



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

## **DRAFT MEETING MINUTES**

**Thursday, May 8, 2014**

**3:30 - 5:30 PM**

Conference Room C  
Department of Administration  
One Capitol Hill, Providence, RI

**Members Present:** Abigail Anthony, Joe Cirillo, Marsha Garcia, Julie Gill, Marion Gold, Michael McAteer, Joe Newsome, Chris Powell, Paul Ryan

**Members Absent:** Jennifer Hutchinson, Dan Justynski

**Consultants Present:** Mike Guerard, Sam Huntington, Scudder Parker

**OER Staff Present:** Sue AnderBois, Nick Ucci

**Others Present:** Karen Bradbury, Francis Boucher, Caitriona Cooke, Josh Craft, Kaitlin Gregg, Allie Graskemper, Courtney Lane, Sean Murphy, Jeremy Newberger, Ben Rivers, Laura Rodormer

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

Chairman Paul Ryan called the meeting to order at 3:36 PM.

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

Draft April meeting minutes were not brought for a vote for approval since a quorum of those present at the April meeting was not present at this time.

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

Commissioner Gold shared that the Executive Climate Change Council (EC3), led by the Governor's office and Chaired by DEM Director Janet Coit, released their draft recommendations at a press conference that morning in Bristol. There was an emphasis both on mitigation and adaptation and was a great forum to talk about the State Energy Plan and energy efficiency as the most cost-effective mitigation strategy.

Commissioner Gold also announced that the OER is looking strategically at the committee and subcommittee structure of the EERMC. Commissioner Gold and the OER staff will present a draft plan that could facilitate Council member involvement on subcommittees at the June meeting.

OER Chief of Staff Nick Ucci presented on winter wholesale energy price volatility and the New England Governors' Energy Infrastructure initiative. A copy of the presentation was made available in the meeting packets.

Mr. Powell made a comment that customers who are 'interruptible' on the grid were seeing even higher energy prices this winter than the numbers presented. Because their supply was interrupted frequently, they purchased oil to supplement: it was the worst winter for industrial customers in years. Ms. Gill added that the Manchester St Power Station used oil 40% of the winter because it was less expensive than natural gas.

Mr. Powell noted that while this winter RI experienced extreme temperatures, they weren't over a long duration (no extreme cold snaps, like in Chicago). Even with this scenario, there were problems with systems shutting down. Mr. Ryan asked if there were lessons to be learned from places like Chicago that bore the brunt of the "polar vortex". Mr. Ucci responded that the various ISOs and FERC were reviewing winter experiences more broadly to identify common problems and solutions, but New England has a unique infrastructure and generation profile.

Mr. Powell pointed out that for commercial and industrial customers the price hedge is only generally 3 months on natural gas prices – as opposed to the 6 months – 2 years with National Grid. This was a "hit to our local GDP, regionally." He pointed out that Spectra Energy is bring additional capacity for winter heating to the Northeast – which could help alleviate pressure on electricity systems also reliant on natural gas. There's also a lot of fuel switching happening – whole towns in Main are converting to natural gas: where is that gas going to come from?

Commissioner Gold pointed out that these system constraints & high prices are a good opportunity for energy efficiency. But we need to be careful – if prices get too high and companies cannot afford prices, we could lose buy-in on EE & RE programs (since they are part of the rate that can be controlled).

Mr. McAteer asked how we could include risk sharing in the strategy. Mr. Powell responded that our current cost/benefit numbers are all based on historic market rates. How can we include potential future costs/volatility - which are both growing - and show the efficiency numbers against those projections? Most planners are using today's energy prices with a 3% annual adder, which is likely limited.

Ms. Gill asked if oil and gas were mixed to keep the pressure off the line. There was a general agreement that that did not happen.

All Council members commended Mr. Ucci on his presentation and work on this issue.

#### **4. Policy/Planning Issues**

##### *Update on PUC Technical Sessions*

Scudder Parker, Michael Guerard, and Jeremy Newberger updated the Council on PUC Technical Sessions on the Street Light Tariff and Cost Effectiveness.

Mr. Newberger gave a summary of his presentation to the PUC on cost effectiveness and the different methods used to value energy efficiency. Rhode Island utilizes the Total Resource Cost test to value efficiency. Mr. Newberger related that at the hearing Time Wolf, the DPUC's consultant, discussed the importance of connecting the cost-effectiveness test used to the state's goals.

The hearing also addressed the environmental impacts of energy efficiency measures. Environmental costs are only included in the TRC to the extent that there is a monetary value placed on the resources. For example, RGGI sets a price for GHG emissions from the electric power sector, but does not account for the impacts from delivered fuels. RI also currently does not adequately value the impact of when energy is used. For example, should energy efficiency be valued more highly during the winter months because of higher avoided costs?

The Consultant Team presented on electric heat pumps. There is a memo summarizing their thoughts included in the packet. They expressed their belief that electric heat pumps are becoming viable and competitive with natural gas as a heating source because of the high and volatile price of natural gas, as evidenced this past winter.

Mr. Boucher commented that currently heat pumps also use gas because the electric grid is reliant on gas power plants. Ms. Anthony pointed out that this won't necessarily be the case as we move toward more renewables on the grid.

Mr. Powell asked about the timeline for any proposed transmission expansions in the region. His experience tells him that the process will be a minimum of seven years. Further, if gas prices ratchet up, even absent constraint concerns, heat pumps might become even more viable.

Ms. Gill shared that there was a recent NOAA study demonstrating that methane and benzene released from using natural gas as fuel is much worse than expected. Mr. Powell pointed out that New England has the highest natural gas leak rate in the country.

Ms. Anthony recommended that one piece of the memo the Council and National Grid should pursue is updating our understanding of the actual value of energy efficiency under increasing energy prices. Current processes do not reflect future price forecasting. Taking these into account could lead to even further support for energy efficiency.

Mr. Newberger informed the Council that National Grid is already working on an avoided costs study. It should be completed by March 2015 (the timeline was set by the MA 3-year plan).

Ms. Abigail and Mr. Powell pointed out that this could be a great opportunity to better market energy efficiency, especially to large C&I customers who are often looking for ways to cut costs. Demonstrate the opportunities that are available now for reducing energy use and costs.

Mr. Ryan cautions that we need to ensure that the message around efficiency is not super-complicated or technical in order to work best with policymakers and regulators. Mr. Ucci added that we need to start thinking about energy efficiency measures like a power plant. Do users want to pay for 12 cent/hour energy, or 4 cents? Mr. McAteer added that National Grid is looking for other ways market energy efficiency beyond just saving energy – different customers have different motivations (productivities, making cities vibrant, economic development, job creation, technology improvements & modernization, etc.)

The Street Lighting docket also went well. There is support for a well-designed pilot. Street light efficiency should be relatively uncomplicated.

#### *Update on 3-Year Plan*

The consultant team continues to engage on the 3-year plan effort, specifically through engaging with the PUC on standards. The consultant team is representing the Council's interests well. If specific Councilors have questions, they can refer them to Mr. Guerard or Mr. Newberger.

Marion reminded the Council that next month there will be discussion around integrating distributed generation into system reliability planning at National Grid.

The next Demand Collaborative meeting is on May 29<sup>th</sup> at National Grid.

### **5. First Quarter Energy Efficiency Program Update and 2013 Results**

Courtney Lane presented on National Grid's first quarter energy efficiency programs. See attached.

Mr. Powell reminded the group that we are trying to “reverse the hockey stick” and asked if that goal was reflected in the numbers presented. Ben Rivers reminded everyone that the numbers only reflect jobs that have been paid – not jobs in process. Q1 will regularly be a little slower after processing everything from Q4 of the previous year – but numbers are already picking up in April. Further, Mr. McAteer informed the council that NGrid's sales organization has been restructured to include quarterly targets with incentives as a way to improve forecasting and ‘manage the hockey stick’.

Abigail Anthony noted that compared with the last three years, we're right on track.

Ben Rivers and Laura Rodormer discussed National Grid's strategy related to energy efficiency programs. See attached.

### **6. Technology Trends for Energy Efficiency Policy and Planning**

Fran Boucher and Laura Rodomer gave a presented entitled “Zero Net Energy Ready in Commercial and Residential Applications”, which is available in the meeting packets – see attached.

Mr. Powell made a comment on behavior-based energy efficiency. In his pilots at Brown utilizing students, they've found that behavior comprises 27% of the energy saved. Brown is doing case study

comparison between buildings through analysis and metering. He noted that it is imperative to find an efficient way to continue the program year-to-year to avoid making repeated financial outlays. These programs also require a lot of buy-in, and acquiring enough data can take a long time.

Mr. Newsome asked whether you need to pay architects more for higher efficiency design – which could increase costs for homeowners. Mr. Boucher believes that while there is additional work to design highly efficient buildings, many architects are not paid more. Further, the gains aren't made once the design phase is complete – it takes education and specialized tools and knowledge throughout the chain.

Mr. Powell shared that his colleagues at Stanford are doing some work on net-zero buildings. He feels like it would be helpful to have a list/consortium/information sharing of some kind so that others can learn from the front-runners in this conversation.

## **7. Other Business**

### *Energy Expo Discussion*

There was no opposition to participating in the Home Show again in 2015. There is unanimous agreement that it went very well.

Mr. Newsome moved to have a discussion of the Outcomes document included in the next EERMC meeting since the meeting was running late.

### *EERMC Branding Study*

Sue AnderBois gave a quick update on the status of the branding study being funded by the EERMC.

## **8. Public Comment**

NEEP is holding summit June 2-3 in Newport, RI. Josh Craft will circulate information.

## **9. Adjournment**

Mr. Cirillo made a motion to adjourn. Ms. Anthony seconded and the motion passed unanimously. The meeting was adjourned at 5:43 PM.

**Next Meeting: June 12, 2014, 3:30 - 5:30 PM, Conference Room C**

**RHODE ISLAND  
EXECUTIVE CLIMATE CHANGE COUNCIL**

**A RESILIENT RHODE ISLAND:  
BEING PRACTICAL ABOUT CLIMATE CHANGE**

**PRELIMINARY REPORT  
TO  
GOVERNOR LINCOLN D. CHAFEE**

**PURSUANT TO EXECUTIVE ORDER 14-01**

**MAY 2014**



## RECOMMENDATIONS: KEY PRINCIPLES

RI is committed to adopting a statewide climate change resiliency program that

1. defines its mission as **practical problem-solving**, not philosophical or even scientific debate
2. emphasizes **both mitigation and adaptation** as necessary elements on an ongoing basis, and optimizes strategies that produce benefits in both areas
3. improves **coordination and collaboration** between state government agencies, using existing authorities and programs to the extent possible, without a net increase in government bureaucracy
4. improves coordination and collaboration among local, state and federal government
5. improves services provided by state government agencies **without a net increase in regulatory process**
6. engages **both the public and private sectors** in developing and implementing strategies, and offers practical incentives and mechanisms for public-private partnerships to work
7. is (and asks participating entities to be) **entrepreneurial** in looking for the most effective, efficient and affordable ways to achieve its goals and objectives; dares to restructure and streamline authorities or programs when and where appropriate to produce better results more quickly
8. recognizes that all areas of the state are affected by climate change and extreme weather events, and is structured so as to **serve the whole state**
9. recognizes there are **populations** and geographic areas in the state **that are particularly vulnerable**, for various reasons, and makes it a priority to identify and address such vulnerabilities in a timely and equitable manner
10. makes effective communications a top priority and develops a **partnership-based communications program** that
  - a. does not just focus on communicating “down” but enables civic conversation and debate by and among affected communities, groups and citizens, and ensures that they can communicate “up” into planning and decision-making processes
  - b. coordinates “public messaging” (non-emergency) from state agencies around climate and resiliency
  - c. makes up to date and reliable, scientific, technical and other information available to various user categories, in formats tailored to those categories
  - d. assists in improving emergency response communications, especially among jurisdictions utilizes state-of-the-art, web-based and other programs and technologies to enhance quality, accessibility, level of engagement, as well as resilience.

