program that has not been available to customers in prior years.

Prominent market signals include state incentives for electric vehicles through its DRIVE program, federal tax incentives for electric vehicles through the Inflation Reduction Act, and federal support for electric vehicle charging infrastructure through National Electric Vehicle Infrastructure (NEVI) funding. These market signals are consistent with state policy that encourages electric vehicles (e.g., the 2022 Update to the 2016 Greenhouse Gas Emissions Reduction Plan, Advanced Clean Cars II Standards that phase out sales of new internal combustion engine vehicles).

Rhode Island Energy seeks to encourage off-peak charging behavior as Rhode Islanders transition to electric vehicles.

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Voluntary

Rhode Island Energy proposes a new communications strategy to encourage voluntary peak reduction through any means or technology by any customer in response to peak events.

Incentive structure and amount:

Voluntary demand response will not provide any direct monetary incentive to participants for peak demand reduction, although all customers will benefit through downward pressure on electricity costs.

Notes about program design:

Rhode Island Energy will communicate about voluntary calls for demand response using its social media channels and via a banner on its webpage. Rhode Island Energy anticipates posting 2-3 calls for voluntary demand response during the peakiest peaks each year. Rhode Island Energy recognizes the power of its communication channels; calling events too frequently or through unwanted channels may threaten participation and effective communications during rare times of emergency. Therefore, Rhode Island Energy will never call more than three voluntary demand response events in a given year, and will not request voluntary demand response via email, call, or text.

New Program!

Rhode Island Energy recognizes the power of crowd sourcing and proposes to use its growing digital presence to encourage peak demand reduction.

Rhode Island Energy does not propose to claim any savings from its voluntary efforts during 2024-2026 for the purposes of shareholder incentives; 100% of the value will go to customers. Rhode Island Energy will use this period to assess the efficacy of calls to action and may propose alternative designs in future years.

Last, Rhode Island Energy recognizes the advocacy groups that have paved the way for voluntary calls for demand response in previous years – thank you for helping us see the value! We hope to work together to amplify our messages in the future.

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Commercial and Industrial Connected Solutions

To participate in Commercial and Industrial Connected Solutions, customers must be in rate classes G-02 or G-32; customers in other rate classes are ineligible to participate in Commercial and Industrial Connected Solutions. Commercial and Industrial Connected Solutions participants may participate in either Daily Dispatch, Targeted Dispatch, or both (referred to as “dual enrollment”).

Both Daily Dispatch and Targeted Dispatch are technology agnostic. These programs offer flexible avenues of participation that accommodate more complex technologies (e.g., building automation systems, complex lighting controls, etc.) and processes (e.g., deferring production). Furthermore, peak demand reduction achieved through battery energy storage dispatch and electric vehicle charging response are eligible pathways to receive incentives.

All peak demand reduction must be environmentally responsible, per Least-Cost Procurement statute and standards. Therefore, fossil-fueled backup generators are only eligible to count toward performance if their emissions rate is less than the marginal peak emissions rate in the regional market.⁸ Additional guidance and requirements on eligible technologies and fuels will be provided in program documentation prior to each season.

Participants may earn incentives based on actual performance, up to \$1 million per participant per year. Incentive structures, levels, and eligibility requirements are discussed further below.

Proposed Changes

Rhode Island Energy recognizes the growing interest in battery energy storage for commercial and industrial customers. By combining battery energy storage as an eligible peak reduction pathway in Daily Dispatch and Targeted Dispatch, Rhode Island Energy intends for program participation to be streamlined and compensated according to desired participation level.

Rhode Island Energy also seeks to clarify the potential role (or ineligibility) of backup generators and combined heat and power systems in 2024-2026.

Last, Rhode Island Energy hopes to encourage diffuse participation and support equitable planning by imposing a cap on the total annual incentive that may potentially be earned by any single participant.

⁸ i.e., 2021 ISO New England Electric Generator Air Emissions Report

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Daily Dispatch

Commercial and industrial customers may enroll in ConnectedSolutions Daily Dispatch. Daily Dispatch incentivizes customers on a pay-for-performance basis to curtail their electricity demand during the one peak grid load hour of the year, as well as other high and medium peak days in June through September, for a total of no more than 60 events.

