

# RISEP Advisory Council #7

Friday, September 6, 2013

# Today's Agenda

1. Review of timeline & process
2. Draft RISEP goals
3. Next steps

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1. Review of timeline & process
2. Draft RISEP goals
3. Next steps

# Review: RISEP Project Tasks

- **Gather Data**: *Analyze and quantify the amount, cost, supply, and environmental effects of all forms of energy resources—currently used, and potentially available to use—within all sectors in Rhode Island.*
- **Set Goals**: *Identify measurable targets for providing energy services using a resource mix that meets a set of criteria advancing the health, environmental, economic, and human wellbeing of the people, communities, and environment of Rhode Island.*
- **Recommend Action**: *Design a comprehensive implementation strategy to meet the goals of the Plan through public, private, and individual efforts, consistent with existing policy requirements at the local, state, regional, and federal level.*

# Outline of RISEP Final Report

- The RISEP Report will contain three main sections that correspond to each of the three major project tasks:
  - **Gathering Data**: Provides a historical context for Rhode Island energy usage and trends
  - **Setting Goals**: Describes a vision for transformations to Rhode Island's energy system
  - **Recommending Action**: Offers a menu of policy options to achieve the stated goals

# Status of RISEP Project Tasks (1)

- **Gather Data**: *Analyze and quantify the amount, cost, supply, and environmental effects of all forms of energy resources—currently used, and potentially available to use—within all sectors in Rhode Island.*
- The RISEP Project Team and project partners have completed the data-gathering phase of the project

## **HISTORICAL BASELINE – RISEP Project Team**

- How well have we met our criteria in the past?

## **BUSINESS-AS-USUAL FORECAST – ENE**

- How well are we poised to meet our criteria going forward?

## **SCENARIO MODELING – Navigant Consulting**

- Can we do a better job of meeting our criteria going forward?

# Status of RISEP Project Tasks (1)

- **Gather Data**: *Analyze and quantify the amount, cost, supply, and environmental effects of all forms of energy resources—currently used, and potentially available to use—within all sectors in Rhode Island.*

## ➤ Status of Navigant Report:

- Over 50 comments received and addressed
- Navigant work products submitted to the RISEP Project Team for review last week
- Navigant's final report and data tables will be circulated to the Advisory Council during the coming ~two weeks

# Status of RISEP Project Tasks (2)

- **Set Goals**: *Identify measurable targets for providing energy services using a resource mix that meets a set of criteria advancing the health, environmental, economic, and human wellbeing of the people, communities, and environment of Rhode Island.*
- Today we will solicit feedback from the Advisory Council on draft goals developed based on analysis and research

# Status of RISEP Project Tasks (3)

- **Recommend Action**: *Design a comprehensive implementation strategy to meet the goals of the Plan through public, private, and individual efforts, consistent with existing policy requirements at the local, state, regional, and federal level.*
- During the next month, we will hold Implementation Group meetings to solicit feedback on the Project Team's proposed menu of policy options

# Reminder: Overall RISEP Timeline

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

Gather and synthesize the best available energy data

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

Set measurable goals based on modeling analysis and stakeholder feedback; Design an actionable implementation strategy

Distill research into a Preliminary Draft Plan

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

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

# Today's Agenda

1. Review of timeline & process
- 2. Draft RISEP goals**
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# Purpose of Today's Presentation

- Describe rationale for proposed RISEP goals
- Describe analysis & research supporting proposed RISEP goals
- Solicit Advisory Council feedback on proposed RISEP goals

# Rationale for Proposed Goals

- The RISEP Project Team proposes using the original RISEP directional objectives as a guide for stating goals:
  - **SECURITY**
  - **COST-EFFECTIVENESS**
  - **SUSTAINABILITY**
- Directional Objectives → Quantifiable Values → Measureable Performance Metrics

# RISEP Directional Objectives

## Security

- **ADEQUACY.** Plan to meet overall energy supply needs
- **SAFETY.** Increase the safety of energy conversion and use
- **RELIABILITY.** Increase the system's ability to withstand disturbances
- **RESILIENCY.** Increase the system's ability to rebound from disturbances