## DRAFT ACTION PLAN - ORGANIZATION

- **GOALS (1-8)**
- **Objectives** under each Goal (1.1-8.2)
- **Actions** under each Objective (1.1.1-8.1.2)  
What, who, when and how under each Action  
OPR = office with primary responsibility; **OCR** = office(s) with coordinating responsibilities

example:

### GOAL 1: LEAD BY EXAMPLE

**Objective 1.2** *Incorporate climate change resiliency into government operations at all levels, implement Lead by Example programs, measure and track performance*

**Action 1.2.3:** Develop and incorporate a set of resiliency criteria for inclusion in this year's capital planning process.

<b>OPR</b>	RIEMA/OMB	<b>OCR</b>	CRMC
Responsibility:	Jamia McDonald		
Action Officer:	Michelle Burnett		
<b>When</b>	Criteria developed by 6/1/2014 and distributed to state agencies by 7/1/2014		
<b>How</b>	Memo from OMB Director outlining the policy behind the instructions and the criteria that will be used to weight capital project requests		

## RECOMMENDATIONS: GOALS

1. Lead by Example
2. Collaborate with Local Government, Federal Government, Private Sector and Higher Education
3. Pursue Economic Opportunities
4. Accelerate Vulnerability Assessments
5. Increase Resilience through Mitigation
6. Increase Resilience through Adaptation
7. Coordinate Scientific and Technical Support
8. Communicate Effectively

## RECOMMENDATIONS: GOALS AND OBJECTIVES

### Goal 1: Lead by Example

- 1.1 **Governance** – facilitate prioritization, coordination, collaboration (resilience as decision-making principle for agencies, coordinating council, lead in governor’s office, lead in each agency, interagency teams as needed; tracking by OMB/performance management, planning and coordination support by statewide planning)
- 1.2 Incorporate resiliency (mitigation and adaptation) into **government operations** at all levels; track and **measure performance using resiliency metrics**
- 1.3 Coordinate, integrate and/or network data collection, analysis, modeling, mapping activities among state agencies (*see also Goal 7*)

### Goal 2: Collaborate with Local Government, Federal Government, Private Sector and Higher Education

- 2.1 **Cities and towns have easy access** to reliable, scientific and technical information (*see also Goal 7*)
- 2.2 All cities and towns have up to date Hazard Mitigation Plans and Local Comprehensive Plans
- 2.3 Provide **timely guidance and technical assistance**, with support from academic institutions
- 2.4 Public and private sector resources are combined to facilitate access to information, programs, assistance
- 2.5 Public and private sector expertise is combined to explore/develop **new financial strategies** to fund mitigation, adaptation and innovation

### Goal 3: Pursue Economic Opportunities

- 3.1 Combine public and private sector leadership and expertise to identify and develop economic opportunities associated with developing greater resiliency (e.g., in fields like science and technology, engineering, architecture and design, green infrastructure, renewable energy)

## RECOMMENDATIONS: GOALS AND OBJECTIVES

### Goal 4: Accelerate Vulnerability Assessment

- 4.1 Coordinate and expedite assessments for geographic areas and populations of particular concern, economic sectors, and key infrastructure (such as water, wastewater (including on-site wastewater treatment), storm water, waste management, transportation, energy, communication, healthcare, education, housing, food supply), to the extent not already assessed
- 4.2 Public and private sector leadership, expertise and resources are combined to assess vulnerabilities as well as means to mitigate them, agree on cost-effective strategies, and pursue opportunities to strengthen the RI economy through resiliency
- 4.3 Ongoing evaluation through monitoring, tracking and updating

### Goal 5: Increase Resilience through Mitigation - protect, reduce risk and create new opportunity

- 5.1 Adopt *emission reduction targets*
- 5.2 Adopt clean energy strategies that meet security, cost-effectiveness and sustainability criteria
- 5.3 Optimize *energy efficiency* in electric, thermal and transportation sectors
- 5.4 Increase use of *renewable energy and clean fuels*
- 5.5 Pursue *clean energy industry growth* opportunities
- 5.6 Address non-energy emissions from waste and agriculture
- 5.7 Promote smart land-use, biomass-retention, and other carbon-fixing measures

### Goal 6: Increase Resilience through Adaptation - protect, reduce risk and create new opportunity

- 6.1 Improve emergency preparedness and incorporate adaptation into response and recovery where possible
- 6.2 Infrastructure: water, wastewater (including on-site wastewater treatment), storm water, waste management, transportation, energy, communication, healthcare, education, housing, food supply, etc.
- 6.3 Public Health
- 6.4 Economic Assets
- 6.5 Natural Resources

## RECOMMENDATIONS: GOALS AND OBJECTIVES

### Goal 7: Coordinate Scientific and Technical Support

- 7.1 Integrate, coordinate and/or network data collection, analysis, modeling and mapping, combining expertise and resources from public and private sectors, including academic institutions for the purpose of supporting policy-development, planning, decision-making and projects
- 7.2 Ensure convenient and reliable access for state and local planners, decision-makers, researchers, students, stakeholders
- 7.3 Provide clear guidance and standards for use of scientific and technical information in planning, decision-making, applications
- 7.4 Establish forum(s) to facilitate information-sharing by policy- and decision-makers, planners, business leaders/owners, stakeholders and others, and to provide feedback loop

### Goal 8: Communicate Effectively

- 8.1 Provide *easy access to up-to-date, reliable information*
- 8.2 Develop a *partnership-based, interactive communications program* through which citizens, businesses, planners and decision-makers exchange information and ideas about the challenges and opportunities associated with climate change and resilience
- 8.3 Conduct and support *outreach, public education and training* in various sectors, at different levels

## RECOMMENDATIONS: *SELECTED ACTION ITEMS*

### LEGISLATION:

- Pass Climate Change Resilience legislation in the current session. Add consideration of climate change and resiliency to powers and duties of all state agencies, including quasi-public ones. Adopt greenhouse gas reduction targets for 2020, 2035 and 2050 of 10%, 45% and 80% below 1990 levels, respectively. Establish council to coordinate climate change and resiliency related programs and activities among state agencies; and to promote intergovernmental as well as public-private and cross-sector partnerships and collaborations, including partnerships with academic institutions. (Goals 1, 2, 3, 4, 5, 6, 7)
- Pass legislation this session (H7791/S2439) that will allow greater procurement by Rhode Island of regional renewable energy, including large scale hydro and wind energy, and improve the regional energy transmission infrastructure. (Goals 1, 3, 5, 6)
- Pass legislation (H7991/S2692) that will expand markets, create jobs for Rhode Islanders and accelerate generation and use of renewable energy by updating the licensing laws to remove barriers for local renewable energy installations by renewable energy businesses, electricians and general contractors. (Goals 2, 3, 5)
- Pass legislation (H7727/S2690) that will extend and expand the Rhode Island distributed generation growth program, which will increase local renewable energy development by 160 MW, spread out over 5 years, through a tariff-based program. (Goals 2, 3, 5)
- Approve budget article (H7133, Article 5, Section 1, Project 4) recommending a Clean Water, Open Space and Healthy Communities Bond providing new capital funding for green infrastructure projects to address storm water, dam repair and removal, protection and restoration of floodplains and natural shorelines, improving infrastructure to treat wastewater and abate water pollution, brownfield redevelopment, and other projects to increase community resilience. (Goals 2, 3, 6)

## RECOMMENDATIONS: *SELECTED ACTION ITEMS*

### Goal 1: Lead by Example

- 1.1.2 Establish climate change as decision-making principle for all state agencies, including quasi-public agencies
- 1.1.3 Designate senior-level leads in Governor's office and
- 1.1.4 in each agency
- 1.2.1 Integrate climate change into each functional element of State Guide Plan
- 1.2.3 Include resiliency criteria in this year's capital budget planning process
- 1.2.6 Benchmark energy efficiency program for state facilities and set energy use reduction targets
- 1.2.7 Revise Transportation Improvement Plan selection process to include climate change resilience criteria
- 1.3.3 Adopt statewide planning criteria for Sea Level Rise (SLR), riverine flooding, and frequency/intensity of storms
- 1.4.1 Develop strategic plan by end of 2014 to guide state for next 5 years

## RECOMMENDATIONS: *SELECTED ACTION ITEMS*

### Goal 2: Collaborate with Local Government, Federal Government, Private Sector and Higher Education

- 2.1.2 Establish a Resilient RI clearinghouse web site for (in the first instance) municipal planners
- 2.2.1 Develop planning guidance for cities and towns to complete and/or update Hazard Mitigation Plans, including recommendations for coordination with neighboring towns
- 2.3.1 Provide standard maps, criteria and guidance relating to scenarios involving sea level rise, storm surge, riverine flooding, frequency and intensity of extreme weather events, heat, air quality, water- and air-borne diseases, etc.
- 2.3.2 Provide guidance and technical resources to cities and towns to set and achieve clean energy goals, i.e. goals for reduced energy consumption, decreased carbon emissions, increased renewable energy, and environmentally-friendly transportation and land use systems; include guidance for updating and streamlining local permitting
- 2.4.1 Create or use an existing public-private partnership to deliver a one-stop, consolidated concierge service to provide homeowners as well as small businesses with easy access to energy programs
- 2.5.1 As part of Resilient Economy Collaborative, create team with experts from financial sector and Treasurer's Office, to develop plan to attract private capital to provide long-term, sustainable financing for energy efficiency and renewable energy programs and projects, as well as non-energy mitigation and adaptation projects
- 2.5.2 As part of Resilient Economy Collaborative, create team with experts from financial and utility sectors, as well as Treasurer's Office, to explore/develop new, sustainable financial strategies for public utilities, including drinking water, wastewater, storm water, etc., to cover costs associated with adaptation

## RECOMMENDATIONS: *SELECTED ACTION ITEMS*

### Goal 3: Pursue Economic Opportunities

- 3.1.1 Convene Economic Resiliency Collaborative to follow up on findings and recommendations of *Economic Intersections of Rhode Island* (Feb. 2014) and *Understanding the Opportunity and Impact of Climate Variability* (April 2014)
- 3.1.2 Make test sites available for piloting of resiliency-related innovation

*See also Actions 2.5.1, 2.5.2, 4.2.1, 5.4.1, 5.4.2, 5.5.1, 6.2.6, 6.4.1,*

## RECOMMENDATIONS: *SELECTED ACTION ITEMS*

### Goal 4. Accelerate Vulnerability Assessments

- 4.1.1 Establish one or more core, interdisciplinary, rapid assessment teams, preferably with private sector participation. Prioritize and conduct assessments on regular schedule
- 4.1.2 Conduct risk assessment along state highway corridors for storm water inundation, impacts of downed trees, utilities, etc.
- 4.1.5 Work with a science team to develop statewide heat island maps (coordinated with flood zones)
- 4.1.7 Complete RI Ports Assessment
- 4.1.8 Complete a housing vulnerability assessment for structures in coastal and riparian zones
- 4.1.9 Complete a vulnerability assessment of the State's historic and cultural resources
- 4.1.10 Require all updates of elements of State Guide Plan to consider vulnerability of populations, natural or built environment, cultural and historic resources, infrastructure etc. to impacts associated with climate change or variability and, if necessary, to include or incorporate by reference a vulnerability assessment
- 4.2.1 Establish working groups that will conduct assessments for prioritized sectors of the economy, e.g., small business, ports and marine trades, agri- and aquaculture, manufacturing, tourism. Assessments should address vulnerabilities and economic impact, options to mitigate impact, options to improve preparedness, response and recovery, and economic opportunities associated with design, engineering, technological and other skills and capabilities that can improve resilience.