Incentive structure and amount:

Customers earn a performance incentive of \$275 per kilowatt reduced on average during peak events.

Multi-Year Incentive Rate for Daily Dispatch

Table 2, below, demonstrates the annual eligible incentive rate for customers depending on year of first enrollment and participation. Note that Rhode Island Energy plans to honor the five-year rate lock for Daily Dispatch customers who enrolled battery assets during or prior to the 2023 season through 2026. Also, please note that the prior five-year incentive lock represents Rhode Island Energy's intentions; it is not a guarantee of incentive levels. Annual incentive levels are subject to change depending on statutory and regulatory orders.

2-Year Incentive Lock Commitment Letter

For new battery storage systems larger than 50 kW-AC that do not yet have authority to interconnect, the customer or their vendor can choose to request a 2-year incentive lock Commitment Letter from Rhode Island Energy once an interconnection application has been accepted as complete.

The Commitment Letter will lock the incentive rate for the customer during the construction, installation, and interconnection of the battery system for up to a maximum of two years, through the 2026 peak season.

When the customer receives authority to interconnect and enrolls in Daily Dispatch, their incentive rate will be the amount committed to in the commitment letter, even if the incentive rate has decreased during the construction, installation, and interconnection period or two years, whichever is shorter. Rhode Island Energy will honor any rate lock

Proposed changes

Rhode Island Energy proposed changing the Daily Dispatch incentive level to match neighboring programs. Those neighboring programs demonstrate that the level of willingness to accept for program participation is lower, so reducing incentive levels serves to reduce total program costs for customers. In 2024-2026 specifically, incentives will be reduced from \$300 to \$275 per kilowatt reduced on average during peak events.

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commitments made to customers enrolled in the program with a Commitment Letter during or prior to the 2023 ConnectedSolutions' season.

Please note that the Commitment Letter and incentive lock represents Rhode Island Energy's intentions; it is not a guarantee of incentive levels. Annual incentive levels are subject to change depending on statutory and regulatory orders.

Table 2. Daily Dispatch incentive schedule

Customer enrolled and begun peak season participation....	2020	2021	2022	2023	2024	2025	2026	2027
2019	\$300	\$300	\$300	\$300	\$275	\$275	\$275	TBD
2020	\$300	\$300	\$300	\$300	\$300	\$275	\$275	TBD
2021	-	\$300	\$300	\$300	\$300	\$300	\$275	TBD
2022	-	-	\$300	\$300	\$300	\$300	\$300	TBD
2023	-	-	-	\$300	\$300	\$300	\$300	TBD
2024	-	-	-	-	\$300	\$300	\$300	TBD
2024 (Participants enrolled on or after February 2, 2024)					\$275	\$275	\$275	TBD

Notes: Each row represents the peak season in which a customer first enrolled and began peak season participation. Each column represents the year of the peak season. The contents of the cells indicate the eligible incentive level in dollars per average kW reduced per peak event across that year's season. For example, a customer who enrolled and begun peak season participation in 2019 had been eligible to receive \$300/kW for average kW reduced in years 2020 through 2023, and \$275/kW in years 2024-2026. Note that for all customers, incentives are only proposed through 2026; incentives in 2027 and beyond are yet to be determined. All incentives are subject to regulatory review and oversight.

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Targeted Dispatch

Commercial and industrial customers may enroll in ConnectedSolutions Targeted Dispatch. Targeted Dispatch incentivizes customers on a pay-for-performance basis to curtail their electricity demand during the one peak load hour of the year and other high peak days in June through September, for a total of no more than eight events.

Incentive structure and amount:

Customers earn a performance incentive of \$35 per kilowatt reduced on average during peak events.

Proposed changes

Rhode Island Energy proposed changing incentive level(s) to match neighboring programs. Those neighboring programs demonstrate that the level of willingness to accept for program participation is lower, so reducing incentive levels serves to reduce total program costs for customers. In 2024-2026 specifically, incentives will be reduced, for the Targeted Dispatch option, from \$40 to \$35 per kilowatt reduced on average during peak events.

