

# Rhode Island State Energy Plan

## Advisory Council Meeting #3

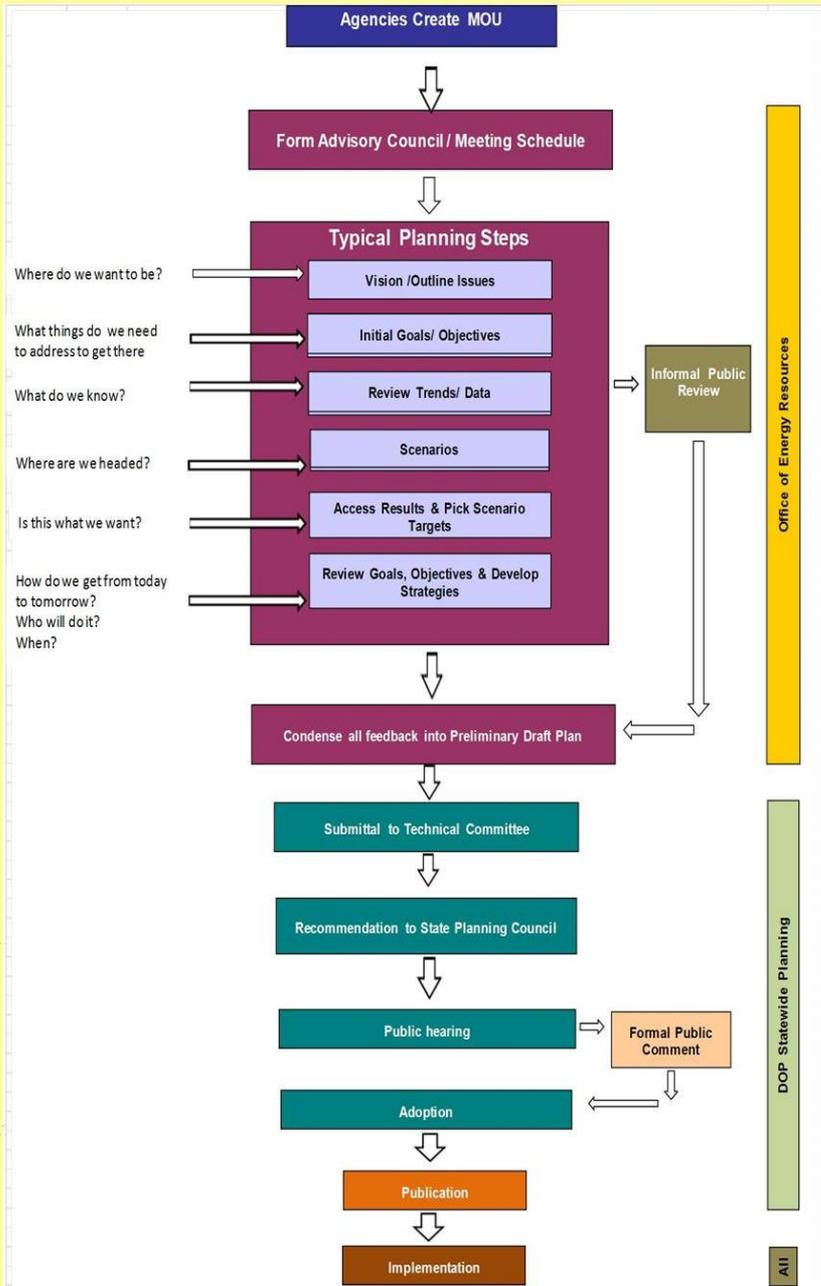
January 24, 2012



# A State Guide Planning Process Flow Chart for Rhode Island Energy 2035

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Office of Energy Resources

DOP Statewide Planning

All



Where do we want to be?

What things do we need to address to get there

What do we know?

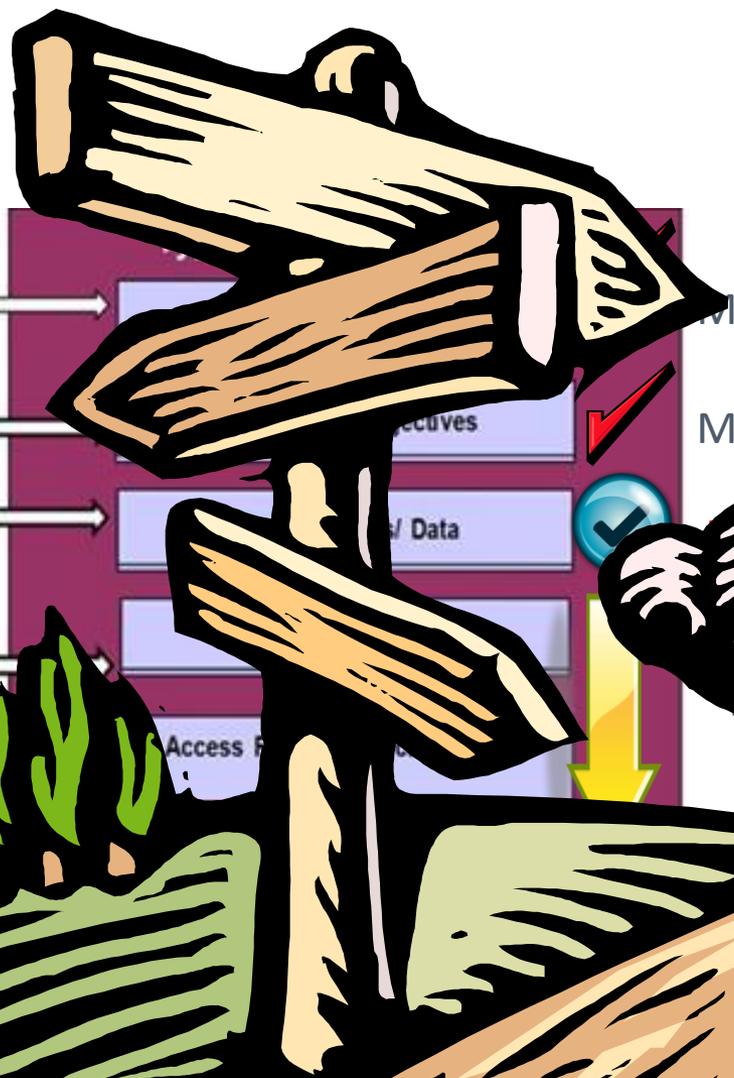
Where are we headed?

Is this what we want?

How do we...