## RECOMMENDATIONS: *SELECTED ACTION ITEMS*

### Goal 5. Increase Resilience through Mitigation

- 5.2.1 Finalize and adopt the update to the State Energy Plan; include Lead by Example actions such as: developing long-term targets and a plan for net zero energy usage in state facilities through a combination of energy efficiency upgrades, renewable energy and conservation effort; and mitigating transportation energy impacts by requiring reductions in Vehicle Miles Traveled (VMT) by state employees and expanding the use of alternative fuel and low emission vehicles in state fleets.
- 5.3.2 Form working group to develop sustainable funding mechanism for energy efficiency programs for unregulated fuels and for transportation sector
- 5.3.3 Develop comprehensive strategy and action plan to reduce Vehicles Miles Traveled (VMT) by end of 2014
- 5.3.4 Develop RI implementation plan for 8-state Zero Emission Vehicle (ZEV) policy and action plan
- 5.4.1 Reduce GHG emissions, increase use of renewable energy and improve resilience by expanding distributed energy (DG) program
- 5.5.1 Develop comprehensive market development strategy for stimulating the adoption of renewable thermal fuels

*(see also 2.3.2 and 2.4.1)*

## RECOMMENDATIONS: *SELECTED ACTION ITEMS*

### Goal 6. Increase Resilience through Adaptation

- 6.2.1 Ensure that public water utilities with infrastructure deemed to be highly or critically vulnerable evaluate adaptation options, including retrofitting, relocation or abandonment
- 6.2.3 Develop Transportation Asset Management Plan that includes adaptation strategies and measures to strengthen resilience of transportation system under projected SLR, storm surge, riverine flooding, wind damage and associated impact scenarios
- 6.2.4 Conduct review of current natural gas infrastructure repair and replacement program from a GHG mitigation and adaptation perspective and develop recommendations
- 6.2.6 Assess the opportunity, costs, and benefits of deploying resilient microgrids at critical infrastructure to maintain services during power outages or severe weather events
- 6.3.1 Complete Climate and Health Profile, identifying priority health impacts from climate change and recommending adaptation strategies
- 6.5.2 Develop a statewide coastal wetland monitoring, protection and restoration strategy to help lower the rate at which habitat, ecosystem resilience and shoreline protection are being lost, and to develop effective mitigation and adaptation strategies.

## RECOMMENDATIONS: *SELECTED ACTION ITEMS*

### Goal 7. Coordinate Scientific and Technical Support

- 7.1.1 Establish (or designate an existing coordinating entity to serve as) a Science and Technical Advisory and Coordinating Committee to
- (1) keep the Executive Climate Change Council or its successor coordinating council abreast of important developments in scientific and technical information relating to climate change and resiliency,
  - (2) explore and provide advice regarding opportunities to provide timely support for key policy and management decisions by aligning academic research around issues of resiliency;
  - (3) inventory the scientific and technical work being done by public and private sector entities and evaluate options to coordinate or integrate/consolidate such work in order to achieve greater efficiency, save resources, provide better services, etc.; and
  - (4) make recommendations and provide policy advice regarding priorities from its perspective, including priorities for research needs and planning thresholds.
- 7.4.1 Strengthen and expand existing collaborative monitoring program. Convene joint meeting of Science and Technical Advisory and Coordination Committee (STACC, Action 6.1.1) and Environmental Monitoring Collaborative (EMC) to develop new list of climate change related key indicators for which baseline monitoring needs to be conducted, and to evaluate capacity of EMC and its partners to conduct such monitoring.
- 7.4.2 Coordinate data collection and analysis to improve understanding of the relationship between climate-related changes in the ecosystem and the abundance and distribution of priority fish species (such as lobster, winter flounder, summer flounder, squid, and black sea bass).

## RECOMMENDATIONS: *SELECTED ACTION ITEMS*

### Goal 8. Communicate Effectively

- 8.1.1 Develop web site in partnership with nonprofit private sector that aggregates and/or links to best available information about climate change, mitigation, adaptation, resilience, best practices, etc.; and that provides forum for interactive communication (blogs, town meetings, etc.)
  
- 8.3.1 Develop interagency program that can be delivered in modules as part of state outreach initiative or in response to requests from communities, businesses, organizations

# Update on Winter Energy Prices and Regional Energy Infrastructure Initiative

May 8, 2014  
EERMC Meeting



STATE OF RHODE ISLAND

**OFFICE OF  
ENERGY RESOURCES**

# Recap from January

- **When last we spoke...**
  - New England States announce Regional Energy Infrastructure Initiative (December)
  - Seek to make strategic, coordinated, and cost-effective investments that will:
    - Meet common energy and environmental policy goals;
    - Diversify the region's energy supply portfolio;
    - Improve energy system reliability;
    - Increase the supply of cleaner, carbon-free generation;
    - Mitigate energy price volatility and long-term energy costs; and
    - Strengthen regional economic competitiveness.
  - Previous update given January 9<sup>th</sup> – less than mid-way through winter

# Heading into this past winter...

## Futures Prices in New England Soar

Source: Derived from ICE data.

<sup>^</sup>January and February 2014

<sup>\*</sup>January and February 2013

<sup>\*</sup>Power Note: Prices in \$/MWh; 2013 shows Peak Fin-swap prices and 2014 shows peak future prices. SP15 peak futures for Jan and Feb 2014 have not traded yet and the price is the average of the last bid and offer.

<sup>\*</sup>Gas Note: Prices in \$/MMBtu. Regional futures natural gas prices are the sum of the Henry Hub futures contract price plus the regional basis futures.

**P  
o  
w  
e  
r**

**G  
a  
s**

Location	2014 <sup>^</sup>	2013 <sup>*</sup>
Massachussets Hub	\$100.00	\$65.65
PJM Western Hub	\$44.35	\$48.00
Northwest (Mid-C)	\$37.37	\$34.58
Southern California (SP-15)	\$43.12	\$42.63
New England (Algonquin)	\$11.75	\$6.59
Mid-Atlantic (Dominion South)	\$3.66	\$3.78
Southern California Border	\$3.95	\$3.88
Henry Hub	\$3.87	\$3.77

- from FERC Winter 2013-2014 Energy Market Assessment Report, October 2013, slide 5.



# How did the region prepare?

## ISO-NE Winter Reliability Program:

- Winter 2012/13 was relatively mild, yet gas constraints created system reliability challenges:
  - Oil inventories were limited, averaging just 24% capacity
  - Dual-fuel units not filling tanks or testing fuel switching capabilities
  - Assets not performing sufficient maintenance, creating reliability risk
- Oil difficult to replenish in winter:
  - Fuel tanks can only hold so much oil and run so long...
  - Supply chains have shrunk as oil units have retired
  - Winter conditions can prevent shipping – from barges to highways
- Determined that an out-of-market, supplemental program was needed to get us through Winter 2013/14

# How did the region prepare?

## ISO-NE Winter Reliability Program:

- Approved by FERC; utilized competitive procurement to secure resources.
- Examined incremental need if Winter 2012/13 had been as cold as 2003/04
- Accepted bids for oil inventory and new demand response equivalent to 3.5M barrels of oil (1.95M MWh), with 56 generators participating.
- Total program costs were estimated at \$75M, but will settle around \$66M due to unit unavailability and failure to procure fuel.
- N.E. burned 2.7M barrels of program oil compared to 1.6M in inventory for Winter 2012-2013.
- Next winter...?

# How did the region prepare?

## Other actions taken:

- Accelerated day-ahead market timing to better coordinate with gas day timing
- Increased reserve requirements
- Increased communication with gas pipelines and gas industry
- Conducted regular fuel surveys – initially monthly, then twice-weekly