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Section 4. Annual Participation, Peak Reduction, and Benefit-Cost Assessment

Rhode Island Energy offers the following ranges in program participation and peak load reduction in Table 3, below, and looks forward to further discussion with stakeholder to refine these values in advance of filing with the Rhode Island Public Utilities Commission in December 2023.

Table 3. Preliminary participation and peak load reduction

Residential and Small Business Track	Participants/Devices		
	2024	2025	2026
Smart Thermostats	12,000-14,000	14,000-17,000	17,000-21,000
Battery Dispatch	800-900	900-1100	1100-1300
Electric Vehicle Response	500-1000	1000-2000	2000-3000
Commercial and Industrial Track	Load Reduction (kW)		
	2024	2025	2026
Daily Dispatch	22,000-24,000	24,000-26,000	26,000-28,000
Targeted Dispatch	45,000-46,000	46,000-50,000	50,000-55,000

Notes: The table shows preliminary projections for participation in and peak load reduction resulting from ConnectedSolutions in 2024-2026. Figures to be refined prior to regulatory filing.

Rhode Island Energy estimates it can deliver this range of participation and associated load reduction for the potential budget in Table 4, below.

Table 4. Preliminary budget

Residential and Small Business Track	Budget		
	2024	2025	2026
	\$3.5-4.0M	\$4.0-4.5M	\$4.5-5.0M
Commercial and Industrial Track	Budget		
	2024	2025	2026
	\$8.0-8.5M	\$9.0-9.5M	\$9.5-\$10.0M

Notes: The table shows preliminary projections for budget for ConnectedSolutions in 2024-2026. Budget includes participant incentives (80-95 percent of total budget) and administration (5-20 percent of total budget, depending on pathway). Figures to be refined prior to regulatory filing.

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Rhode Island Energy is in the process of conducting a robust benefit-cost assessment using the accepted regulatory framework; findings forthcoming.

Section 5. Complete Budget, Performance Incentive, Funding Source

[Forthcoming]

Section 6. Request for Ruling

[Forthcoming]

Appendices

- Appendix 1. Slide Deck Format of *SRP Investment Proposal for Electric Demand Response 2024-2026*
- Appendix 2. Notes on Terminology
- Appendix 3. Legal and Regulatory Basis

Appendix 1. Slide Deck Format

[See attached]

System Reliability Procurement Investment Proposal for Electric Demand Response 2024-2026

Appendix 2. Notes on Terminology

Least-Cost Procurement Standards

The version of the Least-Cost Procurement Standards in effect for 2024-2026 is the version adopted by Order [TBD] in Docket No. 23-07-EE: <https://ripuc.ri.gov/Docket-23-07-EE>.

The following definitions are excerpted from the Least-Cost Procurement Standards for convenient reference:

System Reliability Procurement

Procurement to meet or mitigate a gas or electric system need or optimization from a party other than the gas or electric utility⁹ that provides the need or optimization by employing diverse energy resources, distributed generation, or demand response.¹⁰

Utility Reliability Procurement

Procurement to meet or mitigate a gas or electric system need or optimization that is not System Reliability Procurement is a utility investment.¹¹

System Needs

- i. Electric System Needs: Needs to serve both customer load and customer generation, including, but 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, operational considerations, and customer requests.
- ii. Gas System Needs: Needs to serve customers, including, but not limited to, system capacity (normal and emergency), pressure management, asset condition assessment, gas service that supports electric distributed generation, and operational considerations.

Optimization of System Performance

Improvement of the performance and efficiency¹² of the gas or electric system that includes enhanced reliability, peak load reduction, improved utilization of both utility and non-utility assets, optimization of operations, and reduced system losses.

⁹ A utility proposal to own and operate non-traditional investment or new operations and maintenance services, such as new voltage-regulation equipment, battery storage, or vegetation management, and any vendor services associated with such investment or service, shall not be considered System Reliability Procurement per this definition. Such investments and services are, however, still subject to the Guidance Document issued in Docket No. 4600A.

¹⁰ Including, but not limited to, the resources named in R.I. Gen. Laws § 39-1-27.7(a)(1)(i)-(iii).

