



Systems Integration Rhode Island Stakeholder Meeting

Thursday, November 19, 2015
Department of Administration

***“Leading Rhode Island to a secure,
cost-effective, and sustainable energy future.”***

Today's Agenda

- **Welcome & Introductions [10 minutes]**
- **Meeting Objectives & SIRI Background [10 minutes]**
- **Overview of SIRI Report [1 hour]**
- **Break [10 minutes]**
- **Overview of SIRI Recommendations [1 hour]**
- **Additional Discussion & Next Steps [30 minutes]**
- **Adjourn**

Welcome and Introductions

Who is in the room with us today?

Meeting Objectives & SIRI Background

Today's Objectives

- Present the highlights of the SIRI working group's draft document on “systems integration”
- Share reactions, questions, and feedback from stakeholder participants
- Discuss next steps in Rhode Island related to systems integration

Framing Questions

- **What challenges related to systems integration are you facing?**
- **Does this help formulate the discussion in a way that helps address the issues you are trying to work on in Rhode Island?**
- **Does the proposed vision for systems integration align with your vision? What matches or what is missing?**
- **How would you like to be involved going forward?**

What we are looking for today

- The SIRI working group has developed a draft document
- We would like oral feedback today, and welcome written feedback after the meeting
- The SIRI working group anticipates compiling stakeholder feedback into an appendix for the draft document (any factual errors in document will be corrected)
- The SIRI team envisions this document as a stepping stone, not written in stone—the hope is to be nimble, to help frame and guide next steps

Background & Origin of SIRI

- **The Rhode Island State Energy Plan**
 - Recommendations regarding EE, DG, strategic electrification of heating and transportation
 - *Strategy 13: Modernize the Grid* – “This strategy recommends convening a working group to develop recommendations for electric grid, rate, and regulatory modernization in Rhode Island”
- **3-YR Planning Process for the 2015-2017 Energy Efficiency Procurement Plan**
 - “Systems Integration” subcommittee of the EE Collaborative
 - “Recognizing efficiency in the context of a broader definition of customer-side resources and options; and second, consideration of the actual and potential cumulative impacts of deploying such resources aggressively on the total regulated energy, and total energy systems”
 - SIRI representation from OER, EERMC, DG Board, and National Grid

SIRI Working Group

- **Facilitation: Rich Sedano of the Regulatory Assistance Project (RAP)**
- **Rhode Island Office of Energy Resources (OER)**
 - Commissioner Marion S. Gold, Ph.D.
 - Danny Musher
- **Rhode Island Energy Efficiency and Resource Management Council (EERMC)**
 - Abigail Anthony
 - Leslie Malone
 - Scudder Parker
 - Mike Guerard
- **Rhode Island Distributed Generation Board (DG Board)**
 - Sue AnderBois
 - Charity Pennock
- **National Grid**
 - Jeremy Newberger
 - Courtney Lane

Overview of SIRI Report

Introduction

- **RI's energy system is becoming more complex as consumers adopt distributed energy resources**
 - Deep investments in EE, RE, heat pumps, EV's, and more
- **The changing system represents opportunities and challenges for the electric distribution system**
 - Two-way power flow, “non-wires solutions”, questions regarding planning, rate structures, and benefits/costs of new investments

Introduction

- “The idea of “systems integration” recognizes that Rhode Island already has **several focused, strong, and effective energy processes that can be built upon** to support the achievement of future objectives for the electric grid”
- “The purpose of the SIRI group was to take a **first step at mapping out key issues related to the future of Rhode Island’s electric grid and offer early stage recommendations** for addressing opportunities, filling gaps, and gaining efficiencies in existing state processes”

Introduction

- **The SIRI group undertook the following tasks:**
 - Define what “systems integration” means for Rhode Island within the context of the newly-approved State Energy Plan and ongoing energy/grid planning, procurement, and investment processes;
 - Inventory and map out the applicable existing energy policy/regulatory processes in Rhode Island and their interaction;
 - Propose preliminary approaches and recommendations for addressing key issues; and
 - Establish a work plan, based on the recommendations, that defines next steps and milestones related to systems integration.

Defining “Systems Integration”

- SIRI is the intersection of “processes” and “stakeholders”
- “Process” is a specific activity related to energy/grid planning, procurement, or investment that is named in statute, or performed in Public Utilities Commission (PUC) practice
- “Stakeholder” is an agency, council, or other participating group in a process
- “System” refers to how processes and stakeholders may interact to form an overall result

Defining “Systems Integration”

- **“Systems Integration”** refers to the intentional and thoughtful coordination of existing systems (i.e. processes and stakeholders), so as to harmonize them with the ability to achieve stated goals
- **While there is currently some coordination among processes and stakeholders, SIRI asks the following questions to examine potential improvements:**
 - What steps can Rhode Island take today to put us on a path to achieve our energy goals?
 - What can Rhode Island achieve if all processes are tuned to work optimally together?
 - After considering how the integration of existing processes can be improved and maximized, what are the remaining gaps, and what new or revised processes will address them?