Meeting 1 (10.31.12)

Meeting 2 (12.20.12)

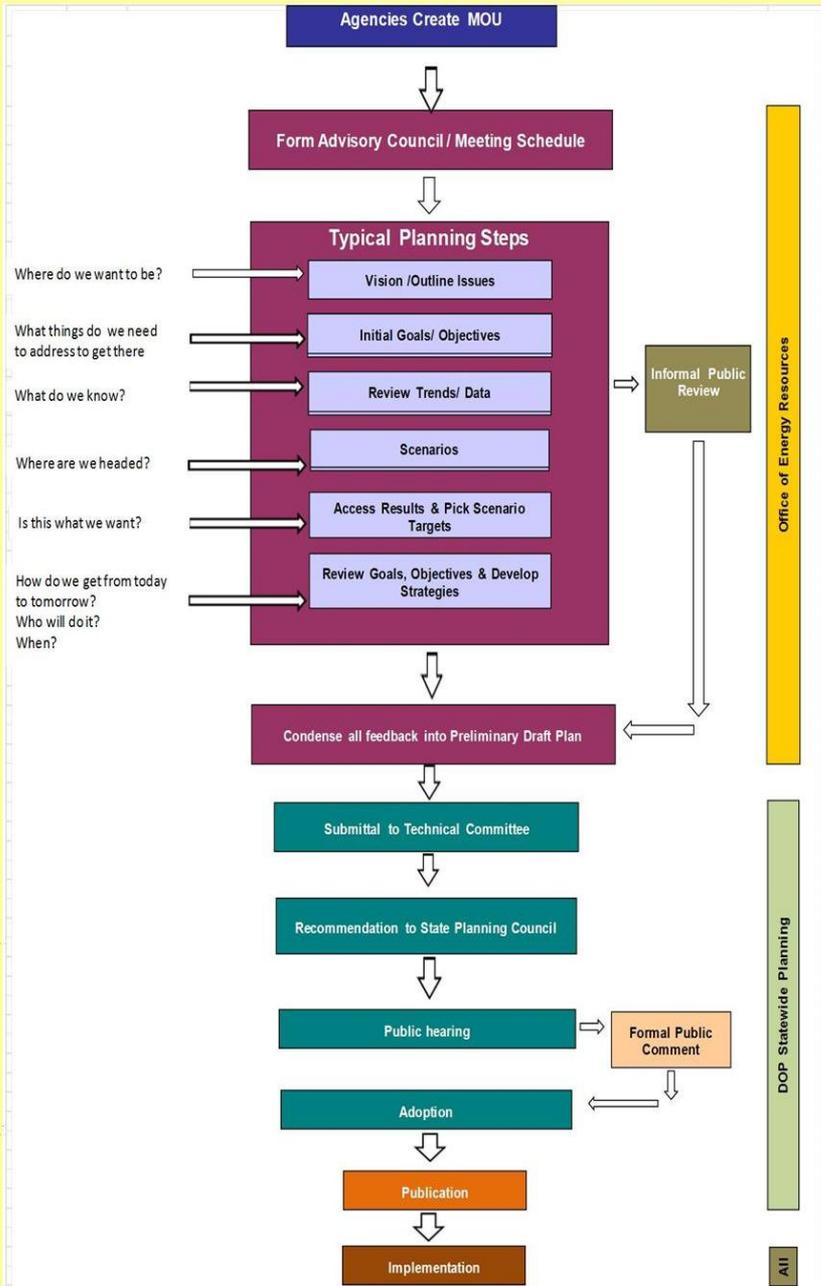




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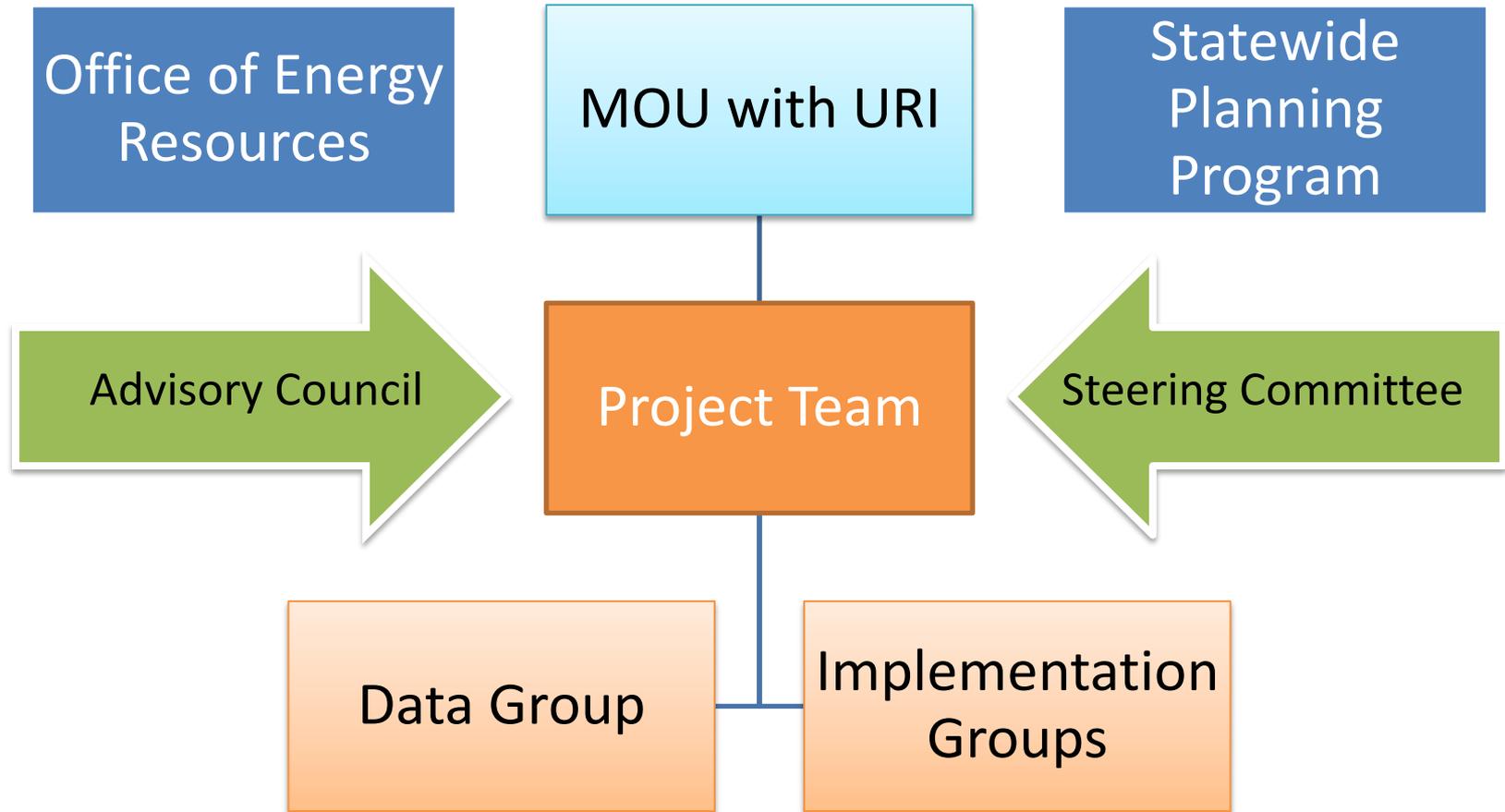


Office of Energy Resources

DOP Statewide Planning

All

# Advisory Structure



# Advisory Structure

## Advisory Council

- Meets on a monthly basis
- Evaluates and provides feedback on research to assist staff in preparing a Preliminary Draft Plan
- Recommends Preliminary Draft Plan to the State Planning Council's Technical Committee for forwarding to the State Planning Council for public hearing, revision, and adoption