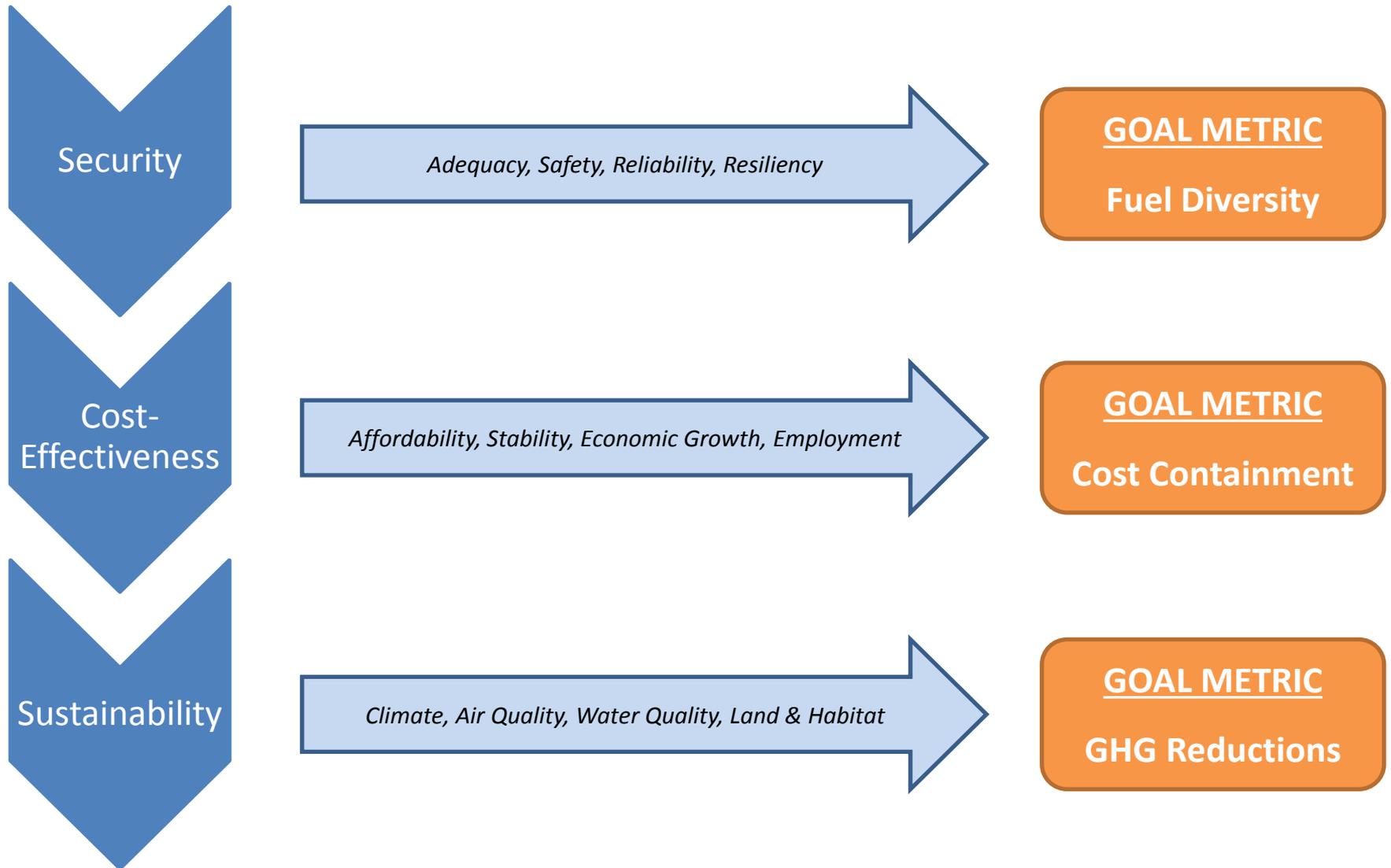
## Cost-Effectiveness

- **AFFORDABILITY.** Lower overall energy bills
- **STABILITY.** Reduce the impacts of energy price volatility on consumers
- **ECONOMIC GROWTH.** Grow and maintain a healthy state economy
- **EMPLOYMENT.** Increase employment

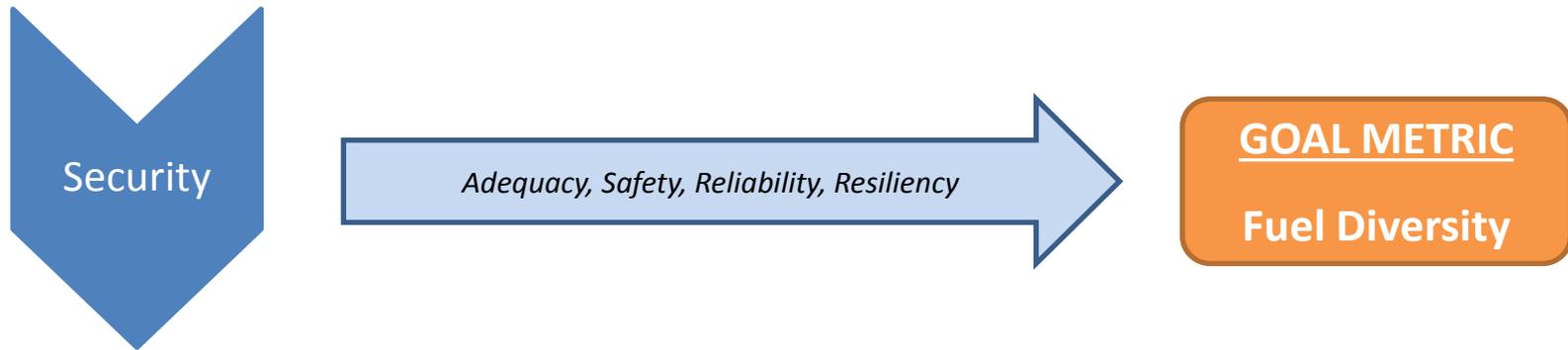
## Sustainability

- **CLIMATE.** Reduce greenhouse gas emissions from energy consumption
- **AIR QUALITY.** Reduce criteria pollution from energy consumption
- **WATER USE & QUALITY.** Reduce the water impacts of energy consumption
- **LAND & HABITAT.** Reduce the impacts of energy projects on ecosystems