SIRI Goals, Foundations, & Principles

- **“Goals”** are desired energy, economic, and environmental outcomes for the state’s energy system, as established in Rhode Island’s public policy and by previous stakeholder- and data-driven energy planning efforts
- **“Foundations”** describe attributes Rhode Island stakeholders seek in the state’s energy/grid planning, procurement, and investment processes in order to enable the attainment of the stated goals
- **“Principles”** were used to guide the SIRI team’s evaluation of state processes and embody the participants’ approach to considering systems integration

SIRI Goals

- **From the State Energy Plan:**
 - Maximize energy efficiency in all sectors;
 - Promote local and regional renewable energy;
 - Develop markets for alternative thermal and transportation fuels;
 - Make strategic investments in energy infrastructure ;
 - Mobilize capital and reduce costs;
 - Reduce greenhouse gas emissions; and
 - Lead by example

SIRI Foundations

- **Enable Customers**
- **Manage Costs**
- **Reveal, Monetize Value**
- **Minimize Barriers**
- **Maintain Strong, Capable Delivery Utility**
- **Simplify the Experience**

SIRI Principles

- **Promote an integrated and strategic approach across all regulatory and planning processes;**
- **Build on existing processes and systems;**
- **Identify gaps and missed connections, then consider adjustments or additions to processes and systems to fill gaps and make connections;**
- **Identify and use metrics to measure progress; and**
- **Use public input to inform actions and keep the process to consider and execute SIRI report recommendations transparent.**

Mapping Existing Processes

- The SIRI group identified thirteen distinct processes in which state regulation influences electricity consumers, utilities, and private sector actors to consider the state’s priorities on climate, clean energy, and customers

Category	Process
Customer-Facing Processes	Energy Efficiency Program/Least-Cost Procurement
	Ratemaking – Delivery Prices
	Retail Choice
	Interconnection Standards
Renewable Energy Promotion Processes	Renewable Energy Growth Program
	Net Metering
	Renewable Energy Standard
	Long-Term Contracting Standard for Renewable Energy
Grid Planning, Procurement and Investment Processes	System Reliability Procurement/Least-Cost Procurement
	Infrastructure, Safety, and Reliability Plan
	Utility Financial Incentive
	Standard Offer Supply Plan
	Environmental Regulation

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Mapping: Utility Financial Incentive

- Customer-Facing Processes
 - Energy Efficiency Program/Least-Cost Procurement: The EERMC and the utility can review existing financial incentive structures and propose adjustments to align utility and consumer incentives with the objectives of least cost planning and the SRP process. At present, there is a shareholder incentive based on energy efficiency program performance.
 - Ratemaking – Delivery Prices: The utility earns a return on rate base which is based on the cost of debt and other capital forms and the cost of equity as determined by the PUC using standard methods. Returns are included in delivery rates.
- Renewable Energy Promotion Processes
 - Renewable Energy Growth Program: The utility receives an incentive of 1.75% (excluding administrative costs) on the cost of renewable energy in the REG program. Long-Term Contracting Standard for Renewable Energy: The utility receives an incentive of 2.75% (excluding administrative costs) on costs associated with LTC.
- Grid Planning, Procurement and Investment Processes
 - System Reliability Procurement/Least-Cost Procurement: There is no utility financial incentive currently for SRP.
 - Environmental Regulation: There is no utility financial incentive currently for environmental regulation solutions.

Test Cases

- The SRI team evaluated how a select group of resource, end use, and grid planning outcomes would be promoted or inhibited by existing processes
 - Non-wires solutions in utility planning: Chosen as a test case because of the current limited focus of SRP and the desire to see broader application.
 - Solar PV deployment: Chosen because of the number of processes focused on renewables in Rhode Island, particularly solar PV.
 - Strategic electrification – heating: Chosen because it was already recognized as an area where current processes are not adequately addressing the perceived opportunity.
 - Strategic electrification – transportation: Chosen because it represents a significant potentially transformative change to the electric grid.
 - Active load management: Chosen because it is the prototypical example of a more dynamic two-way electricity grid.

Active Load Management (ALM) Test Case

- **Definition: Direct control of electric loads in order to reduce demand during peak periods or balance the supply of electricity at other times.**
 - Signals
 - Communications
 - Tools
 - Engaged and willing participants
- **Current Status**
 - Being piloted in SRP
 - National Grid currently has flat rates

Synergies

- **LCP statute references demand response and demand reduction during times of peak**
- **Devices beginning to be deployed**
- **Simple communications (home energy reports, web portal) in place**
- **Could participate in ISO-NE markets and create revenue source**
- **Could be optimized by customers together with distributed generation to create system benefits**
- **Load shaping could reduce peak generation and associated pollution and influence procurement**

Barriers

- **Absence of enabling advanced metering or time varying rates**
- **Lack of information about costs and benefits**
 - Costs may be high
 - Benefit/cost test used for energy efficiency may not capture all benefits
- **Not a good fit with energy efficiency programs which have goal of energy savings**
- **Reliability: questions about consideration of DR in distribution planning and customer recruitment and retainage over time has proven to be challenging to date**
- **Uncertainty about interaction with net metering bill credits**