# Timeline

## Project Phases

### **Phase I: Research & Data Collection (December 2012 – May 2013)**

Gather and synthesize the best available energy data; Set measurable goals based on modeling analysis and stakeholder feedback; Design an actionable implementation strategy

### **Phase II: Preparation of Preliminary Draft Plan (June 2013 – September 2013)**

Distill research developed during Phase I into a Preliminary Draft Plan

### **Phase III: Technical & Public Review (October 2013 – March 2014)**

Vet Preliminary Draft Plan through a technical and public review process; Adopt Plan as State Guide Plan Element

# Advisory Structure

## Advisory Council

- Proposed Topic Schedule:

Date	DATA GROUP		IMPLEMENTATION GROUP	
	New	Review	New	Review
October 31, 2012	Scope	<i>N/A</i>	Scope	<i>N/A</i>
December 2012	Baseline	Scope	Goals	Scope
January 2013	Forecast	<i>N/A</i>	<i>N/A</i>	Goals
February 2013	Resources	Baseline, Forecast	<i>N/A</i>	<i>N/A</i>
March 2013	Scenarios	Resources	<i>N/A</i>	<i>N/A</i>
April 2013	<i>TBD</i>	<i>TBD</i>	Transportation	<i>N/A</i>
May 2013	<i>N/A</i>	Scenarios	Thermal	Transportation
June 2013	<i>N/A</i>	<i>N/A</i>	Electricity	Thermal
July 2013	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	Electricity

# Today

## January Meeting

### Agenda:

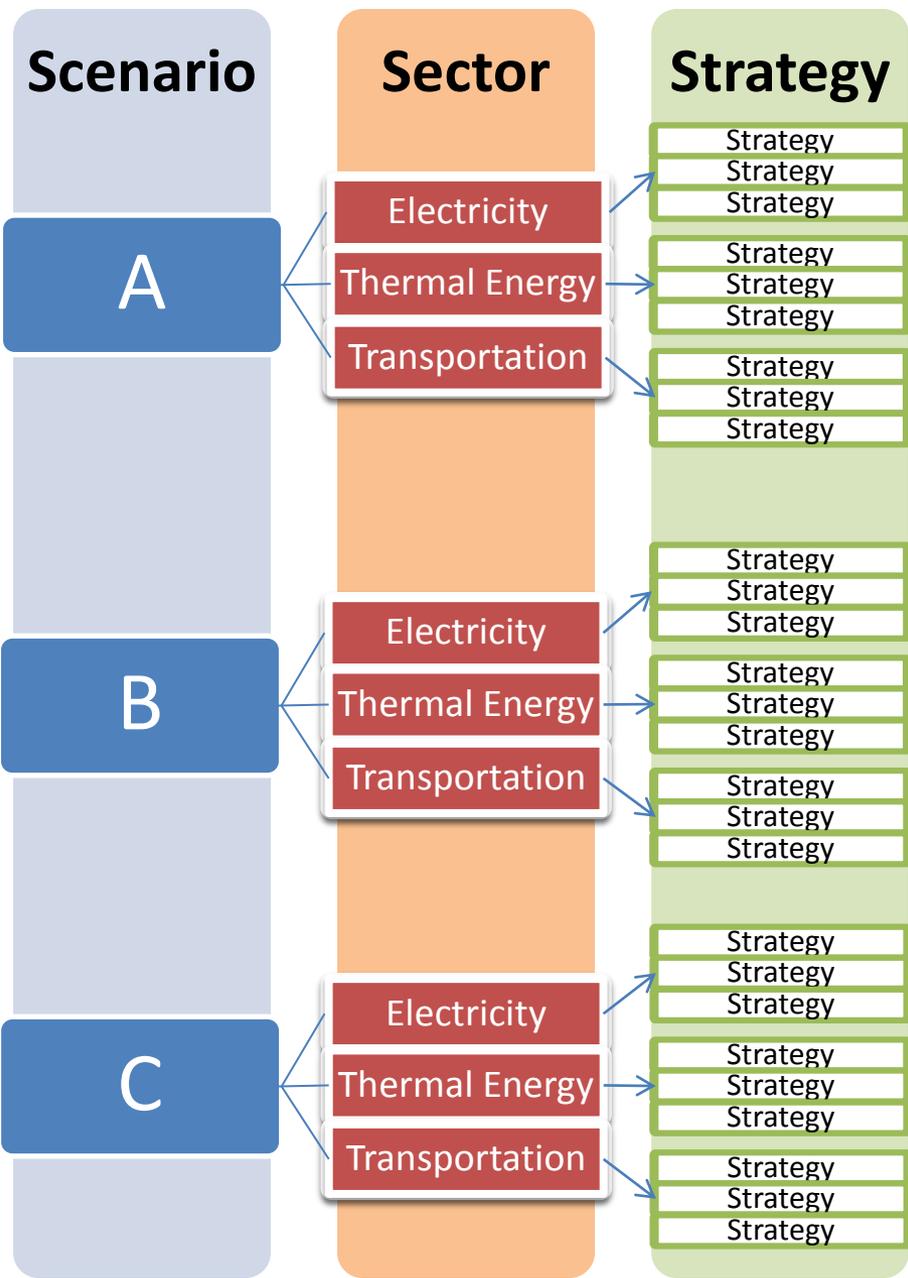
- Presentation of updated directional objectives
- Introduction to detailed scope of work for Task 2: Forecast

Date	DATA GROUP		IMPLEMENTATION GROUP	
	New	Review	New	Review
January 2013	Forecast	<i>N/A</i>	<i>N/A</i>	Goals

# Updated Directional Objectives

# Modeling Analytical Framework

# Directional Objectives (Criteria)



	1	2	3	4	5
A	+	-	+	++	--
	++	++	-	-	-
	+	--	--	++	+
	-	++	-	+	+
B	++	--	--	++	-
	+	--	-	+	+
	+	+	++	-	-
	-	+	++	--	-
C	++	++	-	-	+

# Revising Directional Objectives

- The Project Team revised the RISEP directional objectives in response to input received at the December Advisory Council meeting:
  - Directional objectives were linked directly to Plan criteria
  - Each directional objective was nested under the applicable Plan criterion
  - Specific metrics were proposed for each directional objective

# Updated RISEP Vision Statement

## VISION STATEMENT

*“In **2035**, Rhode Island will provide energy services across all sectors—electricity, thermal, and transportation—using a safe, reliable, affordable, participatory, environmentally sound, sustainable energy system that provides benefits to Rhode Island’s economy.”*

