

Office of Energy Resources EFSB-2015-06 Advisory Opinion

Public Workshop and Comment Opportunity

*Center for Biotechnology & Life Sciences
Ryan Family Auditorium, Room 100
University of Rhode Island (Kingston Campus)*

*July 21, 2016
10:00 AM – 1:00 PM*



STATE OF RHODE ISLAND

**OFFICE OF
ENERGY RESOURCES**

Public Comment

There will be an opportunity for public comment at the end of today's workshop.

If you would like to deliver public comment, please use the sign-up sheets located at the front or rear of the room.

OER also encourages the submission of written comments. Comment may be submitted through August 1st at: DOA.publiccomment@energy.ri.gov

Workshop Overview

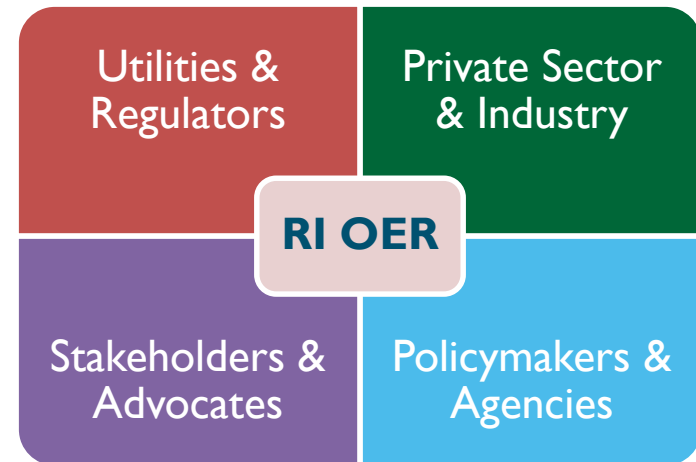
- **Welcome and Introductions**
- **Purpose of Workshop**
- **Background on Proposed Facility & OER Advisory**
- **Technical Presentation on GHG Analysis**
- **DEM's Air Pollution Control Permit Process**
- **Public Comment**

Office of Energy Resources

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



OER is the lead state agency on energy policy and programmatic matters



OER works closely with diverse partners to advance Rhode Island as a national leader in the clean energy economy

Workshop Purpose

- Provide the public with an overview of OER's approach to developing its advisory opinion to the Energy Facility Siting Board
- Provide administrative updates by OER & DEM
- Provide a forum for Public Comment relative to GHG emission-related issues and OER's advisory opinion

Today's workshop will be transcribed and posted on OER's website: www.energy.ri.gov