# The RISEP Project Team is proposing a **representative goal metric** for each directional objective



# Security Goal Metric – Fuel Diversity



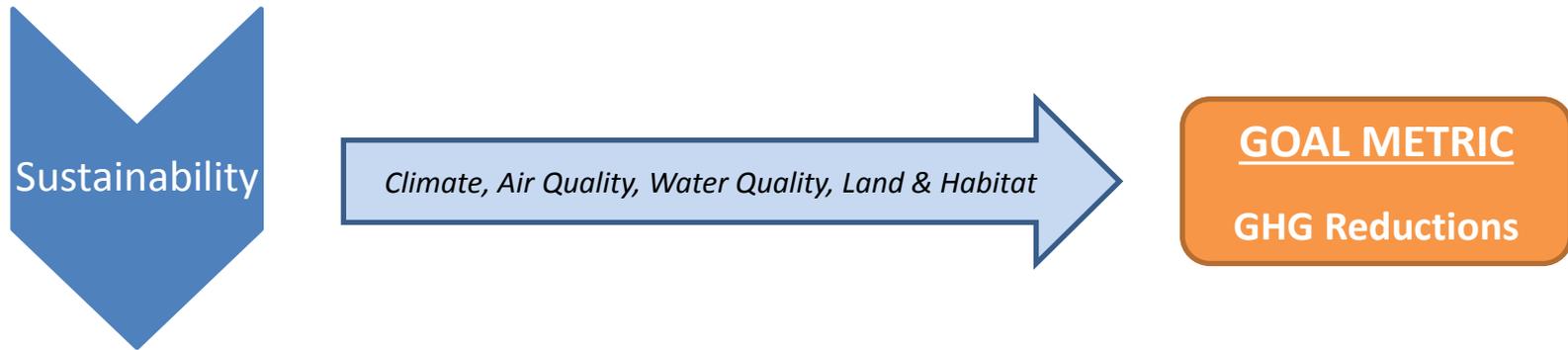
- Many indicators of energy security are difficult to quantify; **Fuel Diversity serves as a reasonable proxy indicator of many measures of energy security.** Fuel Diversity is a risk management strategy that:
  - Increases system redundancies
  - Increases consumer choices
  - Reduces impacts of price volatility
  - Decreases potential harm of supply disruptions
  - Increases potential for synergistic energy resources

# Cost-Effectiveness Goal Metric – Cost Containment



- Changes in energy costs should yield **similar directional effects on other cost-effectiveness performance measures**:
  - **Stability**: Increasing consumption of cost-effective local & regional energy resources can reduce reliance on volatile national and global energy markets
  - **Economic Growth**: Lower energy costs = increased disposable income and business revenue, economic growth
  - **Jobs**: Lower energy expenditure = economic growth = direct, indirect, induced job creation

# Sustainability Goal Metric – GHG Reductions



- Changes in GHG's should yield **similar directional effects on other sustainability performance measures**:
  - **Air Quality**: Reducing GHG emissions will often reduce other air pollutants
  - **Water Use & Quality**: Reducing fossil fuel power generation will lower water consumption and reduce acid rain impacts
  - **Land & Habitat**: Reducing GHG emissions poses different types of natural resource impacts depending on the relative emphasis of habitat preservation, increased renewable development, and fossil generation

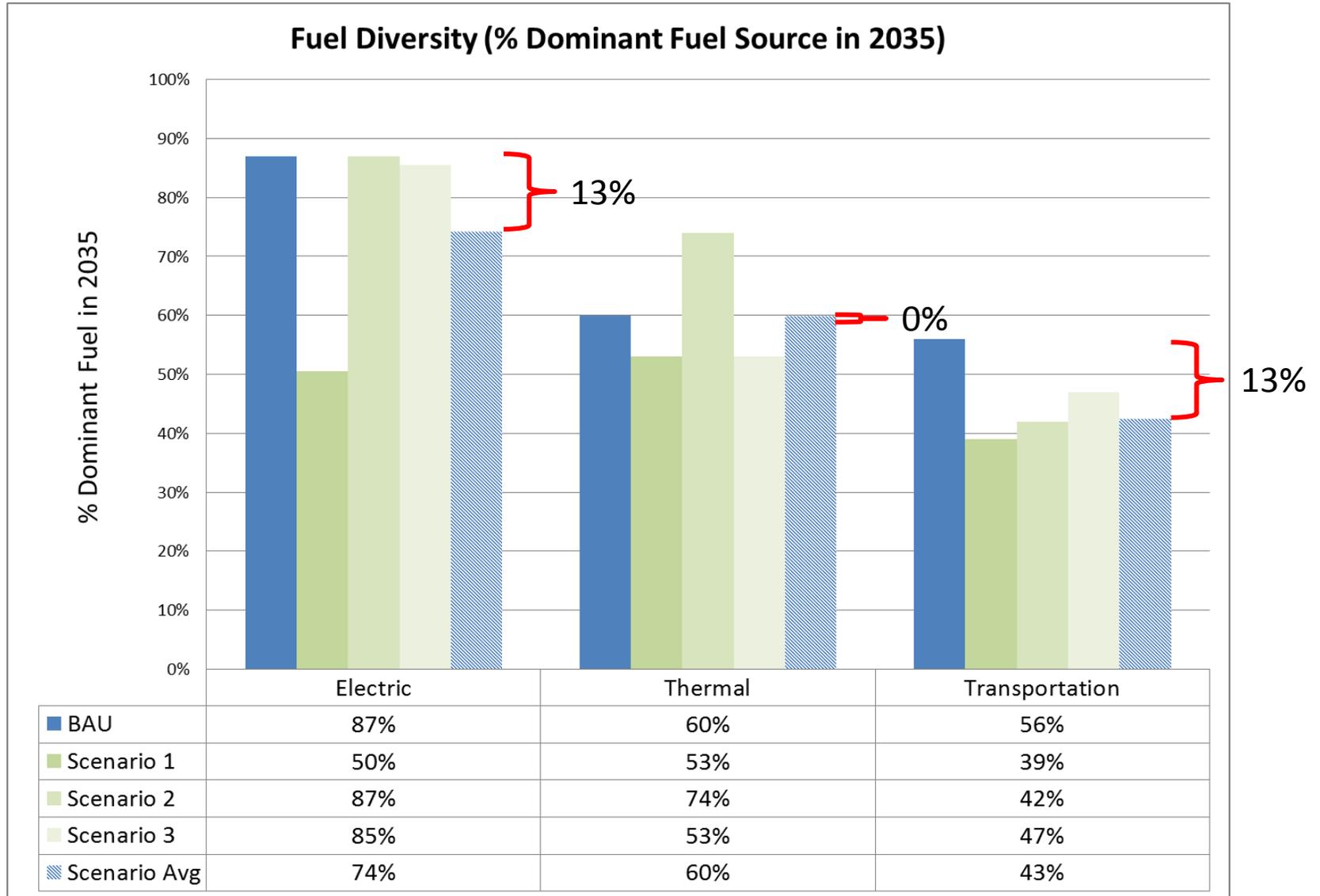
# Analysis & Research Supporting Proposed Goals