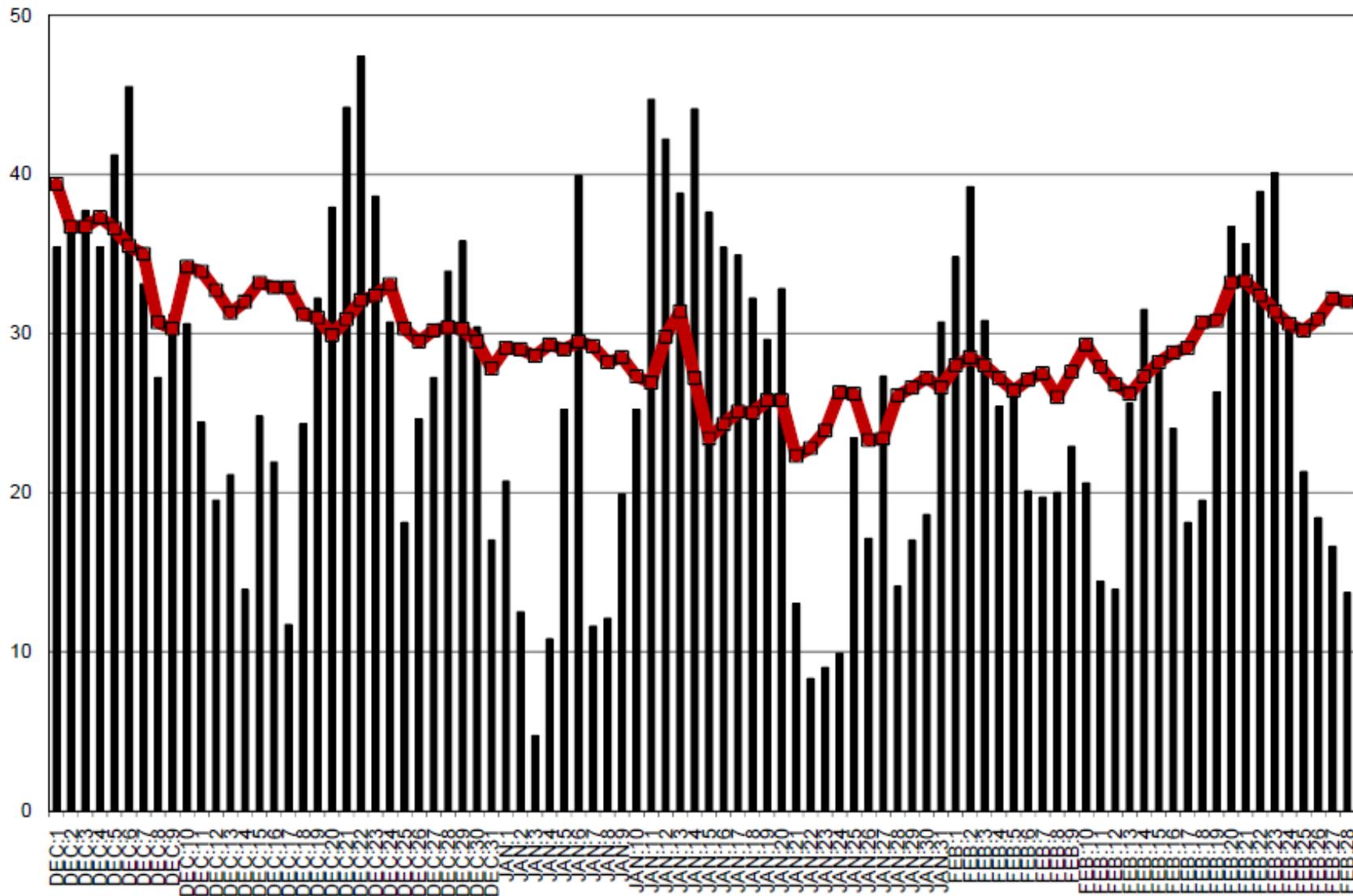


**So what actually happened?**

# Weather

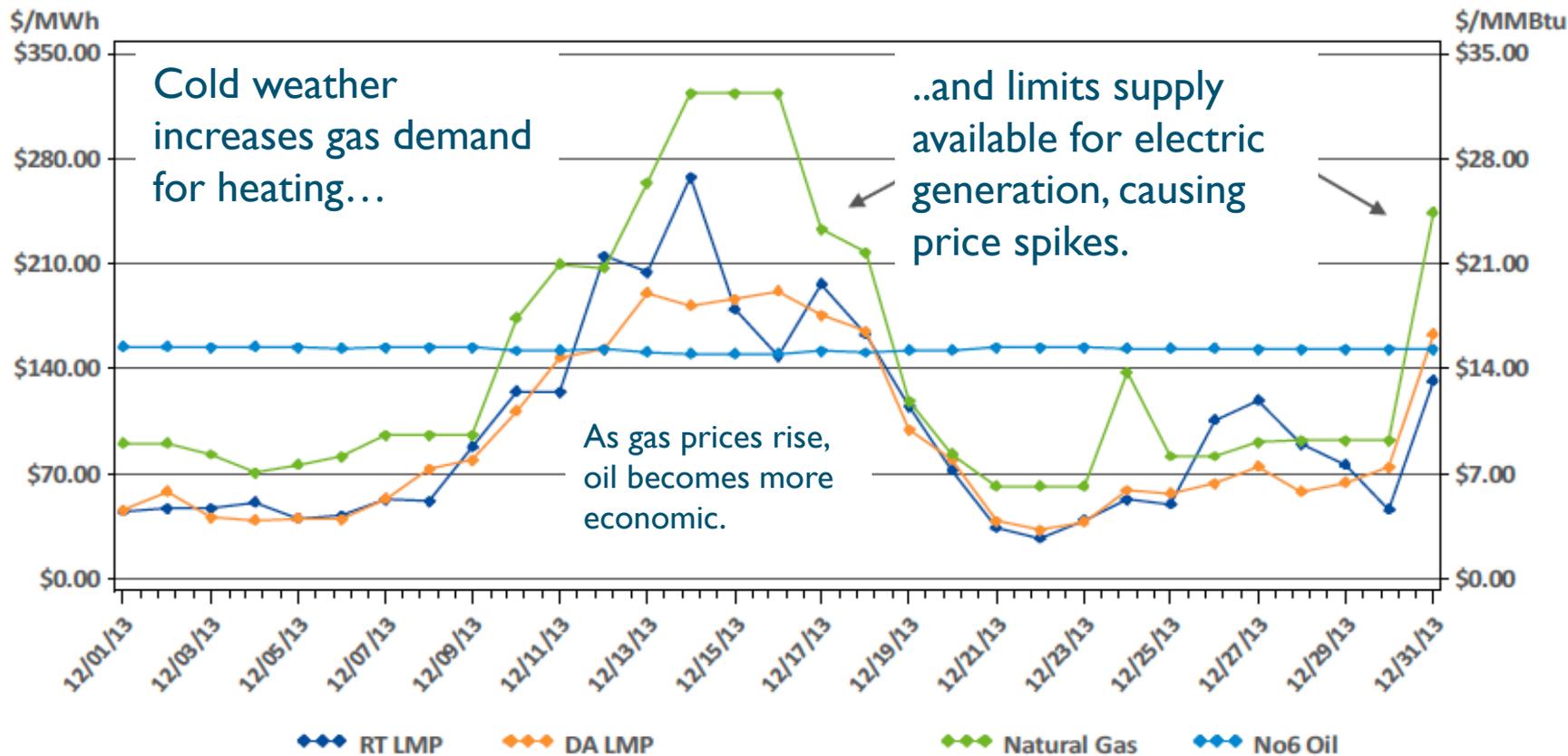
- Winter temps were 13% colder in Northeast
- Coldest winter (HDDs and ave. temp) since 1990's.
- January was among the coldest months in recent history
  - 9 days were in coldest 5% of days in past 20 years
- For stretches, daily average temps were well below historical averages
  - i.e. December 10-17; January 1-10; February 6-12
- Yet, there was no extreme cold snap

# NEW ENGLAND WINTER DAILY AVERAGE TEMPERATURES 2013/2014 WINTER AND 20 YEAR HISTORICAL AVERAGE



■ 2013/2014 Winter    ■ Historical Average

# DA and RT ISO-NE Hub Prices and Input Fuel Prices: December 1-31, 2013



Underlying natural gas data furnished by:

ICE Global markets in clear view

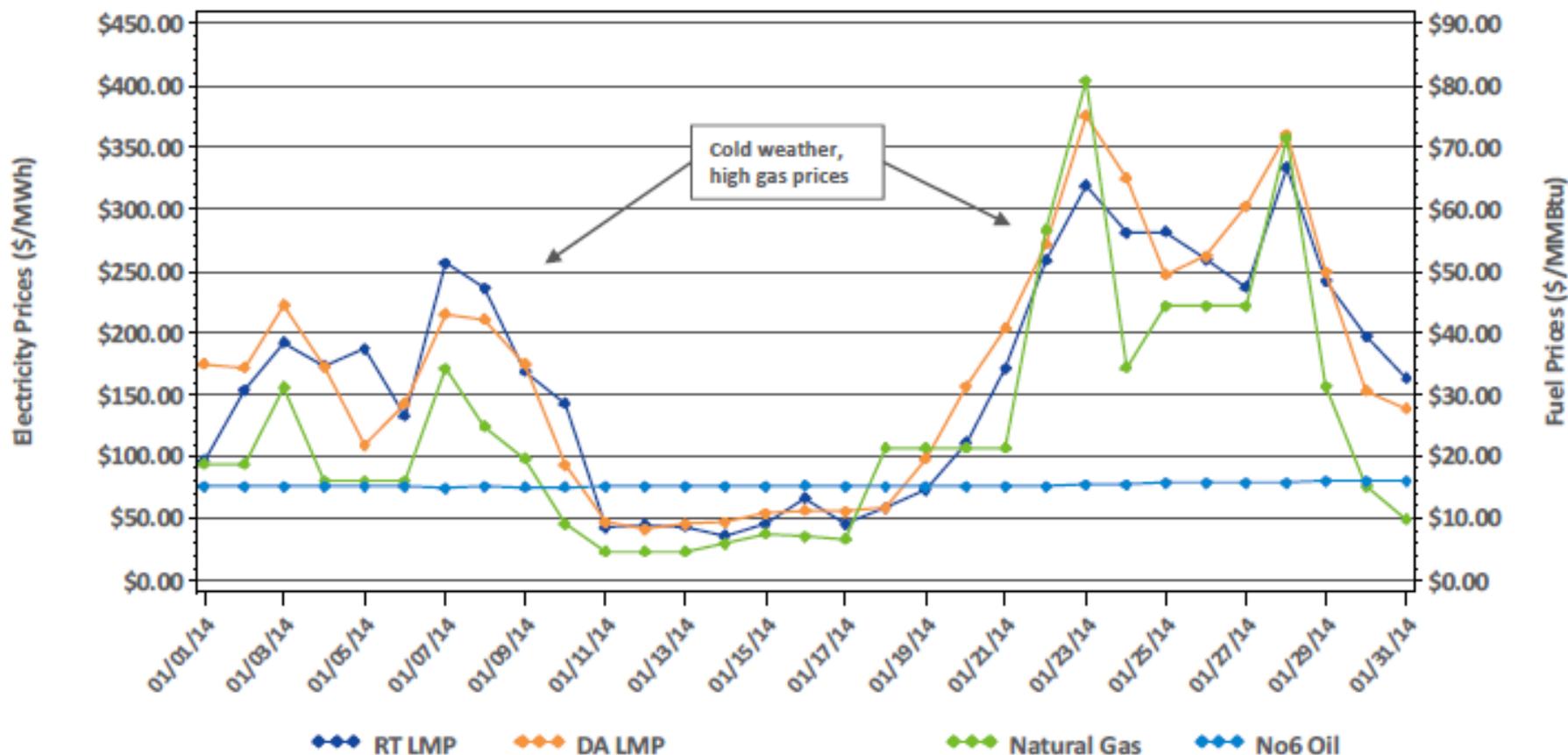
Average price difference over this period (DA-RT): \$-5.57

Average price difference over this period ABS(DA-RT): \$18.38

Average percentage difference over this period ABS(DA-RT)/RT Average LMP: 19%

Gas price is average of Massachusetts delivery points; No6 Oil is New York Spot Price from DOE's Energy Information Administration

# Daily DA and RT ISO-NE Hub Prices and Input Fuel Prices: January 1-31, 2014



Underlying natural gas data furnished by:



Average price difference over this period (DA-RT): \$5.93

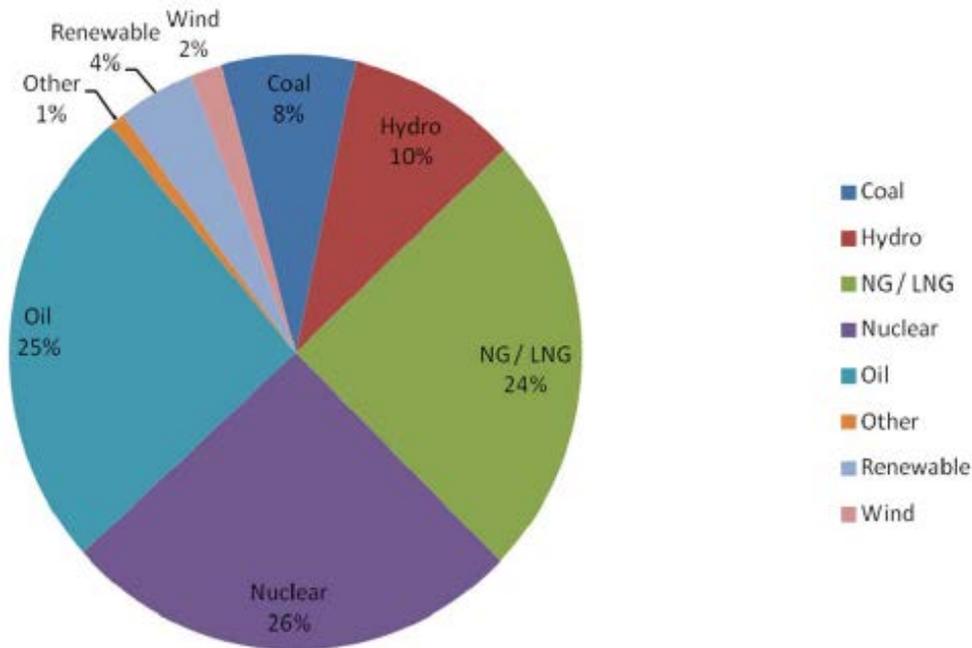
Average price difference over this period ABS(DA-RT): \$25.99

Average percentage difference over this period ABS(DA-RT)/RT Average LMP: 16%

Gas price is average of Massachusetts delivery points; No6 Oil is New York Spot Price from DOE's Energy Information Administration

# Oil and Gas Price Inversion

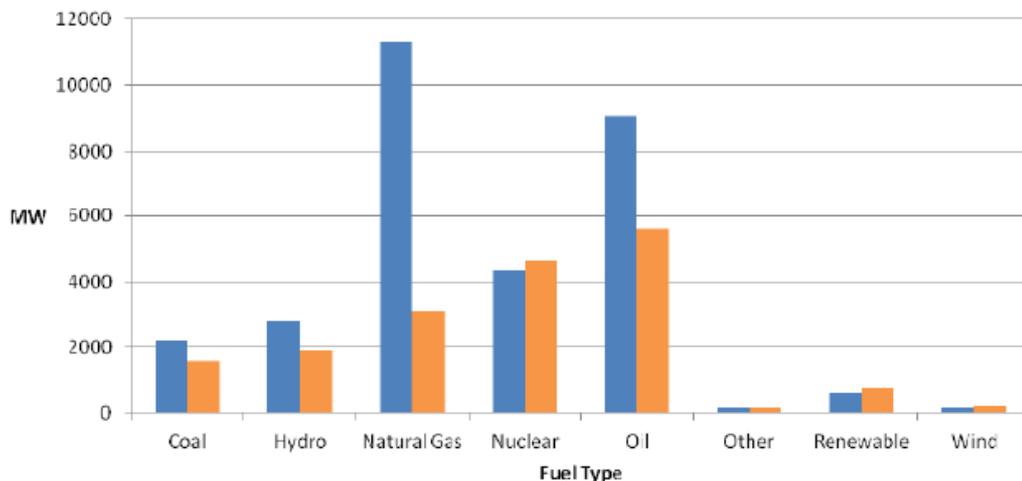
Average Fuel Use at 1800: 20 Jan-24 Jan 2014



- Natural gas pipeline constraints drove economics and system reliability needs.
- Oil “in the money”
- Gas prices exceeded oil prices 57% of winter days, compared to 18% in Winter 2012/13.