# Updated Criteria

<b>PLAN CRITERIA</b>	<b>INTENDED OUTCOMES:</b> “The provision of energy services...”
<b>Provide energy services</b>	... Occurs in every sector of Rhode Island’s economy ... Ensures a full range of lighting, comfort, convenience, productivity, and mobility for Rhode Island consumers
<b>Safety &amp; Reliability</b>	... Continues under both ordinary and extraordinary conditions
<b>Affordability</b>	... Provides opportunities for affordable energy bills for all Rhode Island consumers ... Promotes the regional and global competitiveness of Rhode Island business and industry
<b>Participation</b>	... Offers opportunities for Rhode Island consumers to choose and understand how they meet their energy needs
<b>Environmental Protection &amp; Sustainability</b>	... Promotes lifecycle benefits to human and environmental health ... Could continue indefinitely in its current mode (i.e. the system can function in any future year as it does today)
<b>Economic Benefits</b>	... Promotes long-term economic recovery and growth in Rhode Island

# Updated Directional Objectives

PLAN CRITERIA	DIRECTIONAL OBJECTIVES	POSSIBLE METRICS
Provide energy services	A. Guarantee <b>adequate overall supply</b>	Supply=Forecasted Demand
Safety & Reliability	B. Increase <b>energy security and system reliability</b> through redundancy, resiliency, and supply assurance strategies	Risk, frequency, and length of supply disruptions; Fuel diversity; Capacity and # of storage or backup power systems
Affordability	C. Lower <b>overall energy bills</b>	Annual expenditure (total, by sector, and per capita)
	D. Decrease the impact of <b>energy price volatility</b> on consumers	Derivative of price
Participation	E. Increase the availability of <b>alternative energy supply options</b> to consumers	Fuel diversity
	F. Increase <b>access to information</b> to make informed energy decisions	Existence of consumption and price signals
Environmental Protection & Sustainability	G. Decrease Rhode Island's contributions to <b>global climate change</b>	GHG emissions
	H. Reduce <b>negative ecosystem impacts</b>	Measures of air quality and land use conversion
Economic Benefits	I. Increase the amount of <b>energy expenditure</b> that stays in-State	Annual in-State expenditure
	J. Increase <b>Gross State Product</b>	GSP
	K. Increase <b>employment</b>	Job-years

# RISEP Task 2 - Future State Energy Profile Report Proposed Methodology

RISEP, Advisory Council Meeting

Jan 24, 2013

Rhode Island

Varun Kumar, Policy and Data Analyst and Jamie Howland, Director, ENE Climate and Energy Analysis Center (ENE CLEAN Center), Environment Northeast



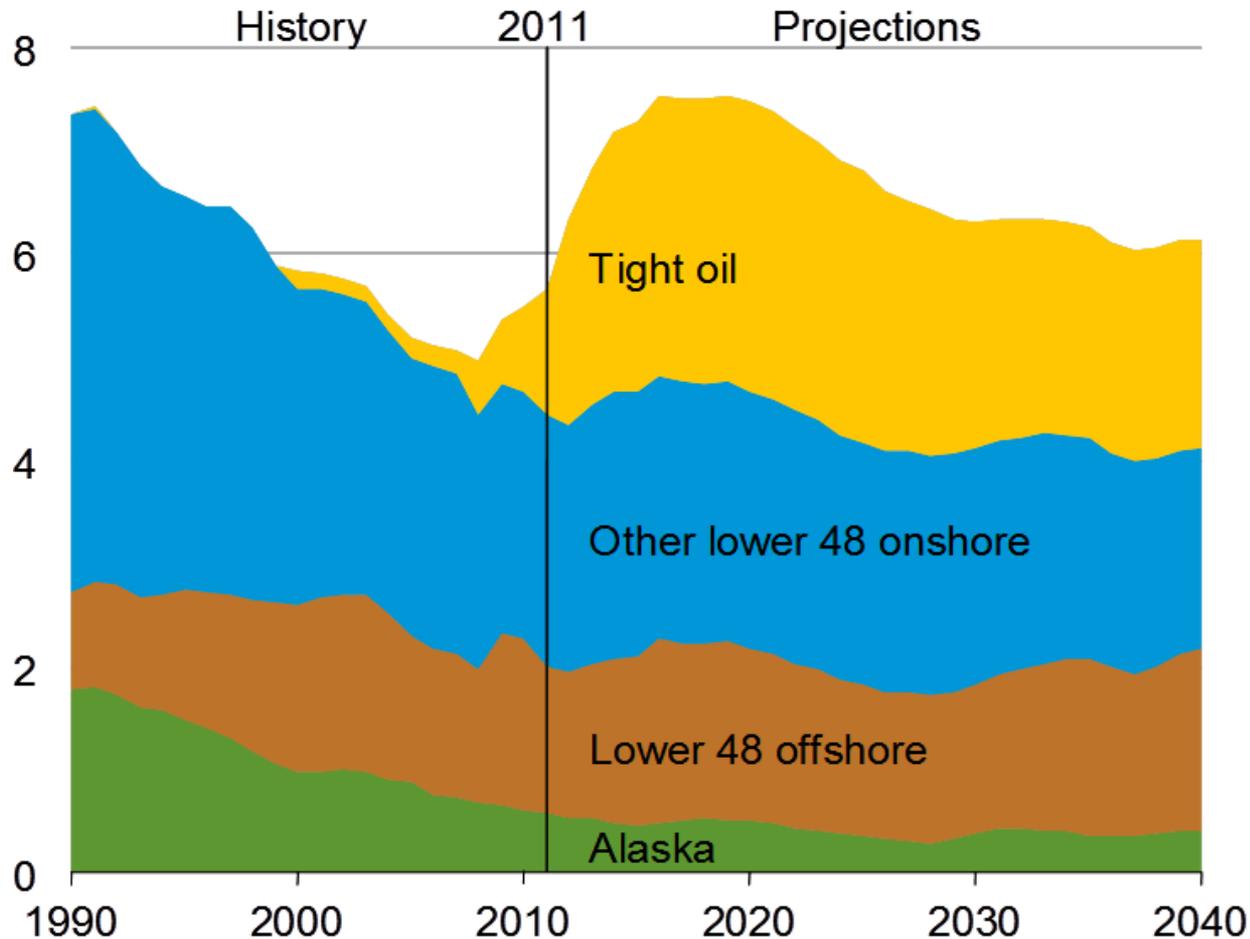
# Scope

- Energy Parameters – Output of Forecast Model
  - Demand or Consumption
  - Prices
  - Expenditure or Cost
  - Greenhouse gas (GHG) emissions
  
- Forecast will assume no changes in existing state energy policies.