Background on Proposed Facility and OER Advisory Opinion



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Clear River Energy Center

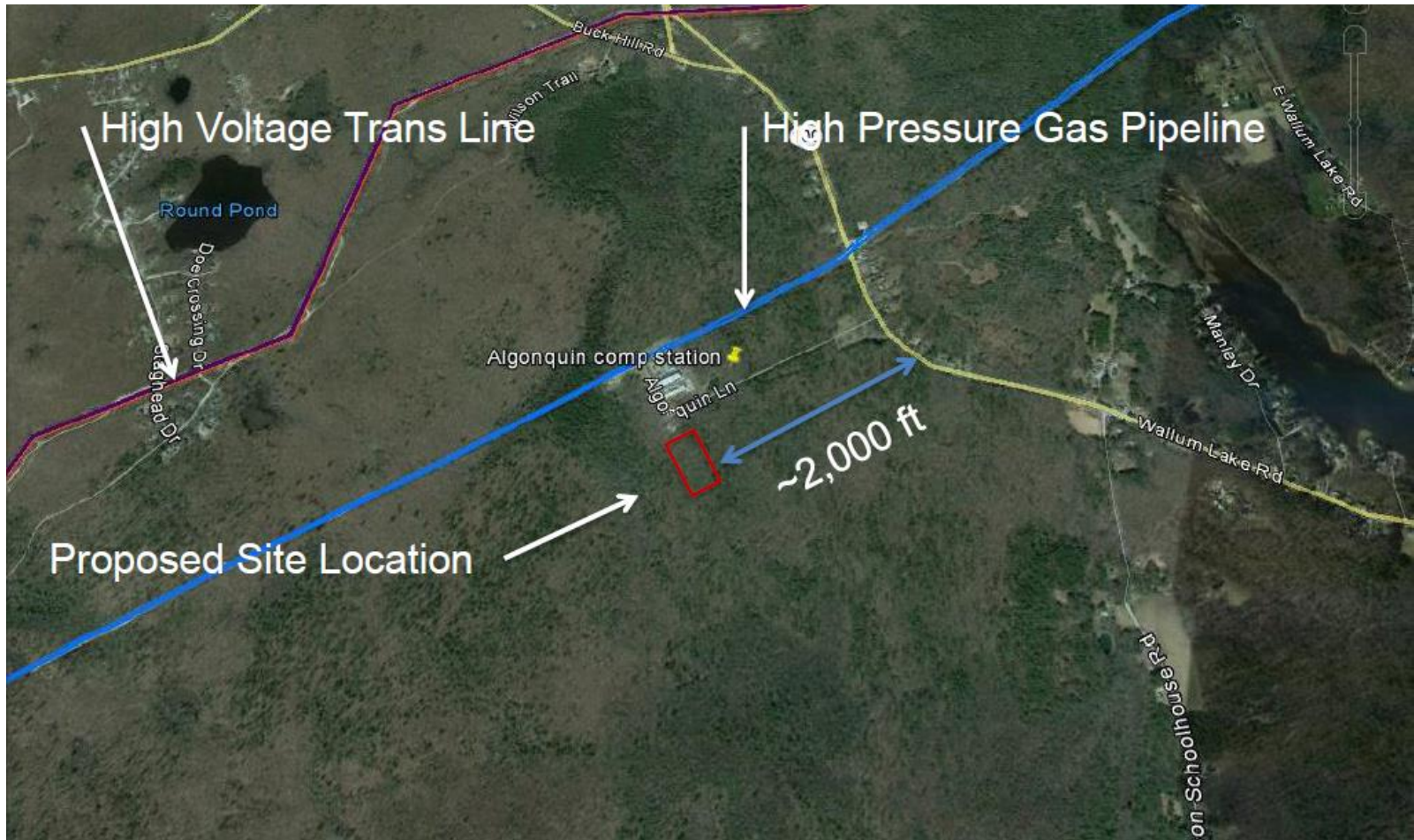
- **≈ 1,000 MW combined cycle power plant, consisting of two generation units:**
 - Primarily fueled with natural gas
 - Ultra-low sulfur diesel as backup fuel when gas not available, stored in 2 on-site tanks, each 1 million gallons
- **36-month construction schedule**
- **Commercial Operation**
 - June 1, 2019 in-service date for Unit 1
 - June 1, 2020 in-service date for Unit 2

Clear River Energy Center

CREC Project Rendering



Project Location in Burrillville



EFSB Advisory Opinions

- The Energy Facility Siting Board (EFSB) has requested Advisory Opinions from twelve (12) local and state agencies on various components of the Clear River Energy Center proposal:

EFSB-2015-06 Advisory Agencies

Public Utilities Commission	Burrillville Planning Board
Department of Environmental Mgmt.	Burrillville Zoning Board of Review
Department of Health	Burrillville Building Inspector
Department of Transportation	Burrillville Tax Assessor
Statewide Planning Program	Pascoag Utility District
Office of Energy Resources	Historical Preservation & Heritage Comm.