# Keeping the lights on

Total MW Generated vs. CSO by Fuel Type  
January 28, 2014 PM Peak Snapshot  
(Approx. 18,030 On-Line MW)



- While oil produced more energy and other assets approached capacity limits, gas units produced far less than capable.
- i.e. on one cold day, at peak, gas gens produced just 3,000 of 11,000 MW capacity

# Keeping the lights on

## Lessons Learned, cont.

### No. 2: Gas pipelines were constrained even without significant use by gas-fired generators

Despite the limited gas generation, the pipelines from the North were heavily utilized

- See the examples from January 22 and 23 below

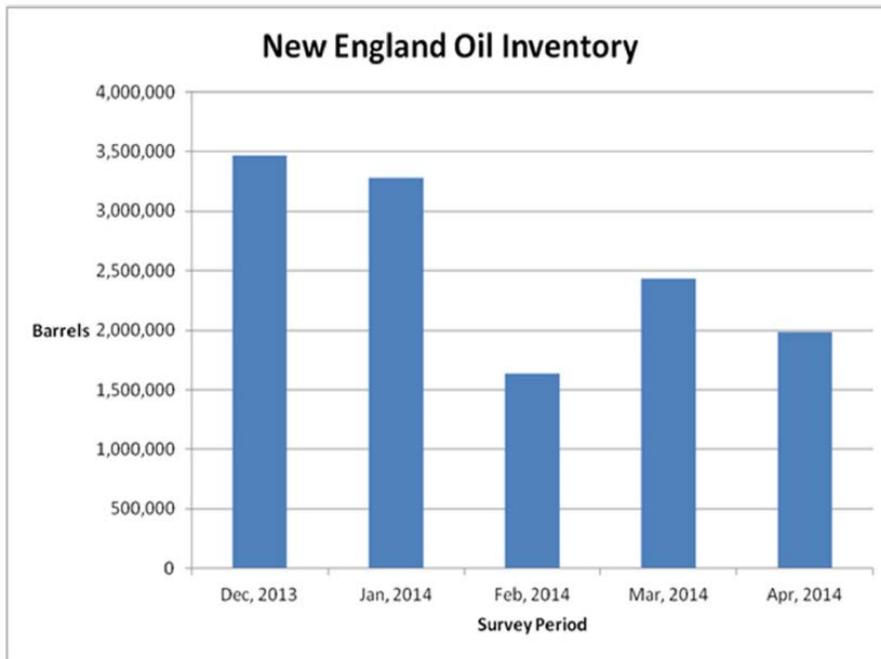
This raises questions about the viability of gas-fired operating reserves

Pipeline	Location	Operating Capacity	Scheduled 1/22/2014	Scheduled 1/23/2014
Algonquin	Stony Point	1,450,000	1,200,801	1,275,776
Tennessee	Station 245	1,062,800	1,045,901	1,048,312
Iroquois	Waddington	1,150,000	1,041,387	1,065,246
M&N	Baileyville	850,000	833,000	779,000
PNGTS	E. Hereford	168,000	216,759	217,398
Totals		4,680,800	4,337,848	4,385,732

Note: data doesn't show counterflows.

# Keeping the lights on

## By February, Oil Was Limited



- Oil inventories ran tight as ability to replenish supply was strained.
- By Feb. 3, much of remaining inventory concentrated at a few, less-reliable units
- Most oil-burning stations had less than 2 days of oil on site.

# Keeping the lights on

- Outages were also a major concern – and a critical variable in maintaining reliability.
- Large generation units were out of service during cold spells:
  - 600 MW dual-fuel unit out from mid-Dec to early-Feb
  - A large coal unit was out during late January cold spell
  - Two oil units comprising 800+ MW missed parts of both January cold spells
  - Significant number of unplanned outages; reductions to conserve oil inventory

# Keeping the lights on

- How do we keep the lights on when nuclear and coal units disappear, oil runs low, and just a quarter of gas-fired generation (normally half your system capacity) is available?
- What happens if one too many generators goes off-line? If a large transmission line sending power into New England trips?
- On behalf of ISO-NE, the Analysis Group estimated that an interruption to electric service could cost the region just under a billion dollars *per hour*.



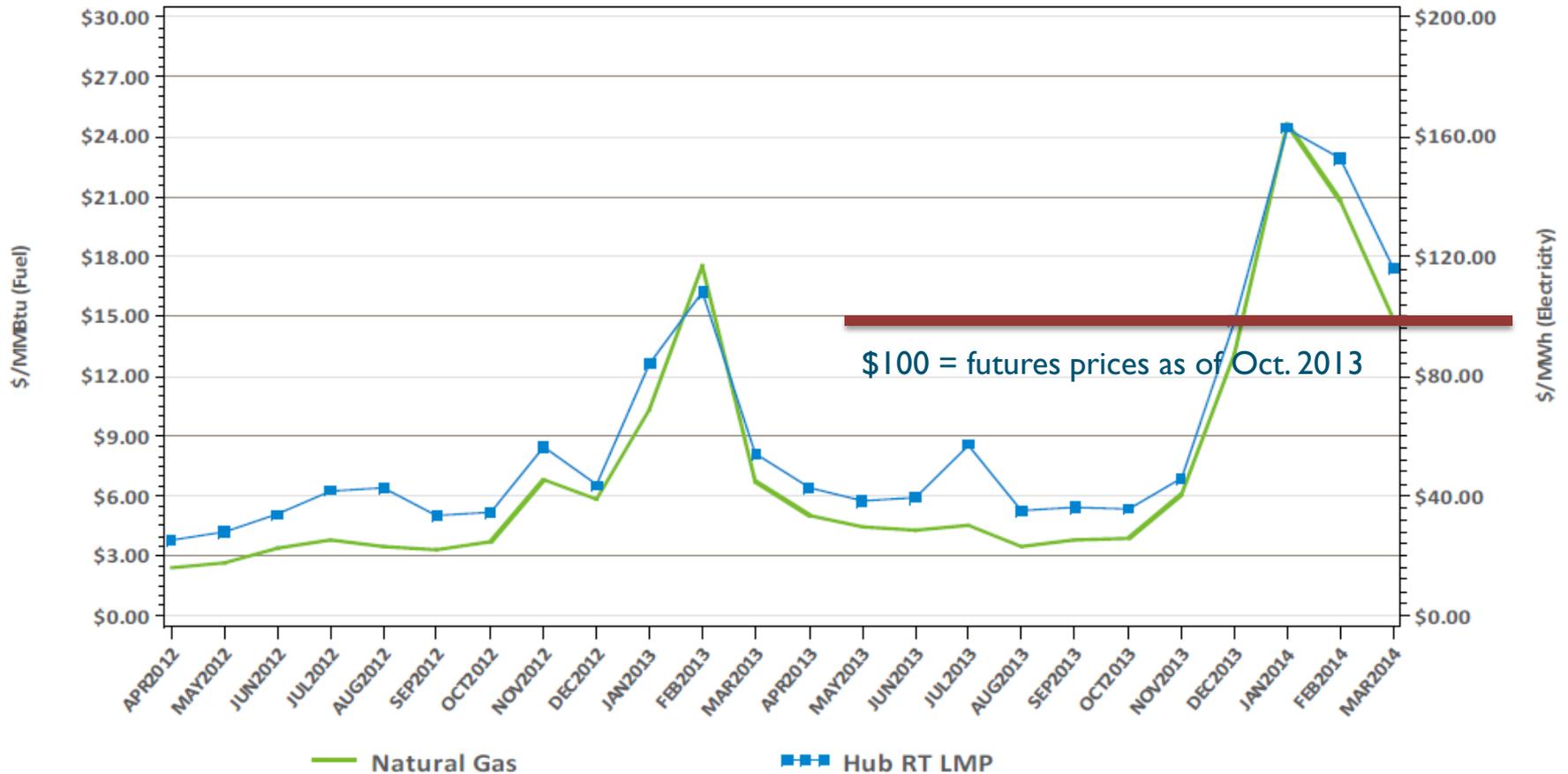
**Holding aside environmental concerns, what did this all mean for energy costs?**

# Winter Gas Prices Nearly Doubled in a Year



\* Algonquin Citygate price, December – February average

# Electricity Prices Followed Gas Prices: Monthly Average Gas Price and RT Hub LMPs



# At the wholesale level...

- **64% of average daily real-time prices were > \$100**
  - 28% in Winter 2012/13
- **For first time in a decade, average daily price exceeded \$250... not just once, but nine times!**
- **Energy market costs exceeded \$5 billion this past winter.**
  - Compare to \$5.2 billion...for **ALL** of 2012.
- **Winter average real time price (Hub) was \$132.10**
  - Up 84.4% from Winter 2012/2013 (December through March)
- **Uplift increased from \$20.4M in Dec to \$73.3M in Jan**

# RI Wholesale Energy Costs January 2014

Wholesale Component, All Hours	January 2014 (750,860 MWh)	January 2013 (722,159 MWh)	Over-the-year Change	
			\$	%
<u>Total Wholesale Rate</u> ¢/kWh per 500 kWh	18.728¢ \$93.64	9.563¢ \$47.82	+9.165¢ +\$45.83	+95.8% +95.8%
<u>Energy Only</u> ¢/kWh per 500 kWh	16.345¢ \$81.73	8.422¢ \$42.11	+7.923¢ +\$39.62	+94.1% +94.1%
<b>Total Wholesale Costs</b>	<b>\$140.6 Million</b>	<b>\$69.1 Million</b>	<b>+\$71.6 million</b>	<b>MORE THAN DOUBLE</b>

# RI Wholesale Energy Costs

Millions \$	Dec	Jan	Feb	3-mth. Winter Total
Winter 2010/11	\$71.2	\$57.8	\$42.4	\$171.4
Winter 2011/12	\$27.2	\$30.4	\$22.6	\$80.2
Winter 2012/13	\$34.3	\$69.0	\$87.6	\$190.9
Winter 2013/14	\$77.0	\$140.6	\$105.7	\$323.3

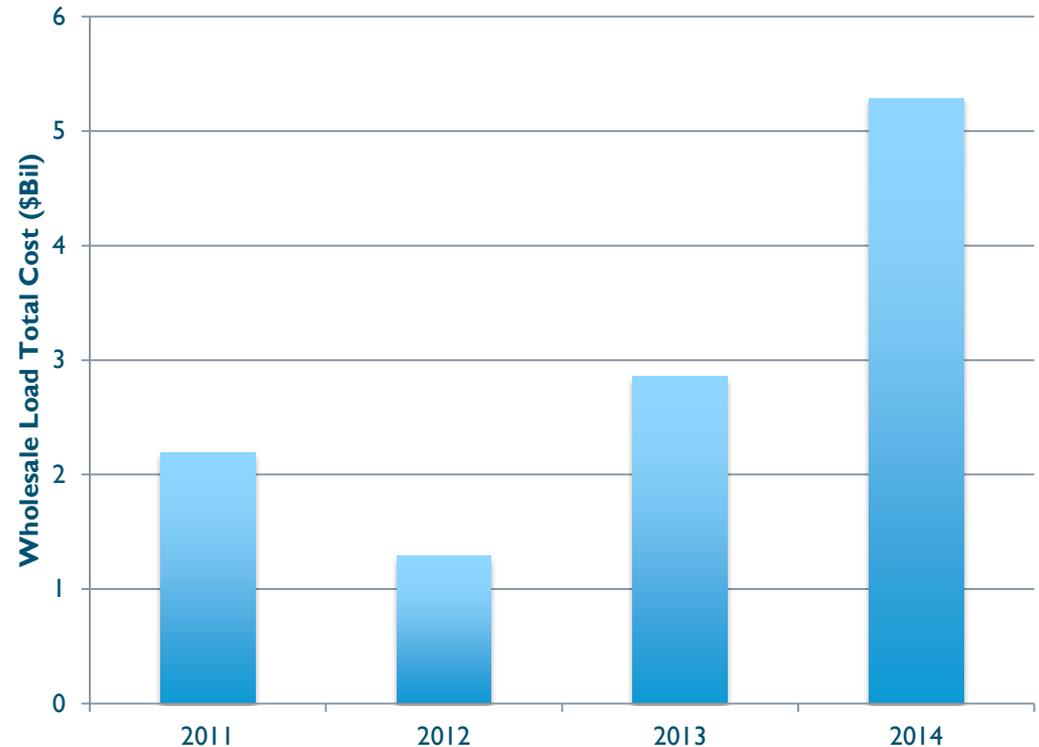
# RI Wholesale Energy Year-Over-Year Winter Costs

	Millions \$	% Change
2014 v 2013	\$ 132.4	69.4%
2014 v 2012	\$ 243.1	303.1%
2014 v 2011	\$ 152.0	88.7%

# New England Winter Market Costs

Dec-Feb, 2010-2014

New England Winter \$ Millions	
Winter 2010/11	\$ 2,194.8
Winter 2011/12	\$ 1,289.0
Winter 2012/13	\$ 2,861.9
Winter 2013/14	\$ 5,286.7



## Lessons Learned, cont.

### **No. 3: Unless the weather is mild, next winter will be more challenging given retirements**

- Non-gas generators capable of producing up to 2.6 million MWh are scheduled to retire in time for next winter
  - Salem 3 (coal)
  - Salem 4 (oil)
  - Vermont Yankee (nuclear)
- To put the retirements in perspective, the Winter Reliability Program procured *less* than these units' capability
- The retiring generators actually produced approximately 1.6 million MWh this winter

**Questions?**

# Rhode Island Energy Efficiency

---

First Quarter 2014 | National Grid

May 8, 2014

## Overview

National Grid is off to a great start for the first quarter of 2014. The Company focused on reaching new participants, including a mill projects in the Residential New Construction Program and creating new leads in the Commercial and Industrial (C&I) sector to develop a strong pipeline for 2014.