# Forecast Model Input Data

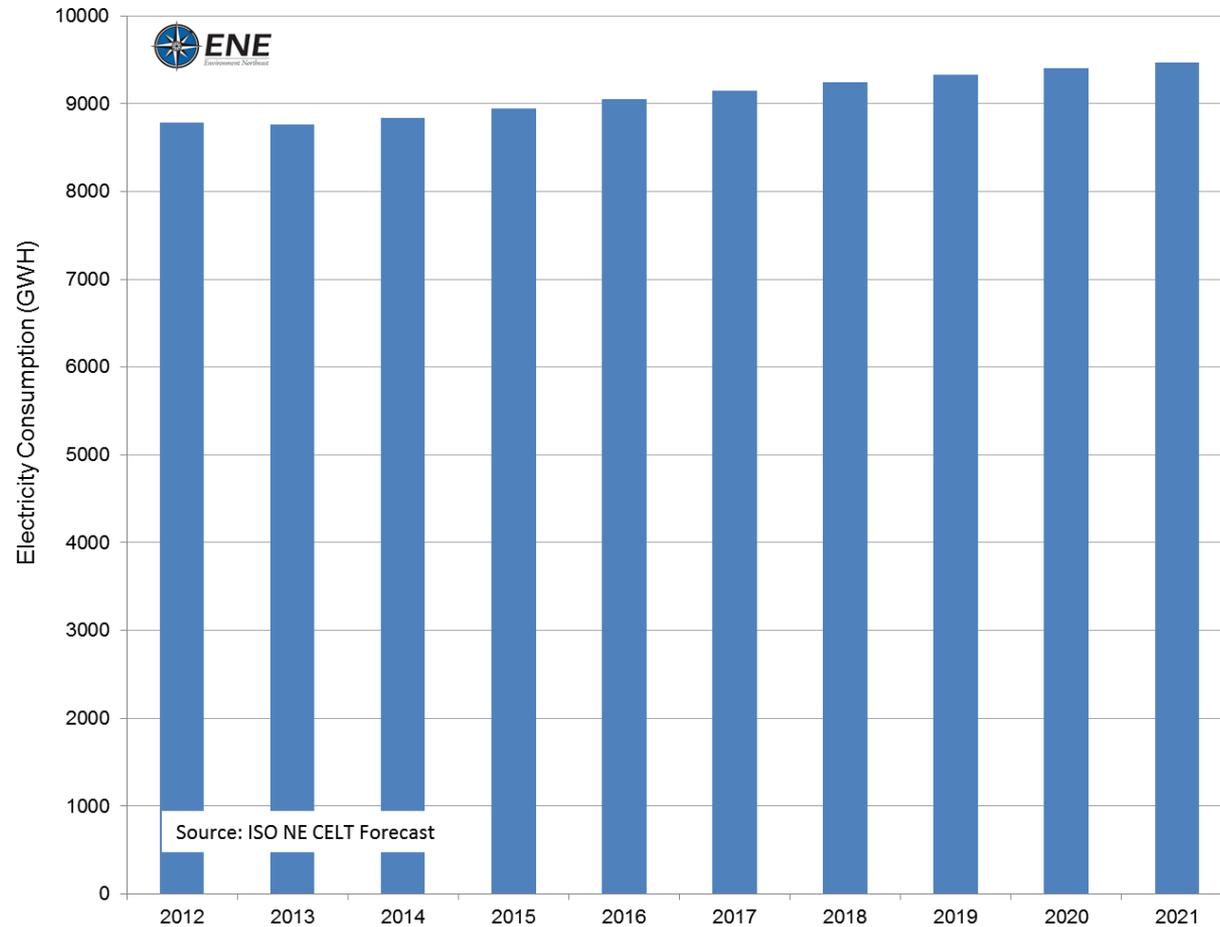
- Baseline data will be from Energy Information Administration (EIA) State Energy Data System (SEDS).
  
- We will use following sources for projected data :
  - ✓ EIA Annual Energy Outlook (AEO) -
    - ❖ EIA AEO 2013 ER Reference Case – New England specific data through 2040.
    - ❖ EIA AEO 2012 Alternative Cases – New England specific data through 2035.
  
  - ✓ ISO New England (ISO NE) CELT Report Electricity Demand Forecast – Rhode Island specific data through 2021.

# EIA Annual Energy Outlook – Widely accepted for long term energy planning.



Source EIA AEO 2013 ER

# ISO NE CELT Report



# Forecast Model Methodology

- Input data from EIA AEO and ISO NE CELT report will be used to generate Rhode Island specific data.
- Model will be adjusted to include policy impacts not evaluated by EIA Forecasts.
- Detailed methodology described later for different scenarios.

# Policy Impacts in Forecast Model

- Included
  - Rhode Island Comprehensive Energy Conservation, Efficiency and Affordability Act
  - The Rhode Island Petroleum Savings and Independence Advisory Commission proposed targets
  
- Potential
  - Regional Green House Gas Initiatives New Cap
  
- Not included
  - Distributed Generation Standard Contract, Long Term Contracting and Net Metering are complimentary to RPS.

# Forecasted Scenarios

## *RISEP BAU Base Case*

- This scenario will be based on the AEO 2013 Early Release AEO 2013ER reference case or AEO 2012 proposed CAFÉ Standards (2017 -2035). The AEO case will be adjusted to include the impacts of increase in energy efficiency .

## *RISEP BAU Low Oil Price Case*

- This scenario will differ from the RISEP BAU Base case with a lower price for petroleum-based fuels. It will use the AEO 2012 Low Oil Price case.

## *RISEP BAU High Oil Price Case*

- This scenario will differ from the RISEP BAU Base case with a higher price for petroleum-based fuels. It will use the AEO 2012 High Oil Price case. Further, impacts of the Rhode Island Petroleum Savings and Independence Advisory Commission's recommended targets will be included.

## *RISEP BAU Low Natural Gas Price Case*

- This scenario will differ from the RISEP BAU Base case with a lower price for natural gas. It will use the AEO 2012 Oil and Gas: High Technically Recoverable Resources (TRR) case.

## *RISEP BAU High Natural Gas price Case*

- This scenario will differ from the RISEP BAU Base case with a higher price for natural gas. It will use the AEO 2012 Oil and Gas: Low EUR case.

## *RISEP BAU Carbon Fee Case*

- This scenario will differ from the RISEP BAU case with an applied economy wide carbon fee starting at 15\$ and rising by 5 percent per year from 2013 through 2035.

# Energy Sectors



## Electricity

- Power Generation - Distillate Fuel Oil, Residual Fuel Oil, Natural Gas and Coal.
- Electricity consumption - Residential, Commercial and Industrial.
- **We will analyze electricity emissions based on both generation and consumption.**



## Thermal

- Residential – Liquefied Petroleum Gas (propane), Distillate Fuel Oil (heating oil), Kerosene and Natural Gas.
- Commercial - Liquefied Petroleum Gas, Distillate Fuel Oil, Kerosene Residual Fuel Oil and Natural Gas.
- Industrial - Liquefied Petroleum Gas, Distillate Fuel Oil, Residual Fuel Oil, Natural Gas and Coal.



## Transportation

- Liquefied Petroleum Gas, E85 Ethanol, Diesel Fuel, Motor Gasoline, Jet Fuel, Residual Fuel Oil and Natural Gas.