Test Case Recommendations

- **Consider incorporating ALM into next LCP plan for 2018-20**
 - Complete market assessment regarding potential for DR
 - Obtain value for super peak time period to enable screening of DR in EE plans.
 - Assess whether the cost/benefit framework is reflecting the full net value of ALM
- **In Standards review process, re-draft standards to include guidance for screening and deploying ALM**
- **Examine the potential for a rate design or other pilot that can promote ALM without meters**
- **Consider design of underlying planning process, technologies and rate structures that would maximize benefits to customers, system, and environment of this approach**

Break

Overview of SIRC Recommendations

SIRI Recommendations

- **Recommendation #1: Identify Ways to Promote More Cost-Effective, Comprehensive NWA Distribution Planning**
- **Recommendation #2: Assess Market Potential, Costs, and Benefits of Strategic Electrification and Active Load Management**
- **Recommendation #3: Pave the Way for Accelerated Use of Electric Vehicles**
- **Recommendation #4: Map Rhode Island's Current Renewable Energy Promotion Processes and Assess Adequacy and Gaps**
- **Recommendation #5: Assess Market Potential, Costs, and Benefits of AMI and TVR**
- **Recommendation #6: Consider Whether Methods of Performance Regulation Can Be Implemented to Further the Public Good**

Timelines

- The recommendations contain individual follow-up items and work tasks, with associated timeframes
- Members have estimated when each recommendation can see action
- Recommendations cover near-term actions out to ~2017
- Note that the group has not done a detailed planning exercise that identifies all conflicts and contingencies among these recommendations
- Thus, some dates may be found after future analysis in follow on work to this report to be optimistic or unrealistic

#1: NWA Distribution Planning

- **SIRI finds that a broader interpretation of the SRP law could provide greater benefits to consumers and the grid, and SIRI finds that opportunities exist to expand the SRP Standards to align with other processes like distribution planning, REG, and net metering**
 - Increase collaborative engagement in the distribution planning process
 - Improve coordination of distribution planning/SRP with other processes
 - Fulfill objective of executing on all cost-effective NWA opportunities
 - Explore ways to address funding issues
 - Create a suitable financial incentive for NWA distribution planning

#2: Strategic Electrification & ALM

- Improving our understanding of the energy system impacts of high-efficiency electric heat and active load management will be critical for: 1) determining Rhode Island's energy savings targets for 2018-2020; 2) updating the EE and SRP Standards; and 3) developing the 2018-2020 EE and SRP Plans:
 - Continue to gather data and information through ongoing programs and pilot experiences
 - Explore formal incorporation of strategic electrification and ALM into EE Program process

#3: Electric Vehicles

- **The Rhode Island Zero Emission Vehicle (ZEV) working group has identified high- and/or near-term priority action items regarding the EV market in Rhode Island. Specific items were highlighted relative to regulatory and utility issues pertaining to EVs. The SIRI team drew on the action items listed by the ZEV working group, and blended in some additional observations on EVs**

#4: Map RE Processes

- **An effort should be made to review Rhode Island's existing suite of renewable energy promotion processes and confirm that the processes are adequately serving the state's clean energy goals:**
 - Maintain commitment to renewable energy deployment in Rhode Island
 - Task the DG Board and interested stakeholders with reviewing processes to assess the complementary nature of the programs and what improvements could improve their effectiveness
 - Coordinate among renewable incentive programs to ensure optimal design and delivery
 - Integrate renewable programs into utility planning

#5: AMI & TVR

- There are promising rate design models such as time-varying rates (TVR) that may provide cost-effective energy, economic, and environmental benefits to Rhode Island. Limited or no information is available on the market potential, costs, and benefits of implementing TVR and associated enabling technology such as advanced metering infrastructure in Rhode Island specifically:
 - Monitor the National Grid “Smart Energy Solutions” pilot in Worcester, MA and review results as they become available
 - A collaborative study hosted either by the PUC or the OER and supported by the utility should be conducted that engages stakeholders in the business case (i.e. potential, costs, and benefits) of AMI and TVR in Rhode Island

#6: Performance Regulation

- **Establish forum to explore the expanded use of performance incentives in Rhode Island. As part of this effort, examine opportunities to better align the utility's incentives across various processes with policy goals and priorities, including SRP and NAWs. Consider the possibility of mechanisms that would reward activities that yield system, customer, and environmental savings beyond just EE.**

Additional Discussion & Next Steps

Discussion: Framing Questions

- **What challenges related to systems integration are you facing?**
- **Does this help formulate the discussion in a way that helps address the issues you are trying to work on in Rhode Island?**
- **Does the proposed vision for systems integration align with your vision? What matches or what is missing?**
- **How would you like to be involved going forward?**

Next Steps

- Please send written thoughts and feedback to danny.musher@energy.ri.gov by Monday, December 7
 - The SIRI working group anticipates compiling stakeholder feedback into an appendix for the draft document (any factual errors in document will be corrected)
 - The SIRI team envisions this document as a stepping stone, not written in stone—the hope is to be nimble, to help frame and guide next steps
- OER will notify this stakeholder list of upcoming opportunities and next steps to engage in the SIRI process