During the first quarter, National Grid launched new initiatives to create a strong foundation for reaching the 2014 energy savings targets. These included a focus on the Customer Directed Option (CDO) for the Small Business Direct Install program, where customers are able to use their own electricians and material vendors, and the launch of Upstream HVAC as part of the Large Commercial New Construction program.

National Grid also focused on improving the customer experience in the first quarter. In the EnergyWise program, full paperless invoicing was made available to all subcontractors to speed up processing time and an automated reminder call system was rolled out for customer appointments. In the Commercial and Industrial sector, the sales organization was restructured to create a 'channel sales' group to streamline the process and transaction experience for small and mid-sized customers.

Additionally, the 2013 Jobs Study was finalized in the first quarter. The study concluded that 544.73 full-time equivalent (FTE) employees had work in 2013 as a result of investments by National Grid in energy efficiency programs provided to its Rhode Island electricity and natural gas customers. The study also identified 814 companies and agencies involved in National Grid's 2013 energy efficiency programs, 78% of which were located in Rhode Island. The companies identified include those whose employees were counted in the FTE analysis, as well as additional companies who assisted customers to secure equipment rebates, for example through the New Construction or High Efficiency HVAC programs.

Based on the strong first quarter results, National Grid believes that 2014 will be a year full of innovation and success.

## 2014 Program & Initiative Updates

### Residential New Construction

- The program had a strong start during the first quarter. The program enrolled a mill building (142 units) in January that will be completed during the second quarter of 2014. The developer will enroll another mill building later in the year.
- A contractor that participated in extensive field trainings, including training HVAC contractors, framers and site supervisors will be enrolling approximately 200 market rate units into the program over the next several years.
- RI RNC was well represented at Journal of Light Construction (JLC) Live annual conference.
- Outreach meetings were scheduled with O'Hearn Architects and developers including, Neighborworks, Church Community Housing Corp, Housing Authority of Newport, and Brady Sullivan.
- Trainings held during the first quarter included "Advanced Framing" in Tiverton and "Thermal Enclosure Checklists" for Olneyville Housing.
- Equipment rebates were incorporated into the New Construction offerings, which streamlined the process for program participants.

### Income Eligible

- The Weatherization and Technical Committee met on 4/3/14 and discussed the Operation Manual; the DOE Grant; importance of getting permits in advance of work; QCI training and testing; and Knob and Tube Wiring Policy.
- Jules Junker, a 30-year leader in energy-efficient building and owner of ThermalWorks, will be conducting training with all Community Action Programs (CAP) Agencies and working with each auditor.
- During the first quarter, statewide knob & tube protocols were finalized, Hancock software was implemented, and statewide ASHRAE 62.2 2010 Implementation protocols were completed.

### EnergyWise

- Completed 1,913 audits and 767 weatherization jobs in the first quarter.
- Full paperless invoicing was made available to all subcontractors to speed up processing time.
- An automated reminder call system was rolled out for customer appointments.
- The Company hosted Moisture Charette to highlight best practices for addressing moisture in customer homes.
- The Company designed and captured customer's incoming data for tiered audits which will commence in the second quarter.
- The Company also trained independent auditors that will perform same day air sealing for tier 4 audits.

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

- The income eligible electric program is performing strongly as it already achieved 25% of the savings goal in the first quarter. Attached to this report is a case study on a specific 126-unit project in West Warwick.
- Additionally, the gas and electric programs have built a strong pipeline of projects for the remainder of 2014 and the Company remains confident that program goals will be met by the end of the year.
- The Company, along with its vendor RISE Engineering, met with Rhode Island Housing to discuss potential 2014 projects and to continue their strong relationship in marrying upcoming portfolio investments with the program incentives.
- The Company is currently developing a program enhancement to better serve more customers with deeper energy efficiency offerings and services. In addition to internal work on this topic, the Company received external technical assistance from expert firms, including the American Council for an Energy Efficient Economy (ACEEE).

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

#### Lighting:

- On March 25, 2014, an educational table was set up at the Stop & Shop in Providence to support the Stop & Shop GE Lighting Promotion.
- Over the first quarter, 13 school fundraising programs were implemented in Rhode Island.
- Lighting was promoted at the Park View Energy Fair in Cranston, which had 140 participants. Customers were particularly interested in LED lighting.

#### Appliances:

- Eight independent appliance dealers signed up for the room air conditioner midstream promotion.
- Tier 2 advanced power strips, with enhanced features like motion sensing, are now being offered through the program.
- Pool pump education began in the first quarter with the lead outreach vendor educating over 200 pool pump dealers, installers, and staff at regional seminars.
- Retailers responded positively to the dryer rebate.

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

- More than 60 Rhode Island HVAC contractors attended the 2014 Gas Heat and Cool Smart kickoff meeting held on March 20 at the Hilton Garden Inn, Warwick RI. This event provided 2014 program and training opportunities.
- During the first quarter, 217 heat pump water heater (HPWH) rebates were approved for RI customers.
- Cool Smart staff participated in a RI-based Robinson Supply dealer meeting for RI HVAC contractors. More than 150 contractors attended this annual

event. Cool Smart staff presented program information and provided a Manual J load calculation demo.

- Several trainings were also held during the first quarter, including a QIV training class at SG Torrice in Providence, where 11 techs from 7 companies participated, and a Duct Diagnostics class at Supply New England in Middletown, where 8 techs from 6 companies participated.

## Home Energy Reports

- The program is off to a great start in achieving gas savings due to the fact that small behavior changes lead to significant savings during the winter months.
- The program underwent a few major expansions beginning in early 2014. All electric customers began receiving access to the Rewards program where they can earn points for saving energy, which in turn can be redeemed for gift cards. In addition, the New Movers feature began targeted outreach to new electric and gas customers across the state.



## Community Initiative

- The Rhode Island Energy Challenge: Find Your Four! is off to an excellent start in 2014, continuing to deliver the message of energy conservation and efficiency to grassroots networks across the state.
- The Company, alongside its vendor SmartPower, held a major press event on March 18th at the Boys and Girls Club in Warwick to celebrate the achievement of North Smithfield achieving its 5% participation goal and to officially kick-off the Challenge in the City of Warwick.
- Attendees at the event included town leaders from municipalities, non-profits, local businesses, and members of the press.
- The Challenge is now active in three towns/cities (North Smithfield, Newport, and Warwick) and the Company continues working to expand it to other communities.



## System Reliability – Little Compton and Tiverton

- Program materials and processes have been reviewed and updated for 2014 implementation.

- The first edition of the “LinkUp” newsletter to all pilot-eligible customers was disseminated in late February, highlighting DemandLink offers as well as energy efficiency opportunities. An insert was created specifically for customers who have already participated in DemandLink rebates.
- An updated marketing effectiveness memo was delivered by the evaluation team at the end of the first quarter, reporting on analysis of 2012 and all of 2013.

## **Commercial & Industrial Customer Experience**

- In order to have a more streamlined process and transaction experience for our small and mid-sized customers, and to increase our reach with vendors and customers, the sales organization was restructured to create a 'channel sales' group. The main intent of this team is to work with vendors to reach to customers based on specialization.

## **Codes Initiative**

- During the first quarter, the Company and the vendor developed a schedule for all residential and commercial trainings for 2014. In addition, the Company developed a marketing strategy for a state-wide awareness plan for codes support.

## **Large Commercial New Construction**

- The program is off to a slow start, with the majority of first quarter savings coming from the upstream lighting initiative. However, the dedicated new construction sales team has developed a large number of leads and extensive marketing was conducted.
- Upstream Lighting:
  - Upstream lighting started the year above Company projections but is in-line with previous program year first quarter results.
  - The Company worked with its third party program manager to make sure there is no fundamental issue with lamp market saturation.
  - The Company also continues to gather price and savings data to facilitate the addition of two new product offerings.
- Upstream HVAC:
  - The Company worked with the Massachusetts Program Administrators to solve some of the Upstream HVAC initiative challenges.
  - The Company made progress on building customers and contractor awareness of the initiative.
  - An investigation continued into what portion of the incremental can be covered and whether increased incentives are the key to more transactions and savings.
- Street lighting:
  - On March 17th the Company filed proposed changes to the customer owned street lighting tariff and closing documents.

- A technical session will be held at the Rhode Island Public Utilities Commission on May 6th to examine metering of customer owned LED street lighting.

### **Large Commercial Retrofit**

- This program is off to a slow start in the first quarter; however, numerous leads were created to develop a strong pipeline.
- The sales team for large customers was restructured to better align with vertical markets, while the sales team for small and mid-sized customers was restructured to work with an increased pool of vendors to broaden participation.
- Several municipal applications were created in the first quarter.

### **Small Business Direct Install**

- The program is off to a good start, especially in the electric sector. The program has already achieved 20% of the electric savings goal (completed and paid) and has an additional 11% under contract. The gas sector is off to a slower start, achieving 6% of the savings goal (completed and paid) with an additional 4% under contract.
- There were several success stories from the first quarter:
  - Maccoll Field YMCA updated the exterior of its facility with all new LED fixtures, replacing metal halide and high pressure sodium fixtures that used almost four times the electricity. With estimated savings of 111,171 kWh, this upgrade will save “the Y” over \$6,500 annually.
  - JD Byrider is a pre-owned car lot with two locations in Rhode Island. RISE worked with this customer to upgrade both facilities exterior with state of the art LED fixtures. Additionally the showrooms at each location were updated with high efficiency T8 lamps. Overall these upgrades helped improve the curb appeal of these locations in Cranston and Providence. These upgrades will save this customer over 135,314kWh or \$8,086 annually.
- The Customer Directed Option (CDO) portion of the program got off to a strong start in the 1st quarter, ending the period with 21 completed projects and 46 additional customer sites in the pipeline. Projects totaling over \$250K were completed, while almost \$500K is in the pipeline. Over 1,300 MWh are represented in approved, committed, or completed project status. Facilities included some exterior LED parking lot fixture replacements in small car dealerships and shopping plazas, in addition to the conventional direct install program mix upgrades for retail stores, offices, and hospitality facilities.

### **Evaluation**

- The 2013 Jobs Study was completed and found that 544.73 full-time equivalent (FTE) employees had work in 2013 as a result of investments by National Grid in energy efficiency programs provided to its Rhode Island electricity and natural gas customers. The study also identified 814

companies and agencies involved in National Grid's 2013 energy efficiency programs, 78% of which were located in Rhode Island.

- Proposed changes to participation reporting for future efficiency plans and reports were proposed at the RI Collaborative in March and at the EERMC in April.
- All data collection for the evaluation of the 2012 RI Upstream lighting installations has been completed. The final report is expected to be completed in June.
- In addition, an evaluation of pre-rinse spray valves was started in February and a process evaluation of Income Eligible Single Family began in January.

## Upcoming Events

- A Building Operator Certification (BOC) Level I class will begin in late May at the University of Rhode Island.
- NEEP's Northeast Energy Efficiency Summit Conference will be held in Newport, RI on June 2-3, 2014. <http://neep.org/neep-events/neep-summit/index>
- 2014 Power of Place Summit, Friday, May 23, 2014 at the Rhode Island Convention Center. <http://www.growsmartri.org/2014-summit/>
- Energy Efficiency Awareness Day, Moose Café, May 27, 2014, 4-8 pm. Tiverton, RI.