# RISEP BAU Base Case Methodology

- AEO's New England energy consumption and price forecast factors will be adjusted based on historical Rhode Island and New England data from EIA to derive Rhode Island-specific forecast for different fuels.
- Energy expenditure will be derived using consumption and price data.
- Greenhouse gas emissions will be derived using consumption and emission factors data.
- ISO NE Rhode Island electricity consumption forecast data will be used through 2021. ENE will forecast data from 2022 through 2035 based on ISO NE and AEO forecast.
- Results derived from the AEO will be adjusted by the impacts of increased energy efficiency:
  - The energy savings targets will be translated into changes in fuel consumption, expenditure and greenhouse gas emissions over the proposed period. Targets are shown in the next slide:

# Electric Efficiency

Year	Electric Efficiency Savings Target (Percentage of Sales)	Source
2012	1.7%	RI Energy Efficiency Procurement Plan 2012-14
2013	2.1%	
2014	2.5%	
2015-2021	2.7%	ENE proposed based on KEMA RI Energy Efficiency Opportunity Report
2022-2024	2%	ENE proposed conservative estimate based on anticipated new opportunity.
2025-2035	1%	

# Natural Gas Efficiency

Year	Natural Gas Efficiency Savings Target (Percentage of Sales)	Source
2012	0.6%	RI Energy Efficiency Procurement Plan 2012-14
2013	0.8%	
2014	1%	
2015-2017	1%	ENE proposed based on VEIC Optimal Consultant Team RI Opportunity Report.
2018-2020	1%	ENE proposed conservative estimate based on anticipated new opportunity.
2021-2035	0.5%	

# Methodology Similar for other scenarios except RISEP BAU High Oil Price Case:

1. Results will be adjusted to achieve a 30% overall reduction in petroleum products consumption from 2007 levels by 2030 and 50% by 2050.  

2. Year 2011 consumption will be established as a percentage of 2007 levels.  

3. Reductions will then be phased out over the period between 2012 and 2030 uniformly to reach 30% below 2007 levels.  

4. Further, reductions will be phased out to reach 50% below 2007 levels by 2050.

# Sources

- Comprehensive Energy Efficiency, Conservation, and Affordability Act of 2006, R.I.G.L. § 39-1-27.7, <http://www.rilin.state.ri.us/Statutes/TITLE39/39-1/39-1-27.7.HTM>.
- The Rhode Island Petroleum Savings and Independence Advisory Commission, <http://webserver.rilin.state.ri.us/Statutes/TITLE42/42-140.4/42-140.4-1.HTM>
- EIA AEO 2012 Assumption Document, [http://www.eia.gov/forecasts/aeo/assumptions/pdf/0554\(2012\).pdf](http://www.eia.gov/forecasts/aeo/assumptions/pdf/0554(2012).pdf)
- Based on VEIC Optimal Consultant Team RI Opportunity Report, <http://www.riermc.ri.gov/documents/RI%20Gas%20Opportunity%20Report%202012.pdf>
- Rhode Island Public Utilities Commission Docket 4202, Electric and Natural Gas Least Cost Procurement Savings Targets for 2012-2014, [http://www.ripuc.org/eventsactions/docket/4202-EERMC-EST-Filing\(9-1-10\).pdf](http://www.ripuc.org/eventsactions/docket/4202-EERMC-EST-Filing(9-1-10).pdf)
- Based on KEMA RI Energy Efficiency Opportunity Report, <http://www.ripuc.org/eventsactions/docket/4202-EERMC-EST-KEMARept.pdf>

# Contact Information

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Next Steps

# Next Steps

## February Meeting

Questions for the Advisory Council to answer before the meeting:

- *What changes or additions would you like to see to the proposed Task 2: Forecast scope of work?*

**→ Emailed responses requested from Advisory Council by Thursday, January 31**

# Next Meeting

## February Meeting

### Proposed Agenda:

- Presentation of preliminary results from Task 1: Baseline
- Presentation of preliminary results from Task 2: Forecast
- Introduction to scope of work for Task 3: Resources

Date	DATA GROUP		IMPLEMENTATION GROUP	
	New	Review	New	Review
February 2013	Resources	Baseline, Forecast	<i>N/A</i>	<i>N/A</i>

# Dates

## Next Advisory Council Meeting Dates

- February 19, 10:30am to 12:30pm

## ADVISORY COUNCIL MEETING

### **RHODE ISLAND STATE ENERGY PLAN (RISEP)**

**Thursday January 24, 2013  
10:30 AM-12:30 PM  
Conference Room C  
RI Department of Administration  
One Capitol Hill  
Providence, RI**

#### **ATTENDANCE:**

Advisory Council Members: Bob Chew, Abigail Anthony, Julie Gill, Linda George, Melissa Long, Ian Springsteel, Nick Ucci, Bob Tormey, John Gilbrook, Jeff Broadhead, Channing Jones, Julian Dash, Anthony Paolantonio, and Sheila Dormody

Steering Committee & Project Team Members: Marion Gold, Paul Gonsalves, Nancy Hess, Chris Kearns, Hannah Morini, Rachel Sholly, Allison Rogers, and Danny Musher

Other Attendees & Members of the Public: Rachel Henschel, Karina Lutz, Bruce DiGennaro, Charles Hawkins, Tim Faulker, Varun Kumar, Jamie Howland, Sandra Serpa, Jessica Millar

#### **AGENDA:**

10:30 Welcome – *Marion Gold, RIOER, Nancy Hess, RISPP*

10:45 Updated RISEP Directional Objectives – *Danny Musher, RIOER*

11:00 Questions & Discussion

11:15 Introduction to “Forecast” Scope of Work (SOW) – *Jamie Howland & Varun Kumar, ENE*

12:00 Questions & Discussion

12:15 Public Comment

12:30 Adjourn

## **MINUTES:**

Rhode Island Office of Energy Resources (OER) Director Marion G. began the meeting by stressing the importance of the Advisory Council's (AC) work and by having members introduce themselves and the organizations they represent. She then introduced Nancy Hess from the Statewide Planning Program to talk about the process the AC will be undertaking and the goals and focus of the exercise. The end point of this process is to have the RISEP incorporated into the State Guide Plan which helps determine individual municipalities' comprehensive plans. She passed out a flow chart which shows the various steps in a typical planning process. The AC has already completed the first step in the process which is establishing a vision statement and outlining issues. This is a fluid process and things can change as the plan evolves over time. Right now, the AC is in the step where initial goals and objectives are introduced. Looking ahead, the scenarios and the results will come back for the AC to review.

### **Updated RISEP Directional Objectives (DOs)**

OER Project Manager Danny M. reviewed the process the AC will be undertaking to develop an update to the RISEP which has not been done since 2002. He then presented a power point presentation (attached). The AC responsibilities are to meet on a monthly basis, provide feedback and recommend a plan to the State Planning Council. Currently the AC is in phase one which is the data gathering stage. The AC has already reviewed the scope of work for the historic baseline and today the AC will be reviewing the business as usual (BAU) forecast.

The AC needs to create a rubric for how we are going to decide what strategies to use to design the plan. What criteria will the Council use to develop these strategies? The purpose of developing the DOs is to develop this rubric. The RISEP Project Team wove the criteria direction into the vision statement. The criteria then drive the DOs. Danny M. said his goal was to get feedback from the AC on the revised and finalized DOs. The metrics in the rubric are the metrics the AC will recommend to the Consultant Team (C-Team) for the purposes of performing scenario modeling. Danny M. then reviewed the rubric with the DOs and metrics associated with them. He then opened up the floor for questions and comments about the rubric.