- Sources of information:
  - **Results of Navigant Scenario Modeling**
    - *Helps answer → is the goal feasible?*
  - **Best Practices and Goals in Neighboring States**
    - *Helps answer → is the goal reasonable?*
  - **Feedback and Input from Advisory Council**
    - *Helps answer → is the goal right for Rhode Island?*

# Draft Proposed Goals

- Refresher on Scenarios:
  - **Scenario 1: Prioritize Energy Security**
    - Fuel diversification and grid modernization efforts
    - No more than 50% reliance on one fuel in electric sector
    - Aggressive buildout of in-state renewables
    - Expanded fuel choice and diversification in thermal and transportation
  - **Scenario 2: Prioritize Economics**
    - Cost-effectiveness and in-state economic development
    - Large gains in efficiency and fuel switching
    - Emphasis on demand-side transportation resources
  - **Scenario 3: Prioritize Sustainability**
    - Deployment of renewables, thermal alternatives, and vehicle electrification
    - 25% RPS by 2023 and 75% RPS by 2035
    - Zero-emission thermal resource development and promotion of alternative fuel and demand-side resources in transportation

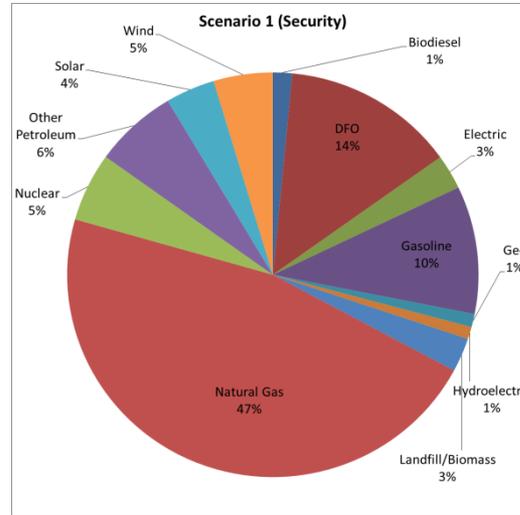
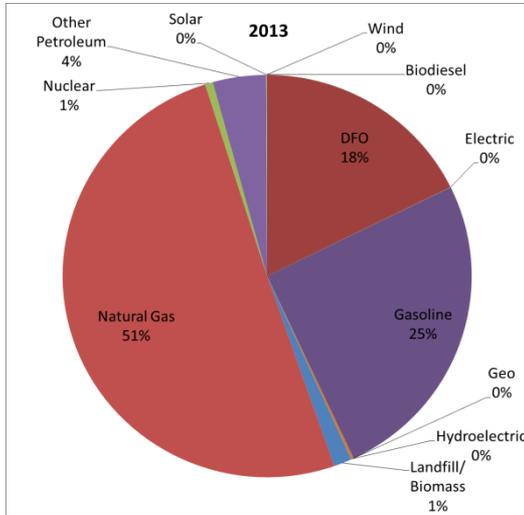
# Fuel Diversity Modeling - Results



\*Scenario average does not include BAU

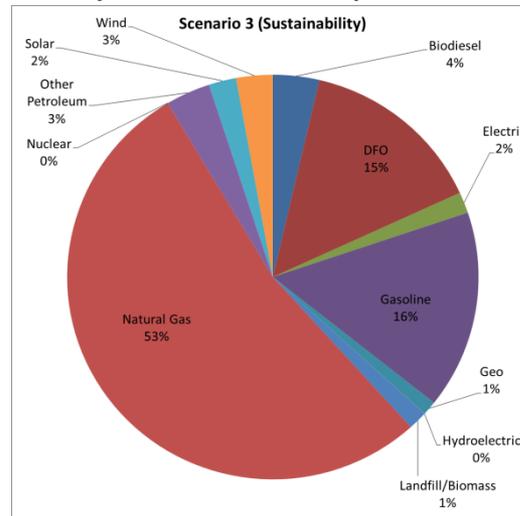
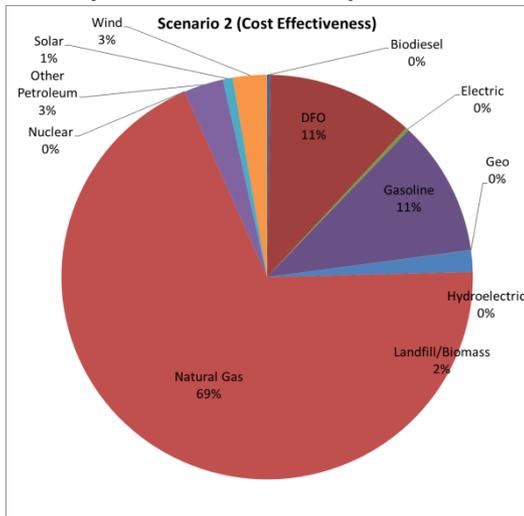
# Fuel Diversity Modeling - Results