**NATIONAL GRID ENERGY EFFICIENCY PROGRAMS IN RHODE ISLAND**  
**Table 1. Summary of 2014 Target and Preliminary 1st Quarter Results**

ELECTRIC PROGRAMS Sector and Program	(1)	(2)	(3)	(4) Customer Participation (5) (6)			(7) Implementation Expenses (\$ 000) (8) (9)			(10)	(11)
	Energy Savings (Annual MWh)			Approved Target	Year To Date	Pct Achieved	Budget	Year To Date	Pct Achieved	Lifetime savings, MWh	\$/kWh
<b>Commercial and Industrial</b>											
Large Commercial New Construction	27,472	2,712	9.9%	2,192	459	20.9%	\$7,811.0	\$1,212.6	15.5%	30,225	\$ 0.040
Large Commercial Retrofit	124,275	5,123	4.1%	833	100	12.0%	\$25,218.1	\$1,431.9	5.7%	62,387	\$ 0.023
Small Business Direct Install	21,170	4,267	20.2%	1,510	271	17.9%	\$12,645.5	\$1,585.4	12.5%	44,367	\$ 0.036
Community Based Initiatives - C&I							\$41.5	\$10.9	26.3%		
Commercial Pilots							\$364.1	\$0.0	0.0%		
Comprehensive Marketing - C&I							\$150.2	\$13.2	8.8%		
Finance Costs							\$1,000.0	\$1,000.0	100.0%		
<b>SUBTOTAL</b>	<b>172,917</b>	<b>12,101</b>	<b>7.0%</b>	<b>4,535</b>	<b>830</b>	<b>18.3%</b>	<b>\$47,230.3</b>	<b>\$5,254.1</b>	<b>11.1%</b>	<b>136,980</b>	<b>\$ 0.038</b>
<b>Income Eligible Residential</b>											
Single Family - Income Eligible Services	3,967	818	20.6%	2,450	588	24.0%	\$7,207.0	\$1,135.6	15.8%	10,358	\$ 0.110
Income Eligible Multifamily	2,113	538	25.5%	3,520	1,376	39.1%	\$2,092.3	\$391.0	18.7%	6,183	\$ 0.063
<b>SUBTOTAL</b>	<b>6,080</b>	<b>1,356</b>	<b>22.3%</b>	<b>5,970</b>	<b>1,964</b>	<b>32.9%</b>	<b>\$9,299.3</b>	<b>\$1,526.6</b>	<b>16.4%</b>	<b>16,541</b>	<b>\$ 0.092</b>
<b>Non-Income Eligible Residential</b>											
Residential New Construction	631	112	17.7%	458	85	18.6%	\$910.3	\$184.0	20.2%	1,426	\$ 0.129
ENERGY STAR® HVAC	726	369	50.8%	1,946	517	26.6%	\$919.7	\$300.0	32.6%	4,488	\$ 0.067
EnergyWise	7,674	3,066	40.0%	7,800	1,913	25.2%	\$6,448.4	\$1,907.2	29.6%	30,660	\$ 0.062
EnergyWise Multifamily	2,888	614	21.3%	4,500	1,669	37.1%	\$2,419.8	\$470.6	19.4%	7,037	\$ 0.067
ENERGY STAR® Lighting	35,731	4,021	11.3%	247,240	32,848	13.3%	\$7,389.7	\$709.1	9.6%	36,463	\$ 0.019
Residential Consumer Products	3,639	966	26.6%	13,285	6,559	49.4%	\$2,426.0	\$359.5	14.8%	6,917	\$ 0.052
Home Energy Reports	25,028	5,571	22.3%	227,600	200,482	88.1%	\$2,445.2	\$1,717.1	70.2%	5,571	\$ 0.308
Energy Efficiency Educational Programs							\$50.7	\$0.0	0.1%		
Residential Products Pilot							\$248.8	\$1.2	0.5%		
Community Based Initiatives - Residential							\$226.4	\$72.8	32.2%		
Comprehensive Marketing - Residential							\$581.9	\$11.4	2.0%		
<b>SUBTOTAL</b>	<b>76,317</b>	<b>14,719</b>	<b>19.3%</b>	<b>502,629</b>	<b>244,073</b>	<b>49%</b>	<b>\$24,066.9</b>	<b>\$5,733.0</b>	<b>23.8%</b>	<b>92,561</b>	<b>\$ 0.062</b>
<b>Regulatory</b>											
EERMC							\$816.7	\$0.0	0.0%		
OER							\$565.6	\$47.1	8.3%		
<b>SUBTOTAL</b>							<b>\$1,382.3</b>	<b>\$47.1</b>	<b>3.4%</b>		
<b>TOTAL</b>	<b>255,314</b>	<b>28,176</b>	<b>11.0%</b>	<b>513,134</b>	<b>246,867</b>	<b>48.1%</b>	<b>\$ 81,978.9</b>	<b>\$ 12,560.8</b>	<b>15.3%</b>	<b>235,724</b>	<b>\$ 0.053</b>
<b>System Reliability Procurement</b>							<b>\$ 279.2</b>	<b>\$36.8</b>	<b>13.2%</b>		

GAS PROGRAMS Sector and Program	(1)	(2)	(3)	(4) Customer Participation (5) (6)			(7) Implementation Expenses (\$ 000) (8) (9)			(10)	(11)
	Energy Savings (MMBtu)			Approved Target	Year To Date	Pct Achieved	Approved Budget	Year To Date	Pct Achieved	Lifetime savings, MMBtu	\$/Lifetime MMBtu
<b>Commercial and Industrial</b>											
Large Commercial New Construction	31,863	3,485	10.9%	192	26	13.5%	\$2,096.7	(\$86.6)	-4.1%	74,474	\$ (1.163)
Large Commercial Retrofit	121,592	4,388	3.6%	606	14	2.3%	\$3,672.5	\$292.3	8.0%	47,797	\$ 6.116
Small Business Direct Install	10,496	582	5.5%	316	23	7.3%	\$545.9	\$10.4	1.9%	4,147	\$ 2.516
Commercial & Industrial Multifamily	5,511	593	10.8%	745	224	30.1%	\$488.8	\$34.9	7.1%	10,727	\$ 3.253
Commercial & Industrial Pilots							\$398.8	\$0.4	0.1%		
Comprehensive Marketing - C&I							\$173.6	\$7.9	4.6%		
Community Based Initiatives - C&I							\$30.0	\$10.9	36.4%		
Finance Costs							\$200.0	\$200.0	100.0%		
<b>SUBTOTAL</b>	<b>169,463</b>	<b>9,046</b>	<b>5.3%</b>	<b>1,859</b>	<b>287</b>	<b>15.4%</b>	<b>\$7,606.4</b>	<b>\$470.3</b>	<b>6.2%</b>	<b>137,146</b>	<b>\$ 3.429</b>
<b>Income Eligible Residential</b>											
Single Family - Income Eligible Services	6,395	1,124	17.6%	400	79	19.8%	\$2,584.0	\$394.8	15.3%	22,480	\$ 17.564
Income Eligible Multifamily	16,824	354	2.1%	2,200	51	2.3%	\$1,967.6	\$22.7	1.2%	4,954	\$ 4.586
<b>SUBTOTAL</b>	<b>23,219</b>	<b>1,478</b>	<b>6.4%</b>	<b>2,600</b>	<b>130</b>	<b>5.0%</b>	<b>\$4,551.5</b>	<b>\$417.6</b>	<b>9.2%</b>	<b>27,434</b>	<b>\$ 15.221</b>
<b>Non-Income Eligible Residential</b>											
EnergyWise	30,120	7,971	26.5%	2,000	668	33.4%	\$4,820.5	\$1,160.1	24.1%	159,420	\$ 7.277
Energy Star® HVAC	20,344	6,542	32.2%	2,584	578	22.4%	\$1,996.8	\$460.2	23.0%	108,121	\$ 4.257
EnergyWise Multifamily	9,256	2,261	24.4%	2,000	459	23.0%	\$1,314.7	\$137.8	10.5%	29,919	\$ 4.607
Home Energy Reports	73,877	33,212	45.0%	180,000	116,989	65.0%	\$468.3	\$207.5	44.3%	33,212	\$ 6.248
Residential New Construction	3,683	480	13.0%	392	43	11.0%	\$608.6	\$37.6	6.2%	11,995	\$ 3.136
Residential Products Pilot							\$136.2	(\$2.5)	-1.9%		
Comprehensive Marketing - Residential							\$139.7	\$1.3	0.9%		
Community Based Initiatives - Residential							\$44.4	\$10.4	23.4%		
<b>SUBTOTAL</b>	<b>137,281</b>	<b>50,465</b>	<b>36.8%</b>	<b>186,976</b>	<b>118,737</b>	<b>63.5%</b>	<b>\$9,529.3</b>	<b>\$2,012.4</b>	<b>21.1%</b>	<b>342,668</b>	<b>\$ 5.873</b>
<b>Regulatory</b>											
EERMC							\$245.4	\$0.0	0.0%		
OER							\$163.6	\$13.6	8.3%		
<b>SUBTOTAL</b>							<b>\$409.0</b>	<b>\$13.6</b>	<b>3.3%</b>		
<b>TOTAL</b>	<b>329,963</b>	<b>60,990</b>	<b>18.5%</b>	<b>191,435</b>	<b>119,154</b>	<b>62.2%</b>	<b>\$ 22,096.2</b>	<b>\$ 2,913.9</b>	<b>13.2%</b>	<b>507,247</b>	<b>\$ 5.744</b>

NOTES  
(1)(4) Targets from Docket 4451 - Attachment 4, Table E-6 (electric) and Attachment 5, Table G-6 (gas).  
(2) EnergyWise electric and gas savings are estimates from RISE Engineering  
(3) Pct Achieved is Column (2)/ Column (1).  
(6) Pct Achieved is Column (5)/ Column (4).  
(7) Approved Implementation Expenses from Docket 4451, Attachment 4 Table E-4 (electric) and Attachment 5 Table G-5 (gas).  
(8) Year To Date Implementation Expenses are net of evaluation expenses.  
Small Business Direct Install Electric Includes OER funds spent in Quarter 1.  
Large Commercial New Construction Gas shows negative spend due to a charge reversal from the 2012 program year.  
(9) Pct Achieved is Column (8)/ Column (7).  
(11) \$/lifetime kWh = Column (8)/Column (10); \$/lifetime therm = Column (8)\*1000/Column (10)\*10  
System Reliability Procurement targets from Docket 4367, not included in Implementation Expenses Total  
System Reliability Procurement targets and actuals do not reflect statewide EE amounts leveraged

**West Warwick Housing Authority-62 Roberts St Apts -126 units (Income Eligible elec and Gas)**

*\$112,213.00 in electrical measures installed, estimated 195,798 annual Kwh saved*

*\$855.00 in gas measures installed, estimated 622 annual therms saved*

- LED 2 x2 troffers installed throughout the common areas (elec)
- low flow showerheads and aerators to unit kitchens and baths (gas)
- CFL screw-in lamps for unit misc. portable lamps and fans (elec)
- Smart strips for each unit (elec)
- Variable Frequency Drives installed to hot water heat distribution system motors (elec)
- LED wall pack fixtures for common exterior building lighting (elec)
- vending misers installed to on-site vending machines (elec)
- LED exit signs (elec)



# Memorandum

---

To: Energy Efficiency & Resource Management Council  
From: VEIC/Optimal Energy Consultant Team  
Date: May 8, 2014  
Subject: 3-Year Plan – potential impact issue

## Considerations Regarding Gas System Expansion and Energy Efficiency

This Memorandum is an initial discussion of issues that are emerging relative to the role of Natural Gas use, expansion and system upgrades in Rhode Island. It is intended as a “starting point” for discussion with the Energy Efficiency and Resource Management Council (EERMC) and the Office of Energy Resources (OER). It is not intended as an argument for a position, but as an invitation to explore further a number of issues. These issues raise the possibility that certain approaches to investment policy in Rhode Island might be able to mitigate future risks to Rhode Island ratepayers.

### Background:

There are several important issues that should be considered in relationship to each other as Rhode Island and National Grid pursue development of “least cost procurement” (LCP) plans for the 2015-17 three-year planning cycle, particularly with regard to natural gas:

1. **Natural Gas (generally) has recently become a relatively low cost fuel, particularly due to new sources of supply now being tapped by new (“fracking” and drilling) technologies.**
  - a. Gas is increasingly being used in New England as the generation fuel of choice to replace oil, coal and nuclear facilities that are cutting back or retiring. In general, its price and relatively lower emissions (particulate and CO<sub>2</sub>) are regarded as beneficial.
  - b. Gas is an attractive option to consumers to displace more costly and volatile oil, propane and kerosene. Rhode Island is actively extending gas service to new customers. Other states like CT appear to have very aggressive line extension/conversion plans in place.
  - c. National Grid has a funding mechanism that helps promote extension of gas service to new customers, and it is aggressively seeking to ensure through its energy efficiency efforts that both combustion efficiency and thermal efficiency are improved as that service is extended.