Bob Chew said that he would like DO **H** to include water pollution as a negative ecosystem impact. He cited oil spills. Nick U. questioned DO **A**, where the goal is to guarantee adequate overall supply. How does RI fit in? We are part of a regional grid. Are you talking about demand measured by capacity or supply? If you are looking at RI specific supply, the problem is sometimes having local supply is not the most efficient or economical result. You may want to expand upon what this metric really means. Danny M. replied that this metric is a fundamental concept simply meant to express that the plan does not consider strategies that would not meet forecasted demand in all sectors as a way to for example, achieve maximum cost savings or a maximum reduction in emissions. The metric simply means that we will provide energy services and meet the demand. Nick U. is not sure what value added this metric provides. Because RI relies on

markets it does have adequate supply. You may want to look at price instead. Other than natural gas, where there are some supply constraints, we have enough supply over the next 10 years. Electric demand in RI is predicted to decline because of EE. Even though gas prices have gone to \$4 a gallon there have not been supply constraints in thirty years. Nick U. does not see the value in this metric without some additional information.

Bob T. asked if the C-Team will be giving help on possible metrics and are we going to be baselining where we are today in order to judge whether there is an increase or decrease over time. He does not feel the metrics in the rubric are specific enough. Will the C-Team make the metrics more specific? Or is the AC going to direct the consultants? Danny M. said that the feedback he received from the AC indicate that they wanted to drive the process. He said the ENE presentation later in today's meeting will be on baselining for the BAU forecast. Bob T. said that in the DOs we are pre-supposing increases and decreases without metrics. He wanted to know if, after we have the metrics, can the AC go back to review the DOs. Are these DOs firm and cast in concrete? Danny M. said the AC wants the C-Team to propose strategies that fit the criteria and vision statement. Bob T. said his concerns are more fundamental. He can't sign off on the DOs without metrics to make an informed decision.

Nancy Hess said that these DOs are like starting place holders to inform the planning process. The C-team can come back and give us parameters, some may work, others may not, so you want to be flexible because you may want to tweak the DOs. Danny M. asked Bob T. to give an example. Bob T. cited DO C-which seeks to lower overall energy bills. We may learn that the AC has no control over that whatsoever. We are in a six state region where ISO-NE determines your bill. There may be institutional issues that could make it impossible to meet this objective. Danny M. said that we have to be consistent with what tasks we give to the C-Team.

Ian S. wondered if instead of lowering overall energy bills the wording should be to minimize everyone's energy bills. Energy bills may go up, but you want to minimize this impact with cost effective solutions. DO E and DO I are not so much objectives & metrics as they are strategies to achieve the DOs. Danny M. asked if the group agreed with that. Abigail A. said that it made a lot of sense. Ian S. also said that RI may want to optimize the rate of change rather than ascribing an increase or decrease to each DO. Abigail A. said the increase or decrease will all be relative to the BAU forecast. Sheila D. said we want to increase the percent of energy spend in-state. We want to spend less money overall but we want it to stay in-state. Danny M. asked if the group wanted to strike DO I.

Jessica Millar suggested using the word ratio instead of amount. Sheila D said don't put just any alternative energy supply options that under DO E; use only clean energy alternatives. We should put parameters on what we mean by alternative. Danny M. said that the scenarios will be designed to meet the DOs, and the DOs will guide what alternative energy supply options we are seeking. Danny M. observed that many people see DO E as a strategy rather than a goal. He cited the lack of choice with mass transit and EV alternatives in the transportation sector. Sheila D. also cited participation as a

criterion in the vision statement. Danny M. said that AC members have given him feedback emphasizing that consumers should be more aware of their energy choices. John G. said the goal may be to offer opportunities to RI consumers to choose their energy supply. He would hate to remove DO E if it is getting at something that the others don't. Maybe it should say choice in the DO. Ian S. said that the participation criteria should be a goal of educating more people. Find ways to measure the outreach of entities like OER & NGrid. The metric could be how many people are being reached. It could measure people's understanding of their choices. Ian S. suggested forming focus groups to get at the core understanding of consumer's choices. Sheila D. said making people more aware of choices does not increase the amount of choice. Knowing what the RIPTA schedule is does not increase the mass transit choices available or make it a better system. You don't get at this if you get rid of DO E., but it does need to be more nuanced.

Channing J. said that DO H (reduce negative ecosystem impacts) needs to be better defined. You have to think about damage that comes from out of state like Brayton Point or hydraulic fracking in Pennsylvania. They are not in RI but produce energy for RI. The C-Team needs to focus on this. Danny M. said it was a good point. Ian S. thought that human health and safety should be in this DO with metrics like mortality rates and labor loss rates.

Bob C. said that a top priority in any energy plan should be to get people to use less energy. He does not see it in any of the DOs. Using less energy solves a lot of these problems. Danny M said there was a DO discussed by the Project Team that addressed using less energy whenever reduction in demand is cheaper than additional supply, but it was decided that that was more of a strategy than a DO. Bob C. said he feels the two most important goals are to use less energy and try to site more renewable energy (RE) in-state. John G. commented that those are potential strategies that would meet many of the Dos. He wondered if there should be a column in the rubric that has potential strategies, so the AC can see them up there.

Bob T. felt it was a good discussion but he still needs metrics. The help he needs is baseline. He feels we are dealing in a vacuum and he wants an understanding of where our gas & oil comes from. Where is RI electricity generated? Julian D. asked if innovation and being pro-active should be a DO. If a plan is to be forward looking it should be looking at innovation. Danny M. ended the discussion by asking the AC members to send him their feedback on the revised DOs by e-mail.

### **Introduction to the "Forecast" Scope of Work**

Danny M. introduced Jamie Howland, the Director of Environment Northeast's (ENE) Climate and Energy Analysis Center and Varum Kumar, Policy and Data Analysis for ENE, to give this power point presentation (attached). They will be developing a BAU forecast. They will look at energy parameters concerning: demand and consumption, prices, cost, and greenhouse gas (GHG) emissions. This forecast will assume no changes in existing RI energy policies. The following sources will be used for the projected data:

the Energy Information Administration (EIA) Annual Energy Outlook (AEO) for 2012 & 2013; and the ISO-NE CELT Report. The ISO-NE electricity demand forecast has RI specific data through 2021. Nick U. asked if the forecast has energy efficiency (EE) values factored in. Jamie H. said that since ISO-NE has always discounted EE they plan on using a forecasting model without it, and then factoring in Rhode Island's efficiency goals after the fact.

Policy impacts in the forecast model include: the RI Comprehensive Energy Conservation Efficiency & Affordability Act, which authorized Least Cost Procurement (LCP); and the recent passed Petroleum Savings and Independence Advisory Commission Act which contains petroleum reduction targets. These targets will be analyzed in the forecast. A new Regional Greenhouse Gas Initiative (RGGI) cap may adjust the model.