## Rhode Island Fuel Consumption 2035 – All Sectors



Economy-wide BBTU consumption = 180,741

Economy-wide BBTU consumption = 142,432



Economy-wide BBTU consumption = 111,058

Economy-wide BBTU consumption = 131,714

- Results show a tension between decreasing natural gas % of total fuel consumption and increasing fuel diversity in transportation sector
- An important link exists between energy efficiency and overall fuel diversity goals

\*Electric sector BBTU fuel consumption was estimated assigning recent power plant heat rate data to corresponding fuel consumption in the future

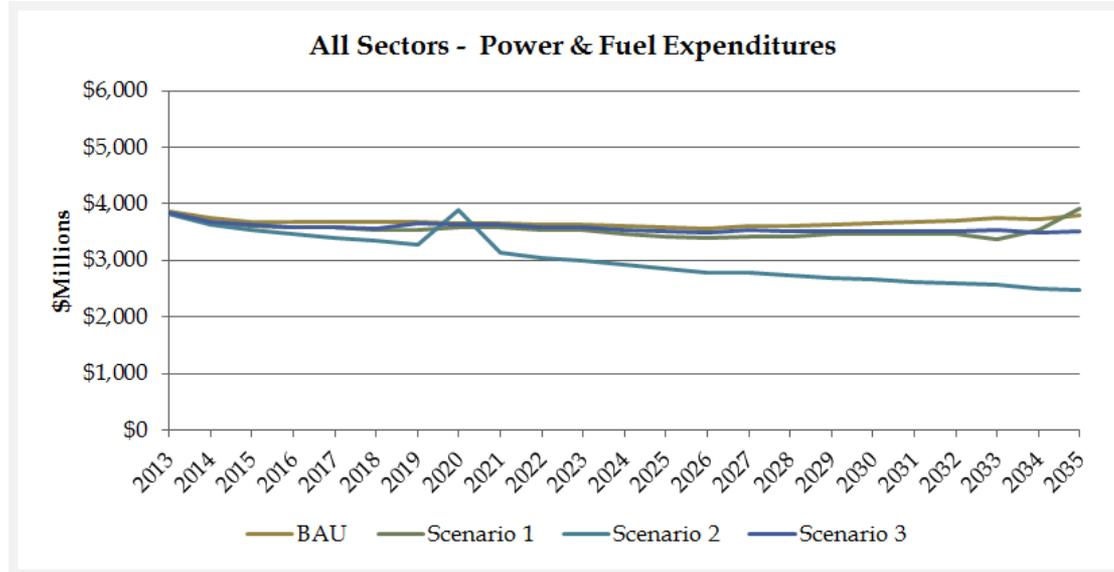
# Fuel Diversity: High-Level Findings

- Navigant's scenario modeling shows that fuel diversity gains are achievable in individual sectors, but difficult to attain on an economy-wide basis
  - Best opportunities to increase diversity are likely in transportation sector
  - More difficult to increase diversity in thermal sector
  - Potential for dramatic (>30%) increases in diversity in electric sector, but likely expensive
- Potential to reduce reliance on dominant fuel by 9% on average (13% in electric and transportation sectors)

# Proposed Fuel Diversity Goal

- **Rhode Island should set a goal of increasing fuel diversity in each sector as measured against a 2013 baseline by 2035**
- **Is it feasible?**
  - The goal is within the range of credible outcomes modeled by Navigant
- **Is it reasonable?**
  - Neighboring states have cited fuel diversity as a desired outcome in their energy policy decisions; NARUC has identified support for fuel diversity as a general principle

# Cost Containment Modeling Results



## Average Annual Energy Costs - Power, Fuel, & Capital Expenditures (Million \$)

### INDIVIDUAL SECTORS - 2035

	<i>Electric</i>	<i>Thermal</i>	<i>Transportation</i>	<i>Total</i>
<b>BAU</b>	902	1,075	1,697	3,673
<b>Scenario 1</b>	1,118	1,067	1,568	3,754
<b>Scenario 2</b>	934	867	1,539	3,339
<b>Scenario 3</b>	1,090	1,039	1,648	3,777
<b>Average</b>	<b>1,047</b>	<b>991</b>	<b>1,585</b>	<b>3,623</b>

\*Average does not include BAU

# Cost Containment Modeling Results

- Navigant’s scenario modeling showed that **economy-wide energy cost containment** is possible even with significant changes to Rhode Island’s energy economy
- Scenarios 1 & 2 are only ~2-3% more expensive than the BAU; All scenarios are less expensive than today
- The electric sector is the only sector where modeled average annual costs exceed the BAU

Average Annual Energy Costs - Power, Fuel, & Capital Expenditures (Million \$)