¹¹ For example, many such Utility Reliability Procurement investments and operations are proposed in annual Infrastructure, Safety, and Reliability Plans filed pursuant to R.I. Gen. Laws § 39-1-27.7.1(c)(2).

¹² Efficiency includes both long- and short-term cost efficiency.

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Rhode Island Energy further annotates the following terminology to aid in understanding of this *2022 SRP Year-End Report*:

Non-Wires/Non-Pipes Alternative

Outdated terms referring to non-wires/non-pipes solution.

Non-Wires/Non-Pipes Solution

A solution that satisfies a System Need or Optimization of System Performance through means other than utility-owned infrastructure.

Non-Wires/Non-Pipes Opportunity

A System Need or Optimization of System Performance that may be satisfied via a Non-Wires/Non-Pipes Solution (i.e., the electric or gas screening criteria has been met).

Non-Wires/Non-Pipes Project Proposal

A proposal for a specific Non-Wires/Non-Pipes Solution for a specific Non-Wires/Non-Pipes Opportunity (i.e., such as a proposal submitted in response to a Request for Proposals).

Non-Wires/Non-Pipes Project

A specific Non-Wires/Non-Pipes Solution for a specific Non-Wires/Non-Pipes Opportunity (i.e., such as a project in the process of being constructed, installed, or otherwise implemented).

Non-Wires/Non-Pipes Program

The process by which Rhode Island Energy identifies non-wires/non-pipes opportunities, solicits and evaluates non-wires/non-pipes project proposals, and submits funding requests with relevant justification and documentation for non-wires/non-pipes projects.

Wires/Pipes Solution

A solution that satisfies a System Need or Optimization of System Performance through utility-owned infrastructure.

SRP Investment Proposal

A filing describing a Non-Wires/Non-Pipes Project per Chapter 5 of the Least-Cost Procurement Standards.

Utility Performance Incentive

Shared value between customers and Company shareholders.

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Appendix 3. Legal and Regulatory Basis

Least-Cost Procurement Statute¹³

System reliability procurement is contemplated in Rhode Island’s Least-Cost Procurement statute. Some key relevant excerpts from this statute are below for convenient reference.

“§ 39-1-27.7. System reliability and least-cost procurement.

(a) Least-cost procurement shall comprise system reliability and energy efficiency and conservation procurement, as provided for in this section, and supply procurement, as provided for in § 39-1-27.8, as complementary but distinct activities that have as common purpose meeting electrical and natural gas energy needs in Rhode Island, in a manner that is optimally cost-effective, reliable, prudent, and environmentally responsible.

(b) The commission shall establish not later than June 1, 2008, standards for system reliability and energy efficiency and conservation procurement that shall include standards and guidelines for:

(1) System reliability procurement, including but not limited to:

- (i) Procurement of energy supply from diverse sources, including, but not limited to, renewable energy resources as defined in chapter 26 of this title;
- (ii) Distributed generation, including, but not limited to, renewable energy resources and thermally leading combined heat and power systems, that 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, that 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;
- (iv) To effectuate the purposes of this division, the commission may establish standards and/or rates (A) For qualifying distributed generation, demand response, and renewable energy resources; (B) For net metering; (C) For back-up power and/or standby rates that reasonably facilitate the development of distributed generation; and (D) For such other matters as the commission may find necessary or appropriate.

¹³ RIGL 39-1-27.7 <http://webserver.rilin.state.ri.us/Statutes/TITLE39/39-1/39-1-27.7.HTM>

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(4) Each electrical and natural gas distribution company shall submit to the commission on or before September 1, 2008, and triennially on or before September 1 thereafter through September 1, 2028, a plan for system reliability and energy efficiency and conservation procurement...”

Least-Cost Procurement Standards – Chapter 5

Chapter 5 of the Rhode Island Public Utilities Commission’s “Least-Cost Procurement Standards,” approved and adopted pursuant to Order No. [TBD] in Docket No. 23-07-EE (LCP Standards), describes the intent, purpose, content, orders, and timing of *SRP Investment Proposals*. This Chapter is copied below for convenient reference.