OER Advisory Opinion

- **EFSB tasked OER to collaborate with the RI Executive Climate Change Coordinating Council (EC4) and DEM to examine:**
 - The impacts of the Facility on anticipated greenhouse gas emissions...and the cumulative impact over the life of the project...
 - Whether the Facility will conform to the requirements and provisions of the Resilient Rhode Island Act...and state energy policies

EC4 & Resilient RI Act

- **EC4 established through Resilient RI Act (§42-6.2) with responsibility and oversight relating to assessing, integrating, and coordinating climate change efforts across state government**
- **The Act requires EC4 to develop a plan/strategies (by Dec 31, 2016) to meet the following GHG reductions:**
 - Ten percent (10%) below 1990 levels by 2020
 - Forty-five percent (45%) below 1990 levels by 2035
 - Eighty percent (80%) below 1990 levels by 2050

OER Advisory Opinion

- **To support development of its advisory opinion, OER proposed to hold a Public Workshop and accept public comment:**
 - EC4 endorsed this process at its May 11th meeting
 - OER will report back to EC4 in August
- **OER contracted with Levitan & Associates to provide consultant services relative to its advisory opinion on potential GHG and state energy policy impacts**
- **OER has no permitting authority related to this project.**

Upcoming Timelines

- OER Public Workshop on GHG Impacts on July 21
- OER reports to EC4 in August
- All Advisory Opinions due to EFSB on September 10
- EFSB Hearings throughout October – early-December
- EFSB Open Meeting (decisional) to follow hearings

Please note that the EFSB has not yet set a final procedural schedule beyond September 10. Dates are subject to change.

Please visit EFSB website for more information:
www.ripuc.org/efsb/2015_SB_6.html

Technical Presentation on GHG Analysis



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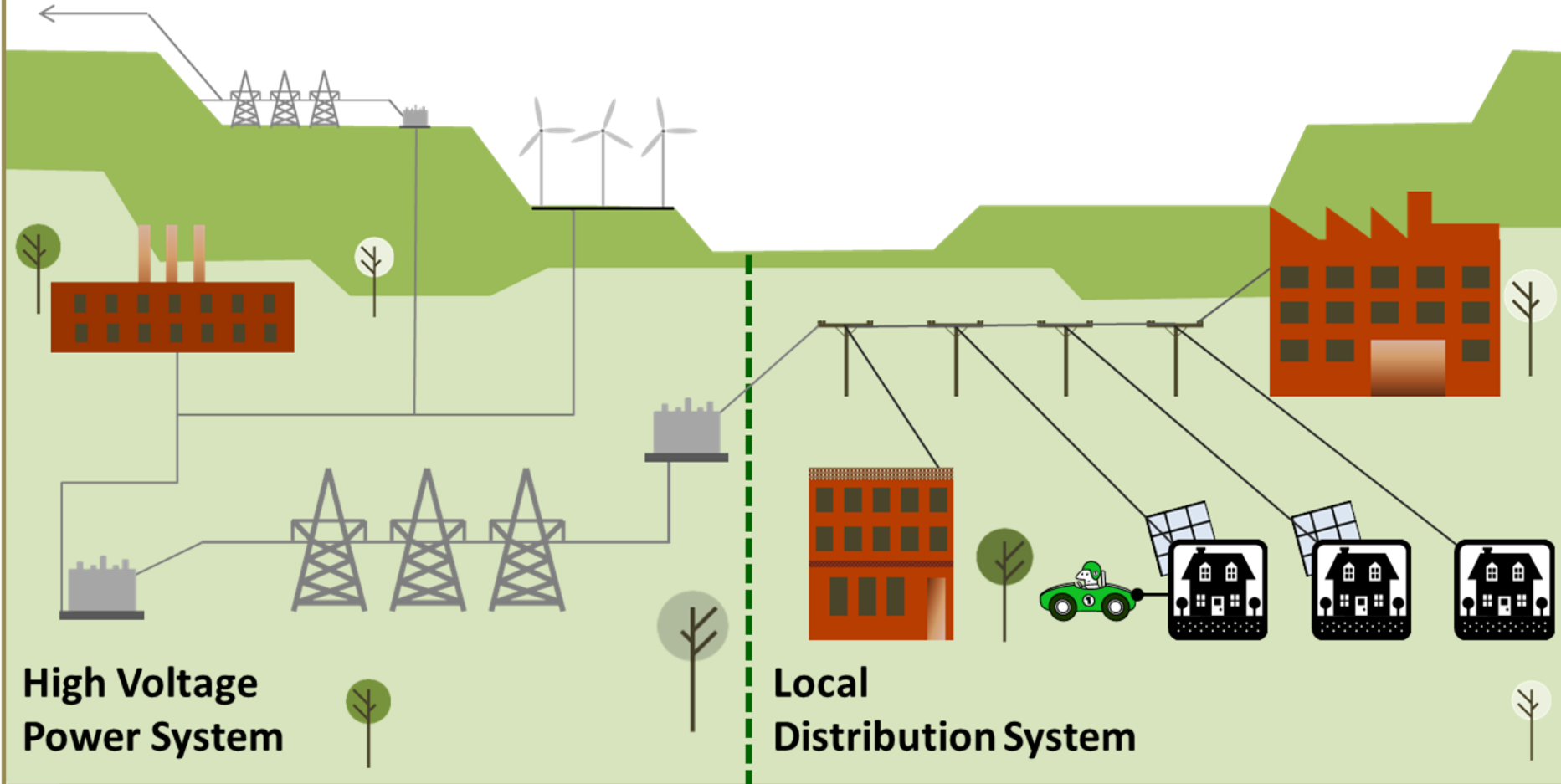
Framing the Issue