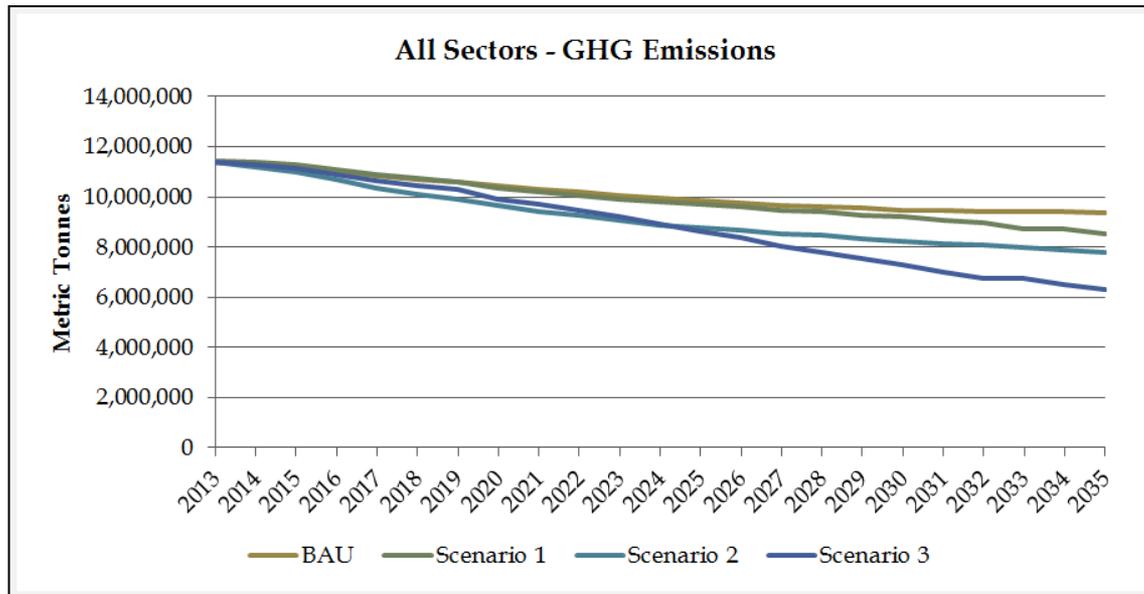
	INDIVIDUAL SECTORS - 2035			Total
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Scenario 3	1,090	1,039	1,648	3,777
Average	1,047	991	1,585	3,623

\*Average does not include BAU; 2013 economy-wide expenditure is estimated at \$3,856

# Proposed Cost Containment Goal

- **Rhode Island should set a goal of containing economy-wide energy costs as measured against a 2013 baseline by 2035**
- **Is it feasible?**
  - The goal is within the range of credible outcomes modeled by Navigant
- **Is it reasonable?**
  - Addressing energy costs is a ubiquitous policy priority in New England and nationwide

# GHG Modeling Results



## GHG Reductions - RI Load Served (% Below 2013 levels)

	ALL SECTORS		INDIVIDUAL SECTORS - 2035		
	2023	2035	Electric	Thermal	Transportation
<b>BAU</b>	12%	18%	23%	20%	12%
<b>Scenario 1</b>	14%	25%	35%	8%	34%
<b>Scenario 2</b>	21%	32%	23%	34%	36%
<b>Scenario 3</b>	19%	45%	56%	40%	40%
<b>Average</b>	<b>18%</b>	<b>34%</b>	<b>38%</b>	<b>28%</b>	<b>37%</b>

\*Average does not include BAU

# GHG Modeling Results

- Navigant’s scenario modeling shows that significant GHG reductions are feasible under 3 distinct scenarios
- The average GHG reduction among the scenarios is 34%
- The results show that it is feasible to reduce RI GHG emissions **~45% below 2013 levels by 2035**

GHG Reductions - RI Load Served (% Below 2013 levels)

	ALL SECTORS		INDIVIDUAL SECTORS - 2035		
	2023	2035	<i>Electric</i>	<i>Thermal</i>	<i>Transportation</i>
<b>BAU</b>	12%	18%	23%	20%	12%
<b>Scenario 1</b>	14%	25%	35%	8%	34%
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<b>Average</b>	<b>18%</b>	<b>34%</b>	<b>38%</b>	<b>28%</b>	<b>37%</b>

\*Average does not include BAU

# What does 45% by 2035 look like?

## Illustrative GHG Reduction Schedule

2013	0.0%		2036	49.7%	
2014	2.2%		2037	51.9%	
2015	4.3%		2038	54.1%	
2016	6.5%		2039	56.2%	
2017	8.6%		2040	58.4%	
2018	10.8%		2041	60.5%	
2019	13.0%		2042	62.7%	
2020	15.1%		2043	64.9%	
2021	17.3%		2044	67.0%	
2022	19.5%		2045	69.2%	
2023	21.6%		2046	71.4%	
2024	23.8%		2047	73.5%	
2025	25.9%		2048	75.7%	
2026	28.1%		2049	77.8%	
2027	30.3%		<b>2050</b>	<b>80%</b>	
2028	32.4%				
2029	34.6%				
2030	36.8%				
2031	38.9%				
2032	41.1%				
2033	43.2%				
2034	45.4%				
<b>2035</b>	<b>47.6%</b>				

- 45% reductions by 2035 corresponds to a 2-2.5% reduction per year, and **sets Rhode Island on pace to achieve ~80% reductions by 2050**
- 80% GHG reductions by 2050 is a generally-accepted target to avoid the worst consequences of climate change

# What have others done?

- Every other northeastern state has adopted a legislative or executive goal ~80% by 2050
- Rhode Island's 2002 Greenhouse Gas Action Plan stated a goal of 75-85% reductions below 2002 over the long-term

State	GHG Reduction Goal	Source
Massachusetts	<b>80% below 1990 by 2050</b>	2008 Global Warming Solutions Act
Connecticut	<b>80% below 2001 by 2050</b>	2008 CT Global Warming Solutions Act
Vermont	<b>75% below 1990 by 2050</b>	10 V.S.A. § 578
New Hampshire	<b>80% below 1990 by 2050</b>	New Hampshire Climate Action Plan (2009)
Maine	<b>75-80% below 2003 long-term</b>	Act to Provide Leadership in Addressing the Threat of Climate Change (2003)
New York	<b>80% below 1990 by 2050</b>	Exec. Order No. 2 (2011); Exec. Order No.24 (2009)
Rhode Island	<b>75-85% below 2002 long-term</b>	Rhode Island Greenhouse Gas Action Plan (2002)