“5.1 Intent

A. This Chapter provides standards and guidelines for System Reliability Procurement investment proposals (SRP Proposals) that are consistent with Three-Year SRP Plans filed pursuant to Chapter 4.

B. This Chapter does not require that all System Reliability Procurement investments identified in a Three-Year SRP Plan must be funded through an SRP Proposal.¹⁴

5.2 Purpose

A. SRP Proposals will present specific implementation of a System Reliability Procurement investment.

B. SRP Proposals will present specific costs of investments, specific funding plans, and, if applicable, proposals for cost recovery.

C. SRP Proposals will identify any established incentives that the specific investment is eligible for.

5.3 Content

A. Testimony

i. The distribution company will prefile testimony on the following:

a. how the Plan is consistent with the requirements of Section 1.3;

b. updated and specific information required in Sections 4.4.A.ii.a through d, 4.4.A.iv, and 4.4.A.v relevant to the investment(s);

c. costs, a funding plan, and proposed cost recovery; and

¹⁴ For example, in some instances, the investment may appropriately be funded through an Annual EE Plan.

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d. the specific approvals the distribution company is requesting from the PUC.

5.4 Orders

- A. The PUC will approve SRP Proposals that meet these Standards.
- B. The PUC may deny approval of investment proposals that do not meet these Standards and that are not critically lined to the cost-effectiveness of other investments that are otherwise consistent with these Standards.
- C. The PUC will order adoption of any other proposals supported by the SRP Proposal and consistent with Least-Cost Procurement, and all applicable statutes, rules, and policies.

5.5 Timing

- A. The PUC does not limit the timing of SRP Proposals, but prefers that the proposals be filed alongside, but separately from, annual Infrastructure, Safety, and Reliability Plans.”

Least-Cost Procurement Standards – Section 1.3

Section 1.3 of the Rhode Island Public Utilities Commission’s “Least-Cost Procurement Standards,” approved and adopted pursuant to Order No. [TBD] in Docket No. 23-07-EE (LCP Standards), establishes principles and stipulations for the assessment of cost, cost-effectiveness, reliability, prudence, and environmental responsibility of system reliability procurement solutions. This Chapter is copied below for convenient reference.

“A. Least-Cost Procurement shall be cost-effective, reliable, prudent, and environmentally responsible. Least-Cost Procurement that is Energy Efficiency and Conservation Procurement shall also be lower than the cost of additional energy supply. System Reliability Procurement shall be lower than the cost of the best alternative Utility Reliability Procurement.

B. When preparing any cost test or resource assessment, including the RI Test, the following principles will be applied:

- i. Supply-side and demand-side alternative energy resources shall be compared in a consistent and comprehensive manner.
- ii. Cost tests shall be created using the RI Framework and account for applicable policy goals, as articulated in legislation, PUC orders, regulations, guidelines, and other policy directives.

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- iii. Cost tests shall account for all relevant, important impacts, even those that are difficult to quantify and monetize. Where applicable cost or benefit categories cannot be quantified, such categories shall be qualitatively assessed.¹⁵
- iv. Cost tests shall be symmetrical, for example, by including both costs and benefits for each relevant type of impact.
- v. Analyses of the impacts of investments shall be forward-looking, capturing the difference between costs and benefits that would occur over the life of the investments with those that would occur absent the investments. Sunk costs and benefits are not relevant to a cost-effectiveness analysis.
- vi. Cost tests shall be completely transparent and should fully document and reveal all relevant inputs, assumptions, methodologies, and results.