- **Overview of the New England energy system**
- **Accounting for GHG emissions on a regional basis**
- **Current levels of GHG emissions and the state's long-term goals**

New England's Energy System

- **Regional electric power grid serves the six New England states**
 - \approx 350 power plants provide 31,000 MW of generating capacity
 - \approx 8,500 miles of high voltage transmission lines
- **Transmission lines and related equipment carry bulk power from generators to local distribution systems**
- **Local distribution systems deliver power to homes and businesses across New England**
- **Power plants and transmission system create a pooled, interconnected system to provide highly reliable electric service**

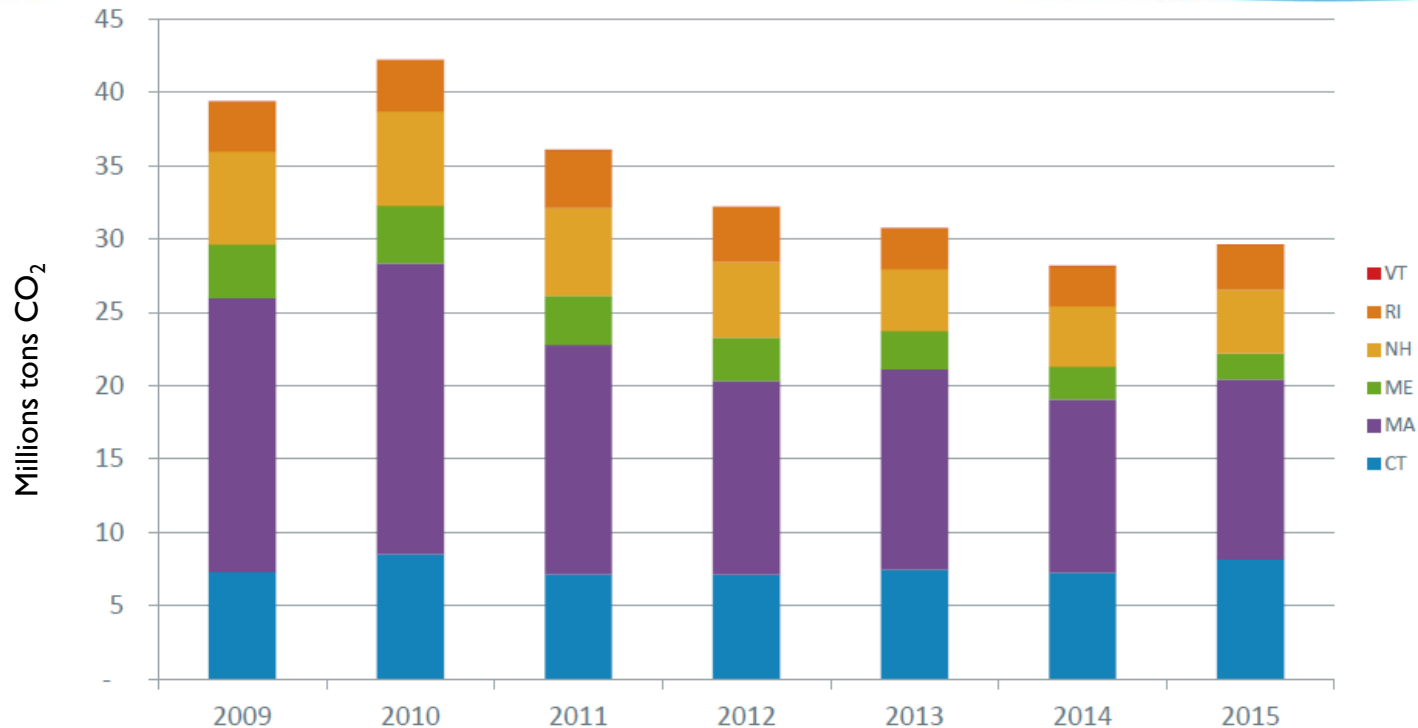
Interconnections to NY, Quebec, New Brunswick