Varun K. then went through a series of BAU scenarios. Because energy markets are uncertain ENE is presenting multiple scenarios. These scenarios include high & low price oil and high and low price natural gas. They will also do a forecast scenario with an applied industry wide carbon fee. Sheila D. asked if there was a scenario where high gas and high oil prices were modeled together. Jamie H. said that they were looking at the bounds of what is there today in RI. Because oil is a global situation, and natural gas is not, the oil market is much tighter. Bob T. wanted to point out a lag in the data. The 2012 ISO data is really data from 2011. The projections will be almost 12 months old for projecting things like shale oil.

Varun K. then put up a slide that showed what would be measured in each sector. They will also be analyzing electricity emissions based on both generation and consumption. Jamie H. said that emissions from power plants in RI do not correlate with the electricity consumption in RI. As a rule, the smaller the state is the bigger the difference between emissions & consumption. You need to look at the regional generation and emissions mix.

Ian S. wanted to know if the RGGI scenario would be incorporated in the forecast. He also assumed that the scenarios are not comprehensive. They do not include nuclear, wind, and other technologies that are important resources. Jamie H. said it was because the fuels modeled are the ones most used in RI. John G noticed the same thing about transportation. Jamie H. said if you put EVs in both places (electricity & transportation) you are counting it twice. The same goes for biofuels that can be used for transportation & heating. John G. asked if natural gas for transportation breaks out LNG & CNG. Jamie H. said it does not.

Varun K. then put up a slide that shows the RISEP BAU base case methodology. AEO's New England (NE) energy consumption & price forecast will be adjusted based on historic RI & NE data to derive RI specific forecasts for different fuels. Energy expenditure will be derived using consumption & price data. ISO-NE RI electricity consumption forecast data will be used through 2021. ENE will forecast data from 2022 through 2035 based on ISO & AEO forecasts. Results derived from the AEO will be

adjusted by the impacts of increased EE. They will take the EE savings targets from the 2012-14 EE Procurement Plan for this forecast. For 2015-21 ENE proposes using targets from the KEMA EE Opportunity Report. For natural gas they will be using the EEPP until 2014 and then the VEIC Optimal C-Team Gas Opportunity Report for later years.

Jamie H. said that with EE the assumption would be that the product would be replaced by a more EE product in 20 years and that EE that has been put in place until 2024 will still be there. As an example, Jamie H. said that if he replaced the 30 year old heating system in his house you would not buy one that is as EE inefficient as the one 30 years ago; you would buy the least EE efficient technology that is available at that time. The EE percent in the forecast is for EE on top of what we already have. You don't want to assume massive EE which could result in unrealistic load expectations. You don't want to overstate EE figures. Without EE we have a trajectory of a modest but steady increase in energy consumption.

Ian S. wanted to know what was driving the 30% overall reduction in petroleum consumption in transportation from 2007 levels by 2030. Marion G. said that a new state law that established the Petroleum Reduction Commission has that as a goal. Varun K. said that ENE has already looked at the impact of CAFE Standards on transportation scenarios. Jamie H. said that these standards will help drive this reduction. Is the rest of the reduction going to come from fuel switching? If it does come from fuel switching it is beyond the bound of a baseline forecast. Bruce D. wanted to know how much of the petroleum reduction comes from EE and how much comes from fuel switching. Jamie H. said that if you wanted to consider fuel switching, it is better to do it in the scenario modeling than in the baseline. Until you run the baseline scenario you are not going to know what measures need to be put in place to meet the 30% goal. Danny M. said that the 30% reduction will be modeled because we have a Commission formed by the General Assembly, which is mandated to consider certain petroleum reduction targets.

Julie G. said that she knows the EIA data is widely accepted, but their results have been less than stellar. To assume that those projections are accurate could be dangerous. Jamie H. said that ENE would be happy to listen to alternatives. Bob T. asked if it was a demand forecast or a supply forecast. Will it forecast what power plants are running in 2015 and what their fuel sources are? It is important to realize where we get our power from. How much comes from Brayton Point? This is important in a baseline analysis. He said what we have now is just gross data. What are the pollution impacts of where we get our energy? He agrees with Julie G. that EIA is grossed up data that is predicated on old assumptions that are at least a year old. If you go back 20 years and look at EIA forecasts you will find the data misleading and it does not get to the core problem of solving energy consumption. Julian D. said that was a very good point and that the gross numbers do not tell where the power comes from. Bob T. said to get at this data the suppliers are going to have to provide information as to exactly where the stuff comes from. Jamie H. said what he was describing was an integrated resource plan.

Danny M. said that the Project Team would need to know if we have the appropriate resources and time to do such a study. This was not in the original SOW. Marion G. said

the AC was not working in a vacuum. There is lots of work going on in energy in RI and many people in the room are working on the shorter term issues. We are looking at a lot of data that has not been looked at before. Bob T. said that we are starting in a reasonable place to start but it is not enough. Marion G. asked Bob T. to put his comments into writing so the Project Team can study them. She said that this is a learning process for the AC.

Jamie H. said it is a fundamental problem with all forecasts, especially energy, because you never have absolute certainty. We don't know if another technology like fracking will change the landscape in the next ten years. But if you need to identify the risks and uncertainty or you will never be able to do long term energy planning

Danny M. said that Julie G.'s and Bob T.'s comments were very helpful and he would like them to e-mail them to him. Bob T. asked why there were six separate PUCs and six different rate structures in New England when the ISO is a regional entity. He feels it is illogical. Regionalization would give NE better buying power. Ian S. said that energy is regional but distribution is local.

Karina L. thought there would be a better basis for planning if we had data that demonstrates how much the EIA has been off in their predictions in the last twenty years so we can look at the range of error. Jamie H. said he would be hesitant to do that. The recent natural gas situation makes the accuracy of any forecast flawed.

Jessica M. said they we may want to make the goals tighter and get at the most important information in each sector. We may need to simplify goals and melt them down and do what Bob C. suggested - just use less energy. What information is needed to get at that goal? This could get at Bob T.'s questions about how much energy are we using and where we are getting it-like Brayton Point. This has high value for us to know.

## **Next Steps**

Danny M. said that everyone has good points and at this stage, the AC is just looking for the basic baseline information. Next month we will come back and show the preliminary findings from the baseline forecast. Bob C. said he would like to see a baseline on how many solar hot water systems have been installed in RI and see if we can grow that. We may also want to look at the number of MWs of PV that have been installed to date-how much capacity today and how much capacity in the future.

Danny M. said the AC was on an accelerated timeline so it is important to get a lot of feedback from the AC so please sent it to him by e-mail. He is particularly interested in the forecast SOW. He will e-mail the power point to members and he is asking for their responses within the week. If members have additional comments about the revised DOs they should e-mail them to him. The Project Team will work on a final set of DOs that will be handed over to the C-Team. There will be numbers for the next meeting. The Project Team will also be introducing the SOW for the third task which is looking at the resources available. The next AC meeting will be held on Tuesday February 19<sup>th</sup> at

10:30 AM.

**The meeting was adjourned at 12:30 PM.**