# Proposed GHG Reductions Goal

- **Rhode Island should set a goal of reducing greenhouse gas emissions 45% below 2013 levels by 2035**
- **Is it feasible?**
  - The goal is within the range of credible outcomes modeled by Navigant
- **Is it reasonable?**
  - The goal is in line with policies adopted by neighboring states in the region

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# Next Steps

September

- **Vet Draft Goals**
  - Week of September 16: *Navigant Report circulated to AC*
  - Week of September 23: *Advisory Council comments on goals*

October

- **Vet Plan Recommendations**
  - Friday, October 4 (9-11am): *Thermal Implementation Group*
  - Monday, October 7 (9-11am): *Electricity Implementation Group*
  - Friday, October 11 (9-11am): *Transportation Implementation Group*

November

- **Vet Preliminary Draft Plan**
  - *Advisory Council Meeting to Review Preliminary Draft Plan*

# RISEP Advisory Council #7

Friday, September 6, 2013

## ADVISORY COUNCIL MEETING

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

**Friday September 6, 2013**

**9:00 AM-10:30 AM**

**Narragansett Room**

**RI Economic Development Corporation**

**315 Iron Horse Lane**

**Providence, RI**

#### **ATTENDANCE:**

Advisory Council Members: Julie Gill, Melissa Long, Julian Dash, Doug McVay, Jerry Elmer, Nick Ucci, Ian Springsteel, Jon Hagopian, Stephan Wollenburg, Ben Swanson, Bob Tormey, Bill Ferguson, Jack Leyden, and John Gilbrook

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

Other Attendees & Members of the Public: Charles Hawkins, Pam Mandler, Charity Pennock, Frank Stevenson, Courtney Lane, George Sfinarolakis, Nate Merrill, Michael Rush, Patrick Prendergast, Patrick Cavanagh, Peter Aranha and Seth Handy

#### **AGENDA:**

9:00 Welcome – *Marion Gold, RIOER*

9:15 RISEP Draft Goals – *Danny Musher, RIOER*

10:00 Questions & Discussion

10:20 Public Comment

10:30 Adjourn

#### **Welcome**

**The meeting was called to order at 9:05 AM.** Marion Gold welcomed everyone to the seventh meeting of the RI State Energy Plan (RISEP) Advisory Council (AC). She said that once the AC establishes their long term vision we need to go immediately into next steps to chart a policy pathway. All of the energy issues are very complicated and involve many stakeholders. She then turned the meeting over to Danny M. He introduced two new AC members, Ben Swanson, who will be filling in for Bob Chew and Stephan Wollenberg who will be filling in for Channing Jones.

Danny M. then reviewed the RISEP timeline and the process going forward. Today, as a result of the Navigant modeling and other data gathering, the draft RISEP goals will be reviewed. The final report will emphasize the three areas that the AC has worked on: gathering data; setting goals and recommending action. Currently we are at the second stage—setting goals.

Navigant's final report and data tables will be e-mailed to AC shortly. Over fifty comments were received and address by the project team. The AC now needs to review the final data and give feedback to the project team on the proposed goals for the plan. These goals are based on analysis and research. During the next month implementation groups will meet to discuss policy options. The preliminary draft plan is slated for a November completion.

The purpose of today's meeting is to look at the rationale for the proposed goals and describe the analysis and research that supports those goals. The AC will then provide feedback on these goals. The directional objectives (DOs): security, cost-effectiveness (CE) and sustainability were used as a guide in setting these goals.

Danny M. presented the project team's proposed goal metrics for each criterion of security, cost-effectiveness, and sustainability. The representative goal metric for security is fuel diversity because it is a way of managing risk. It is a way of protecting against harmful impacts of possible supply disruptions. For cost effectiveness, containing energy costs is a good overarching goal metric. Changes in energy costs would impact stability, economic growth and jobs. For sustainability, reducing greenhouse gas (GHG) reductions is the proposed goal. This should lead to other environmental benefits like better air quality, water use and land & habitat improvements.

Danny M. then moved on to describe in detail the proposed targets for each goal metric. The analysis and data used to support the proposed goals are: the Navigant Report; best practices from other states and feedback from the AC. He began with the results of the fuel diversity modeling. In the electric sector you are seeing an average of a 13% reduction across the three scenarios and an average reduction of 13% in the transportation sector. In the thermal sector it is smaller. The reason you are not seeing much change in the sustainability scenario for the electric sector is because it just shows in-state generation capacity. In the thermal sector it is hard to increase fuel diversity; but in the transportation sector it is easier. Natural gas (NG) in the three sectors is currently providing 51% of our energy needs. In the security scenario there is a doubling of NG in the transportation sector. Therefore, there is a challenge to increasing economy-wide fuel diversity, even in the security scenario which prioritized fuel diversity, because of this tension between rising NG in the transportation sector that offsets fuel diversity gains in the electric sector.

The major takeaway the Project Team got from the modeling is that fuel diversity gains are achievable in each sector but are difficult to obtain on an economy wide basis. Our dependence on NG cuts across other sectors. The area with the most opportunity for

diversity is the electric sector but that is also likely expensive. The goal is to increase fuel diversity across all sectors and success will be measured by decreases in the dominant fuel source.