**High Voltage
Power System**

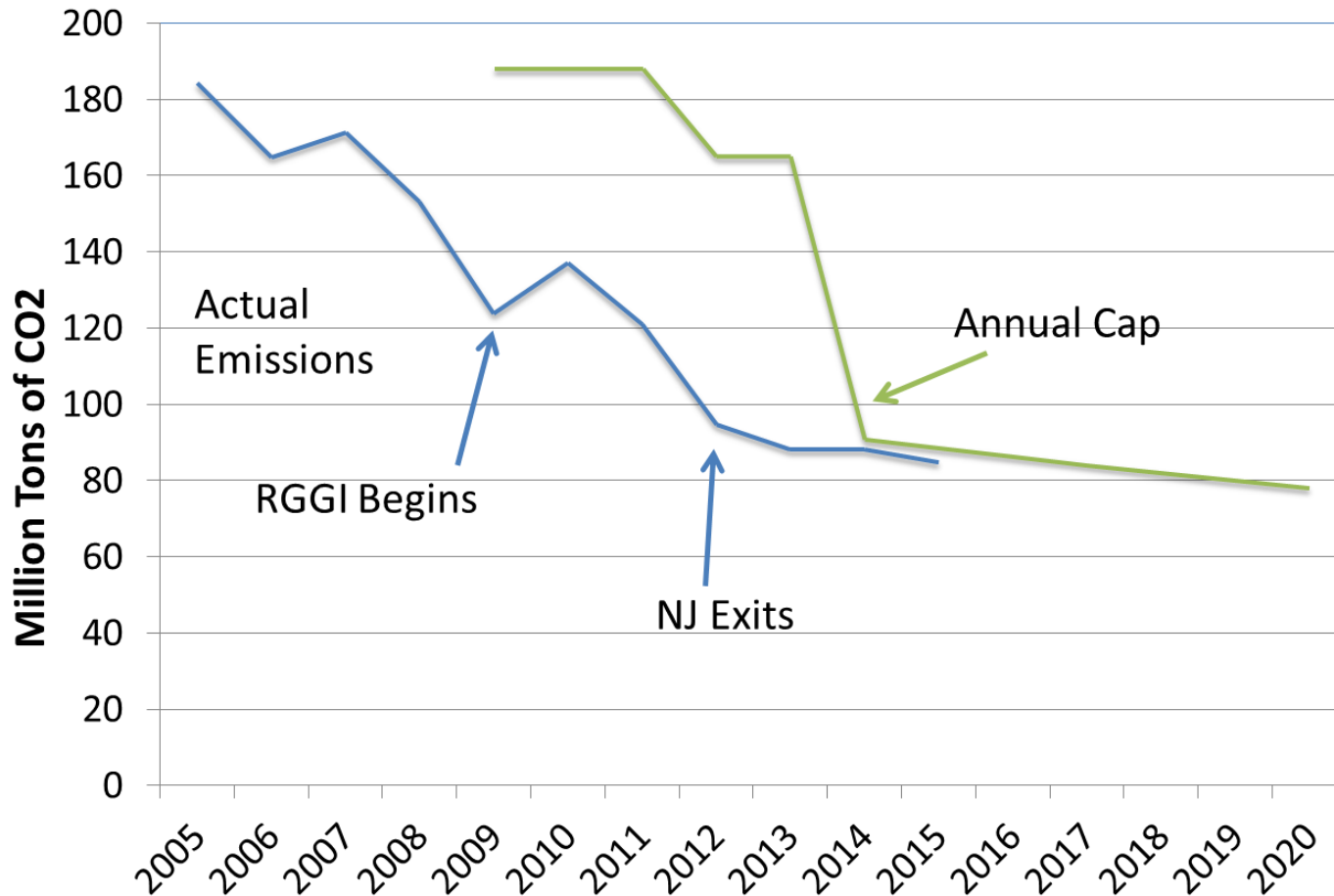
**Local
Distribution System**

Regional Emissions



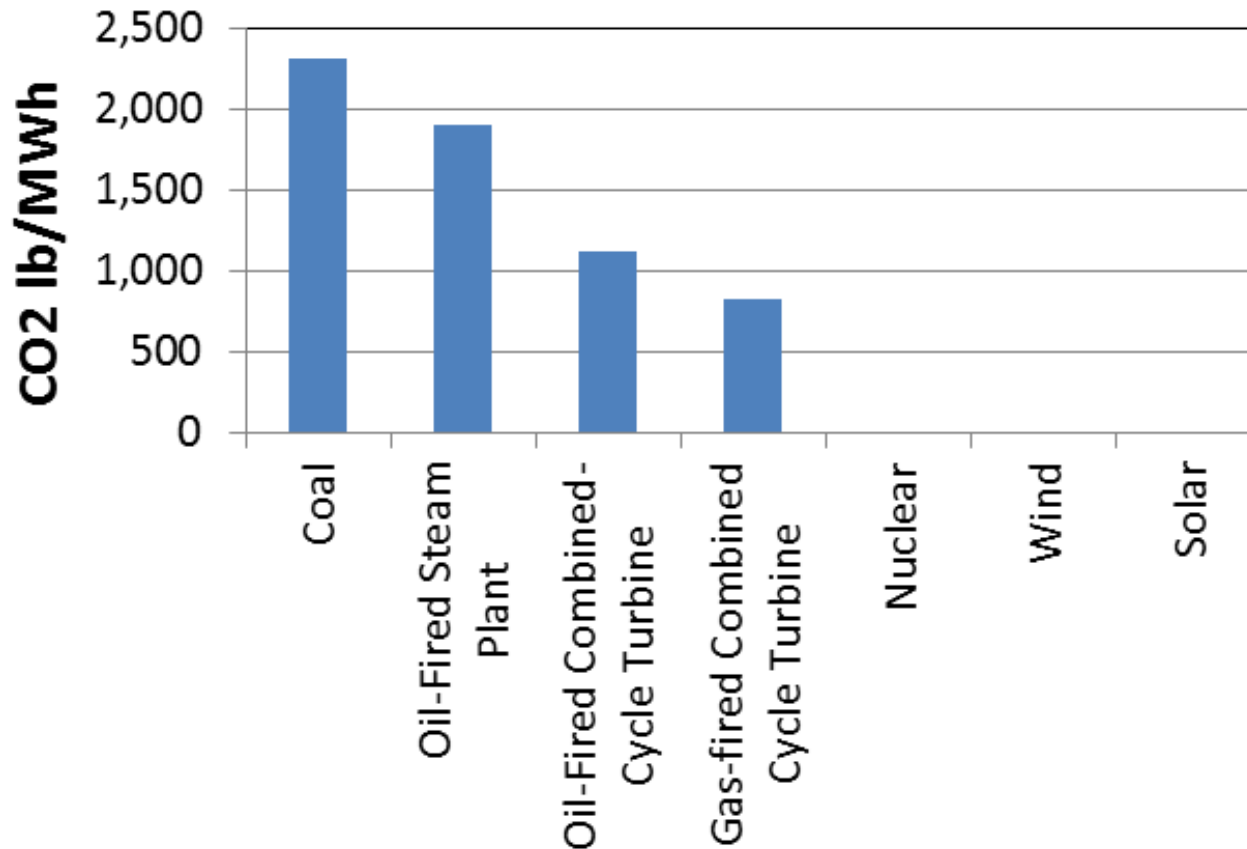
- ISO-NE monitors, but does not manage, regional emissions of GHG from power plants
- 9 Northeast states cooperate to reduce GHG's from the power sector through the Regional Greenhouse Gas Initiative (RGGI)