2. **National Grid also has a reasonably aggressive plan to replace leaky and aging gas infrastructure.** This is an issue in a number of jurisdictions and is not unique to RI. This provides three benefits:
  - a. Safety
  - b. Reduction of lost gas through leakage (thus lost sales)
  - c. Reduction of greenhouse gas emissions. Methane (CH<sub>4</sub>) is a more powerful greenhouse gas than CO<sub>2</sub>.
  - d. The proceeding in which this investment decision has been made has not been part of the discussion about LCP though one might argue that it has aspects of being an efficiency strategy as well as a reliability and safety effort. (Reduction of waste, climate benefits, customer benefits). Our understanding is that this is a 19-year investment effort.
  - e. We are not aware of what cost/benefit analysis has been done for this investment decision (what value for escaped gas? What climate benefits from avoiding escaped gas?) and need to understand more about the scale and pace of this effort.
  
3. **There are growing winter peak demand and price issues.** While Gas costs are low for much of the year, we are all aware that there is an increasing problem in Southern New England during the winter cold periods with constraints on the gas transmission capacity as gas is demanded both for (increasing) direct customer use and (increasing) gas-fired generation for electric production. This topic is the subject of much analysis, debate and discussion about how to resolve it...but clearly efforts that can reduce and manage gas *and* electric use during these periods help mitigate the level of the problem. New gas transmission, new sources of electric supply and delivery, and aggressive efficiency and demand/load management and fuel shifting are all on the table. In 2014-15 the use of oil generation during the period of constraint is part of an interim supply strategy. New England Governors are actively involved in addressing this problem.
  
4. **There is an issue as to whether natural gas prices will remain low, and what level they might rise to even after transmission constraints to southern New England are addressed.** It is uncertain whether the current gas prices will stay as low as they currently are. Environmental mandates, rapid expansion of demand, potential for liquification and export, could all drive prices up over time....even as the seasonal constraints into southern New England are addressed. There is at least some exposure to risk associated with rapid build-out of gas distribution service when future costs may not stay in the current low range. Regulators may succeed in getting new pipeline into capacity into Southern New England to help lower costs (and may indeed mitigate

shockingly high winter constraint costs). But the question at least needs to be asked about what the price will be after that capacity is in place. Could baseline prices rise back to more historic levels, meaning that net savings from gas conversions might be less than currently expected?

5. **Are New Technologies becoming competitive with gas service?** New and increasingly efficient heat pump technologies appear in some cases to be competitive with gas heat right now. As these technologies improve in Coefficient of Performance (COP) and gas prices (potentially) increase there is at least the potential for heat pumps to eat into gas sales. This is true in part because heat pumps also double as very efficient summer cooling devices. Once one is installed in a customer facility the likelihood of its use in heating mode for all but periods of peak demand could increase. If natural gas is in that facility, this seasonal use of electricity for heating could significantly reduce gas consumption and increase the likelihood that its use would be for the colder periods of peak demand. This in turn could significantly affect revenues and drive toward higher costs for peak usage.
6. **Gas efficiency programs continue to be effective and beneficial.** It is clear that gas energy efficiency programs as they continue to evolve help address customer costs, climate change emissions, and provide system benefits.

#### Questions for Consideration:

It may be appropriate to consider all of these dynamics as we come to the three-year planning process. The following questions deserve consideration:

1. **Should Regulators and National Grid develop an integrated strategic approach to electric and natural gas deployment?** Though it is beyond what has conventionally been done in LCP planning, it may be appropriate to consider the factors listed above as we develop the three year Plan for Rhode Island. For instance:
  - a. Should Rhode Island pause and examine the potential costs and benefits of relevant technologies as the foundation for taking another look at current policies?
  - b. Should National Grid consider a new standard for extending gas service that slows that process and limits increased demand on the gas system during the duration of recurring winter constraints?
  - c. Are the benefits of reduced gas use adequately accounted for in the current TRC? Avoided costs may not account for the now recurring winter price spike. They do not account for climate effects.

- d. Is there a viable potential to provide customers with thermal efficiency through a combination of whole building efficiency and heat pump technologies?
  - e. From a system perspective, Is it better to have customers who now have delivered fossil fuel convert to heat pumps for better summer cooling efficiency, and for most winter usage, using the retained fossil fuel system as backup during the cold winter periods....this would at least moderate the growth in demand for gas during those periods, and it mimics at the customer level, the current approach to addressing the winter peak at the generation level.
2. **Should Rhode Island adopt a “Risk mitigation” approach to Gas Investment for the next five (?) years?**
- a. This strategy would also allow RI to evaluate the performance and cost-effectiveness of heat pumps as a heating strategy for RI. We need to assess their efficiency, their cost, their performance, and their overall benefits including cooling. We need to consider whether they lend themselves to load management strategies in an efficient and durable manner.
  - b. If heat pumps really do emerge as a competitor to Gas service it would be good to know that before, rather than after lines have been built, and usage starts to decline.
3. **Should Rhode Island, in the interim, accelerate the replacement of leaking infrastructure with a thorough analysis of all the costs and benefits of such investment?** Clearly the savings from these replacements should be fully accounted for...and the costs and risks of deferring replacement should be well understood.

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

(a) The commission shall establish not later than June 1, 2008, standards for system reliability and energy efficiency and conservation procurement, which 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, which is reliable and is cost-effective, with measurable, net system benefits;

(iii) Demand response, including, but not limited to, distributed generation, back-up generation and on-demand usage reduction, which shall be designed to facilitate electric customer participation in regional demand response programs, including those administered by the independent service operator of New England ("ISO-NE") and/or are designed to provide local system reliability benefits through load control or using on-site generating capability;

(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.

(2) Least-cost procurement, which shall include procurement of energy efficiency and energy conservation measures that are prudent and reliable and when such measures are lower cost than acquisition of additional supply, including supply for periods of high demand.

(b) The standards and guidelines provided for by subsection (a) shall be subject to periodic review and as appropriate amendment by the commission, which review will be conducted not less frequently than every three (3) years after the adoption of the standards and guidelines.

## ENERGY EXPO 2014 OVERVIEW

### RESULTS

- 20,000 people attended - 45% increase from last year
- 95 energy companies exhibited
- 75+ people participated in RI Energy Leaders Recognition Event
- 3 members of the Congressional Delegation participated in Recognition Event
- 337 people signed up for home energy assessments
- 193 people signed up for the RI Energy Challenge: Find Your Four!
- 1,521 Green Box kits of high efficiency lighting were sold
- 300+ smart power strips were sold
- \$5,000 Home Energy Makeover was won by Kelly Rodgers of Chepachet, RI
- 710,000 coupons were distributed through National Grid bills - 1,300+ coupons were redeemed
- \$100,000 went toward paid advertising for entire Home Show
- 550 free tickets were distributed to EnergyWise customers – 300 were redeemed
- 33 people signed up for the OER mailing list
- Bob will send out survey results when they are ready

### SPONSORSHIP BREAKDOWN

(\$50,000 from EERMC; \$50,000 from National Grid)

Total Media Campaign of \$205,750

#### ADVERTISING

Energy Expo specific ads	\$27,100.00
Energy Expo inclusion in overall ad campaign (15%)	\$20,350.00
PR & promotions (15%)	\$10,500.00
Printed coupon mailings specific to NGRID	\$4,200.00
Show signage and balloons	\$1,500.00
Energy Makeover prize	\$5,000.00
Marketing allocation - website, production, social media, etc.	\$10,000.00
	<b>\$78,650.00</b>

#### OPERATIONAL COSTS

Energy Expo Specific Expenses: A/V, parking, furniture, electric, etc.	\$6,000.00
Overhead: rent, insurance, security, ticketing, promoter, etc.	\$56,250.00
Printing: tickets, coupons, programs, flyers, etc.	\$9,000.00
	<b>\$71,250.00</b>

<b>TOTAL ENERGY EXPO VALUE</b>	<b>\$149,900.00</b>
--------------------------------	---------------------

## ENERGY EXPO 2014 DEBRIEF NOTES

### GOALS

- Questions:
  - Were these the right goals? Should next year's be the same?
  - To what extent did we achieve them?
- Goals:
  - Increase the awareness and use of energy saving practices, products, and services
    - More local energy companies would have helped with this goal
    - People wanted information on what they could do, not necessarily who they should go to
    - Energy tips materials at OER – PP&L had an efficiency booklet - DOE has good booklet too that we can get for next year
    - Lots of EV questions - people will ask about what's on display
    - A lot of people came with specific questions
    - Could Grid make a one-pager on home energy assessments for OER table?
    - Should we make an EERMC handout?
  - Elevate the profile of Rhode Island energy policies and programs
    - Energy prices will be increasing so we need to continue this type of outreach
    - A more robust education area would help with this
    - Can work on messaging and materials on policies and programs
  - Support the development of Rhode Island's green economy
  - Facilitate cross-sector networking among consumers, businesses, entrepreneurs, non-profits, government agencies, and other institutions
    - Have a networking event for energy professionals

### PRO'S & CON'S

- Questions:
  - What worked about each component?
  - What could use improvement?
- Components:
  - Home Show partnership
    - Both parties were thrilled with the partnership - win-win
    - Partnering with the Home Show was a good call and certainly made the planning easier
  - Exhibitors
    - Need to make this more accessible to smaller companies, but need to be careful with equity issues
    - Next year do a pavilion style with smaller or combined spaces and offer companies lower fee
    - Maybe ask those vendors to contribute to the educational aspects by participating in a seminar or doing a demo
    - Also starting earlier will give them more time to put a display together if needed
    - Show them how successful 2014 was
    - Exhibitor scavenger hunt next year

- Balloons seemed like a good idea, did they work? Surveys will tell us
  - Make sure to invite Grid vendors from Annual Report
  - Booth staffing for small organizations was tough – was also last-minute
    - Get them to commit and schedule staffing sooner
  - Will be easier to get renewable energy companies next year because of the REF program
  - It was great to see the number of residents who signed up for the home energy assessments. It might be nice to translate those numbers into GHG emissions reductions; this is something the public might be interested in or a possible way to get people hooked for next year. Something like "the Expo will help to reduce X # of emissions...". This isn't a big stretch because we did the same for our National Grid Community Initiative Pilot in Warwick and SK.
- Awards event
  - Rachel would like to hand this component off to someone else at OER – Chris volunteered
  - Start planning earlier
  - Got success stories out but didn't get any press - try for Thursday or Friday
  - Should try to have the new Governor announce something big
- Seminars
  - Attendance could have been better
  - Poster should be easier to read and titles should be catchier
  - Do a better job of getting the word out on the floor – little flyers to hand out?
  - Make area smaller
  - Look at topics – try to cater to what people want to learn about rather than what Grid wants to talk about
  - Alternative home heating options was most popular
  - Action oriented, what do I do, how do I do it
  - Seminars were too formal – take away stage – make more like interior design seminars - smaller
  - People also go to move around and see everything, not sit and learn
  - Ask speakers to send us their slides in advance
- Marketing & attendance
  - Home Show loved doing coupons as bill inserts – 1300 redeemed is really good
  - Ticket giveaways – start earlier
  - Lots of people came for the energy component
- Vehicle display
  - More next year would be good
  - Will be easier to get more when we show them the promotion that Smart Car got
  - National Grid has fleet of AFV's that can be used
- Raffles
  - Better coordination needed
  - Do winner profile – what work was done and who benefited from this?
- Demo house
  - Home Show really liked featuring energy aspects of the home and partnership with RINLA – brought a "green" aspect to the show
  - We should be more involved with the house and brochure next year
  - Mini split should have been showcased

- Could we put the energy area near the house?
- Kids' Activities
  - Poster or art contest would help get people there – partner with NEED schools
  - NEED area needs work – signs that explain what it is – make it look more formal
  - Could Barbara coordinate the kids component of the expo?
- General/other
  - Planning needs to start sooner
  - Can we move the energy area closer to the center?

#### **NEXT YEAR**

- March 5-8, 2015
- National Grid has committed to being a sponsor in 2015
- Next Step: Vote on EERMC sponsorship