Frank S. asked how Navigant dealt with the unexpected in the future like RGGI and the continuation of the nuclear plants. He mentioned that Vermont was shutting down its nuclear and other nuclear plants in the Northeast are thinking of shutting down. This will impact all of the fuel diversity numbers. Was this potential looked at? It is a major issue with RGGI. Danny M. said that we all recognize that not all contingencies can be predicted; therefore OER will reexamine the RISEP after 5 years. Jon H. said this could create a flaw in the plan if there is a likelihood that nuclear plants could shut down or not be relicensed. If there is a flaw we need to have a backup scenario. Nick U. said that the six New England states are dealing with this and you are going to have these types of retirements and licensing issues and you make the assumption that further retirements in the nuclear industry will be filled by NG. He is also not bullish on these nuclear plants retiring. Julie G. cited a recent development that would enable heating equipment to handle an increase in bio-fuel in heating oil of 25%. This could result in a reduction in the consumption of home heating oil and an increase in bio-fuels. Danny M. said that was good news and said the Navigant report does model substantial increases in bio-fuels.

Danny M. then moved on to cost containment. It is interesting that if you just look at power & fuel consumption alone in the thermal and transportation sectors, the business as usual (BAU) path is the most expensive. This is good news because it means savings in the thermal & transportation sector offset higher costs in the electric sector. A major reason the electric sector is higher than the BAU is increased RPS requirement. The proposed cost containment goal is to contain economy-wide energy costs as measured against a 2013 baseline by 2035. If you include the capital cost for thermal & transportation, economy-wide costs exceed the BAU by only a couple percentage points for Scenario 1 and Scenario 3. Marion G. said that Connecticut has made cost containment their number one goal. Massachusetts puts it behind GHG containment. Regional studies are showing that less gas in the transportation sector could lead to economic benefits.

Julian D. asked how are going to define what costs means. Is it the cost benefit over a lifetime? He asked what was the long term value of renewable energy (RE) outside of its costs? The economic benefit of EE is well documented but it is still a cost to ratepayers. Economic research has been done on the EE side but not the RE side. Danny M. agreed and said that costs do have secondary benefits—and many of these are accounted for in the modeling. OER is taking other steps to do a cost/benefit analysis for RE. Marion G. said that we don't monetize the benefits of GHG reduction.

Ian S. asked if cost containment means keeping cost below the BAU. Danny M. said yes, the goal is to contain costs relative to our costs today. Ian S. asked how we would account for the price of gasoline and diesel doubling due to international conditions. We have no control over that. Dan C. said it was a fair question but it is hard to look into a crystal ball. Danny M. reiterated that the plan will be revisited in five years. Frank S.

said there is tremendous volatility in the NG market. He feels we have to push fuel diversity further to get off our dependence on NG. NG not being available will be a major security issue.

Bob T. said that somewhere in the report you need to point out barriers. RI is not in this alone, ISO-NE dispatches power at the lowest cost because the six states agreed to dispatch economically. If NG is the cheapest, you don't have the option to include wind. Somewhere in the report it should say that no matter what we want to do, we will bump into walls. You need to identify these walls. Danny M. agreed and pointed out that OER and other RI state partners continue to be a part of the regional discussion around issues like distributed generation.

Bill F. said that with NG you have federal regulations and policies that are out of RI's hands. Changes have to be made on the federal level to make sure we have NG supply at a reasonable price. He would like to see it addressed. His second point is that we should have RE in the electric sector in all scenarios because we don't know what is going to happen with the price of NG. We need the infrastructure in place to do more RE. We need to have a bureaucratic process in place so we can ramp up RE if necessary. This is important to the planning process. Stephan W. said that one way to increase fuel diversity is to use less fuel. This is the best hedge against price volatility.

Danny M. then moved on to the GHG modeling. GHG emissions in the BAU are declining due to EE and fuel standards on cars. In all of the scenarios GHG emissions are going down. The modeling also shows that the GHG goals are feasible. The average GHG reduction among the scenarios is 34%. It also shows that it is feasible to reduce GHG emission 45% below 2013 levels by 2035 and this corresponds to a 2-2.5% reduction per year and sets RI on a pace to achieve 80% reductions by 2050. Marion G. said that we had initially set our goal as the 80% reduction by 2050 but a steering committee member said that the modeling does not show this goal specifically. Therefore, a reasonable goal is a 45% reduction by 2035. The other states in the region have similar goals with all NE states looking at 80% reductions either long term or by 2050. The 2002 RI GHG Action Plan calls for a 75-85% reduction below 2002 levels long term. Seth H. asked if all of these reductions are related to energy. Not all, but almost all are related to energy.

Doug M. cited the GHG reduction goal established by the New England Governors and Eastern Canadian Premiers that is in the 2030 timeframe. We may want to consider aligning ourselves with that. Marion G. said it was good point and RI should be consistent with the region. She feels this gets to Bob T.'s point about barriers. Bill F. said that Connecticut made cost containment their number one goal. Marion G. said the public message in Connecticut is clean, cheap and reliable. That is the extent to which they have quantified it. She would encourage the AC to look at the GHG goal as a public message.

Frank S. wanted to make it clear in the plan what economic growth will be over time. You need to establish the assumptions about what the plan says about economic growth.

Jerry E. said we have to establish what it means to contain costs if the population grows. Danny M. replied that he would verify what economic and population growth assumptions were used for the BAU. Stephen W. asked if there was an in-between set of goals that is a type of hybrid. Danny M. said that a hybrid set of goals may be possible and Navigant could model this if the AC thinks it has value.

Danny M. will e-mail the Navigant report to AC members during the coming couple of weeks and the AC will provide feedback on the goals. Sector implementation meetings will be held from 9:00-11:00 AM on October 4<sup>th</sup> for the thermal sector, October 7<sup>th</sup> for the electric sector and October 11<sup>th</sup> for the transportation sector. The goal is to have a draft written product by the end of November to share with the AC.