C. Cost-Effective

- i. The PUC shall determine cost-effectiveness in a manner consistent with the PUC's Guidance Document issued in Docket No. 4600A.
- ii. The distribution company shall assess the cost-effectiveness of measures, programs, and portfolios of Least-Cost Procurement. All categories of the RI Test are applicable to cost-effectiveness, although some categories may have no or unknown value. The distribution company shall assess cost-effectiveness using, at a minimum, the following two cost-effectiveness analyses:
 - a. An analysis that, for categories with value or cost that is shared between Rhode Island Energy and other jurisdictions (both within the state and region), presents benefits and costs without allocating them between Rhode Island Energy and other jurisdictions;
 - b. An analysis that, for categories with value or cost that is shared between Rhode Island Energy and other jurisdictions (both within the state and region), presents only those benefits and costs that will be allocated to Rhode Island Energy.
- iii. The distribution company shall provide the specific benefit- and cost-factors included in determining the RI Test ratios.
- iv. With respect to the value of greenhouse gas reductions, the RI Test shall include the costs of greenhouse gas emissions mitigation (measured in CO₂ equivalents) as they are imposed and are projected to be imposed by the Regional Greenhouse Gas Initiative, Rhode Island Renewable Energy Standard and Rhode Island Act on Climate, and any other utility system costs associated with

¹⁵ Qualitative assessments may include relative descriptions of magnitude and direction.

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reasonably anticipated future greenhouse gas reduction requirements at the state, regional, or federal level for both electric and gas programs. The RI Test shall also include the costs and benefits of other emissions and their generation or reduction through Least Cost Procurement. The RI Test may include the value of greenhouse gas reduction not embedded in any of the above.

v. Benefits and costs that are projected to occur over the term of the Least-Cost Procurement investment 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 Least-Cost Procurement. Energy efficiency is a low-risk resource in terms of cost of capital risk, project risk, and portfolio risk.

D. Reliable

i. The distribution company shall assess the

- a. ability of Least-Cost Procurement investments to meet the energy supply or delivery system needs.
- b. ability of previous investments, including identical or similar investments, to support the conclusion that a new investment is reliable, and
- c. potential for implementation issues, including available workforce, market continuity, program scalability.

ii. As applicable, the distribution company also shall assess an investment's

- a. ability to meet specific identified system needs;
- b. anticipated reliability as compared to alternatives;
- c. operational complexity and flexibility;
- d. resiliency of the system;
- e. risks associated with investment (for example, the 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, etc.);
- f. risks associated with customers' behavior, responsiveness, and ability to potentially modify usage at certain times and seasons; and
- g. relative changes in other risks that are applicable to the investment, such as reduced (or increased) public safety risk.

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The distribution company shall supply any other information that the company believes supports a finding that an investment is reliable.

E. Prudent

i. The distribution company shall assess:

- a. how the investment supports the goals of the electric or natural gas system and the purposes of Least-Cost Procurement.
- b. potential for synergy savings based on alternatives that address multiple needs;
- c. how the entire investment proposal affects the risks of ratepayers and the distribution company;
- d. how the investment effectively uses available funding sources and integrates with energy programs and policies; and
- e. how the investment is equitable in consideration of the allocation of costs, the allocation of benefits, customer access, and customer participation. This shall be done by, at minimum, assessing which groups have historically received disproportionately lower benefits from LCP investments and by presenting other appropriate, quantifiable metrics that describe how an investment is equitable.

ii. The distribution company shall provide rate impacts to a range of customer types and usage levels, and shall provide bill impacts, and shall provide how these impacts were considered in the proposed investment.

iii. The distribution company may provide additional cost tests to support a finding that an investment is prudent.

iv. The distribution company shall supply any other information that the company believes supports a finding that an investment is prudent.

F. Environmentally Responsible

i. The distribution company shall assess how investment complies with State environmental and climate policies and shall properly value environmental and climate costs and benefits.

ii. The distribution company shall assess how the investment affects environmental and climate pollution, where applicable, at a local, regional, and global scale.

G. Lower than the Cost of Additional Supply (omitted)

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H. Lower than the cost of the best alternative Utility Reliability Procurement

- i. The distribution company shall compare the cost of System Reliability Procurement measures, programs, and/or portfolios to the cost of the best alternative Utility Reliability Procurement option using all applicable costs enumerated in the RI Framework. The distribution company shall provide specific costs included in the Cost of System Reliability Procurement.
- ii. At a minimum, the comparison shall include the applicable cost categories in a Total Resources Cost Test.
- iii. The distribution company shall describe which costs in the RI Framework were included in the cost of System Reliability Procurement and which costs are included in the alternative Utility Reliability Procurement. For any categories that are not included in either, the distribution company shall describe why these categories are not included.”

