



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 SIRI 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

Systems Integration Rhode Island Stakeholder Meeting

Thursday, November 19, 2015

2 PM – 5 PM

Conference Room A, 2nd Floor

Department of Administration (Powers Bldg.), One Capitol Hill, Providence, RI

Attendees: Abigail Anthony, Alan Nault, Becca Trietch, Celia O'Brien, Chon Meng Wong, Chris Kearns, Chris Long, Courtney Lane, Cynthia Wilson-Frias, Danny Musher, George Sfinarolakis, Janice McClanaghan, Jennifer Hutchinson, Jeremy Newberger, Jerry Elmer, John Isberg, Jon Hagopian, Josh Brumberger, Karen Lyons, Karen Verrengia, Kat Burnham, Leslie Malone, Lindsay Foley, Macky McCleary, Marion Gold, Michael McAteer, Mike Guerard, Nicholas Ucci, Rachel Sholly, Raquel Webster, Richard Sedano, Ryan Constable, Ryan Crowley, Sam Marullo, Scudder Parker, Seth Handy, Shigeru Osada, Steve Scialabba, Sue AnderBois, Tim Roughan, Todd Bianco.

Welcome & Introductions

Danny Musher from the Office of Energy Resources began the meeting at 2:09 PM.

Mr. Musher introduced himself to the group and formally introduced Office of Energy Resources Commissioner Marion Gold. Commissioner Gold outlined the opportunities and challenges to develop an electricity grid that is resilient, sustainable and can lead us to a secure and stable energy future. She noted that there has much discussion about grid modernization and that this meeting will serve as the first opportunity to share the work that has been done over the past year. The group needs to break down the rhetoric into clear, outcome-oriented tasks that can addressed collaboratively. She added that National Grid has a unique opportunity to utilize its status as the primary utility in the state to closely coordinate with all stakeholders to move forward. She closed by reporting that the Public Utilities Commissioners opted not to attend the meeting as there are many open dockets and the commissioners wanted to ensure that they did not review any material that had not been vetted.

Presentation: "Systems Integration Rhode Island"

Mr. Musher, Richard Sedano of the Regulatory Assistance Project (RAP), Scudder Parker of Vermont Energy Investment Corporation (VEIC), and Courtney Lane and Jeremy Newberger of National Grid presented to the meeting attendees.

Celia O'Brien noted that Strategy 13 from the State Energy Plan refers to a working group, and asked if the SIRI working group referred to in the presentation is the working group mentioned in Strategy 13. Commissioner Gold clarified and said this is the working group referenced as there are no others currently operating.

Jeremy Newberger of National Grid stated that the group acknowledges there are other related proceedings in other states but the group wants to build on the platforms in Rhode Island and integrate them. The document offers a unique Rhode Island perspective.

Commissioner Gold noted the argument has long been that for energy efficiency, it is good for the environment and it is cheapest. Renewables need to be integrated into the system in a manner which is most cost-effective. In response to a question from Todd Bianco, Mr. Sedano stated that in terms of outcome, there is an intersection between energy regulation and environmental regulation. Ignoring environmental regulation would leave a gap. Danny Musher added that specifically that the Resilient Rhode Island Act, the Regional Greenhouse Gas Initiative (RGGI) and the Clean Power Plan were considered by the group when including environmental regulation in the equation.

Mackey McCleary added that the customer should be viewed as a resource to get to the policy outcomes the group wants. Tim Roughan from National Grid noted that despite Rhode Island's overall high levels of participation in energy efficiency program, there are many folks that have not taken advantage of the programs and incentives that are currently available. Mr. Sedano stated that California is going to mandatory opt out time varying rates in 2019 across all sectors. He added that typically customers tend to stay where they are whether they are starting out with time varying rates or flat rates. Regulators can ask a utility to provide shadow pricing to demonstrate how another rate structure would affect a customer's bill.

Presentation: "Systems Integration Rhode Island Recommendations"

Mr. Newberger presented NWA Distributed Planning recommendations:

Seth Handy asked if there was a time element to cost-effectiveness of non-wires alternatives. Short-term costs and benefits can be different than long-term costs and benefits. Mr. Newberger said the value of deferring is captured for distribution facilitates and shows how many years you can you defer the project. In general National Grid looks at the benefits of whatever may be considered over the lifetime a measure is expected to be there.

Shigeru Osada stated that strengths and weaknesses need to be analyzed before developing this strategy. Detailed data analysis would produce a more narrowed discussion. He added that quantitative data is needed to further enhance this discussion.

Scudder Parker presented Strategic Electrification & Active Load Management recommendations:

Mr. Bianco asked if the loss of energy diversity that would come with electrification and heat was considered. Mr. Parker said that electrification can allow for fuel diversification as new power generation sources are integrated into the grid.

Mr. Musher presented the electric vehicles recommendations:

Seth Handy noted that transportation was a large area where money could be saved and wondered if benefits gained in some areas be used in other areas. Mr. Musher stated yes and as different sectors

begin to converge, they begin to impact each other. The group considered what will this mean for the electric distribution grid.

Sue AnderBois presented Map Renewable Energy Processes recommendations:

Seth Handy asked if there was Renewable Energy Coordinating Board. Ms. AnderBois and Mr. Musher stated that the group had been repealed. Commissioner Gold added that her assumption is that the Distributed Generation Contracts Board could step into the role of the previous board. Mr. Musher stated that the group wanted to understand if the processes are interacting correctly and best serving Rhode Island goals. Commissioner Gold suggested this would be a good area to have a working group.

Abigail Anthony presented the Advanced Metering Infrastructure & Time-Varying Rates recommendations:

No questions from the group.

Mr. Sedano presented Performance Regulation recommendation:

Mr. Bianco asked if the idea is that because the group has reached these recommendations informally and without the PUC, the group intends to work without the PUC for the time being. Mr. Sedano said the goal had been to allow for a creative process, and since the PUC has much daily business, the group had not considered the PUC wanting to become that forum, but could be open to the idea. Mr. Sedano offered an example Minnesota's E21 process, in which stakeholders have talked about how to address many of these issues. There, PUC Commissioners have said they are not ready for the idea and would like it better developed. The SIRC group knows the Public Utilities Commission has a high bar and wants to make sure it presents something solid. Mr. Newberger added that there is a desire to achieve more clarity as to what the group is trying to incent and the group is working to determine what might be better advanced if there is an incentive in place.

Question and Answer Discussion:

Mr. Bianco asked if the working group included engineering input. Mr. Newberger said subject matter experts from National Grid presented to the SIRC group throughout and during development of the final document, he and Ms. Lane reached out to the Company's experts.

Chris Long noted customer engagement is going to be a key to success. Commissioner Gold suggested a series of learning sessions.

Mr. Osada added that it is tough to digest the plan without data.

Janice McClanaghan suggested reviewing the consequences of the recommendations and prioritizing them.

Steve Scialabba offered that the group must consider what the effect on rates will be as a result of these recommendations.

The meeting ended at 5:02PM.