RGGI Annual CO₂ Cap



ME
NH
VT
MA
RI
CT
NY
MD
DE
DC

Typical Plant Emissions



Electric Sector GHG Accounting

- **Two options for measuring GHG's in the electric sector:**
 - “Generation-Based” Accounting
Emissions from in-state power plants
 - “Consumption-Based” Accounting
Emissions associated with electricity used in-state
- **New England has a regional electric grid, so the two values are not always the same**

Consumption-Based Approach

- **OER will apply consumption-based approach**
 - Consistent with EC4 decision in May 2016
 - More realistic representation of regional nature of electric grid, including cross-border transfers
 - Aligns with State policies that incentivize energy efficiency, preference for renewable energy
 - State does not control dispatch of generating resources (other than enforcing certain permit limits)
 - Some renewable resources under contract with RI utilities are located out-of-state
 - Consistent with approaches in MA and CT
 - Consistent with design of Regional Greenhouse Gas Initiative (RGGI)

Assignment #1

What will be the impact of CREC on GHG Emissions resulting from the proposed facility, and cumulative impact over life of project?

Invenergy and PA Consulting Assertions

“The project will enable the transition away from older, less-efficient, and polluting coal and oil plants, which will lower emissions of CO₂ by removing 1,019,000 tons of CO₂ from the air annually”

Table 5.2-1

Project Impact on Total Emissions Reductions on ISO-NE/NYISO Footprint
% Change

	2019	2020	2021	2022	2023	2024	2025
CO ₂ Emission Change	-1%	-1%	-1%	-1%	-1%	-1%	-1%
NO _x Emission Change	-2%	-3%	-3%	-2%	-3%	-2%	-3%
SO ₂ Emission Change	-3%	-4%	-4%	-3%	-3%	-2%	-3%

Key Questions

- **How did PA Consulting arrive at these conclusions?**
- **What models or tools were used to analyze the regional electric system?**
- **What assumptions were used to analyze and forecast operation of CREC and its emissions?**
- **What assumptions were used to model the region's electric system?**
- **Are the assumptions reasonable?**

Sources of Data and Information

- **Invenergy's Application (DPU Docket #4509)**
 - PA Consultants' analysis of operation and emissions
 - Written testimony filed by intervenors
- **Information requests to Applicant**
- **ISO New England, NYISO**
 - System resource and markets databases to validate model parameters

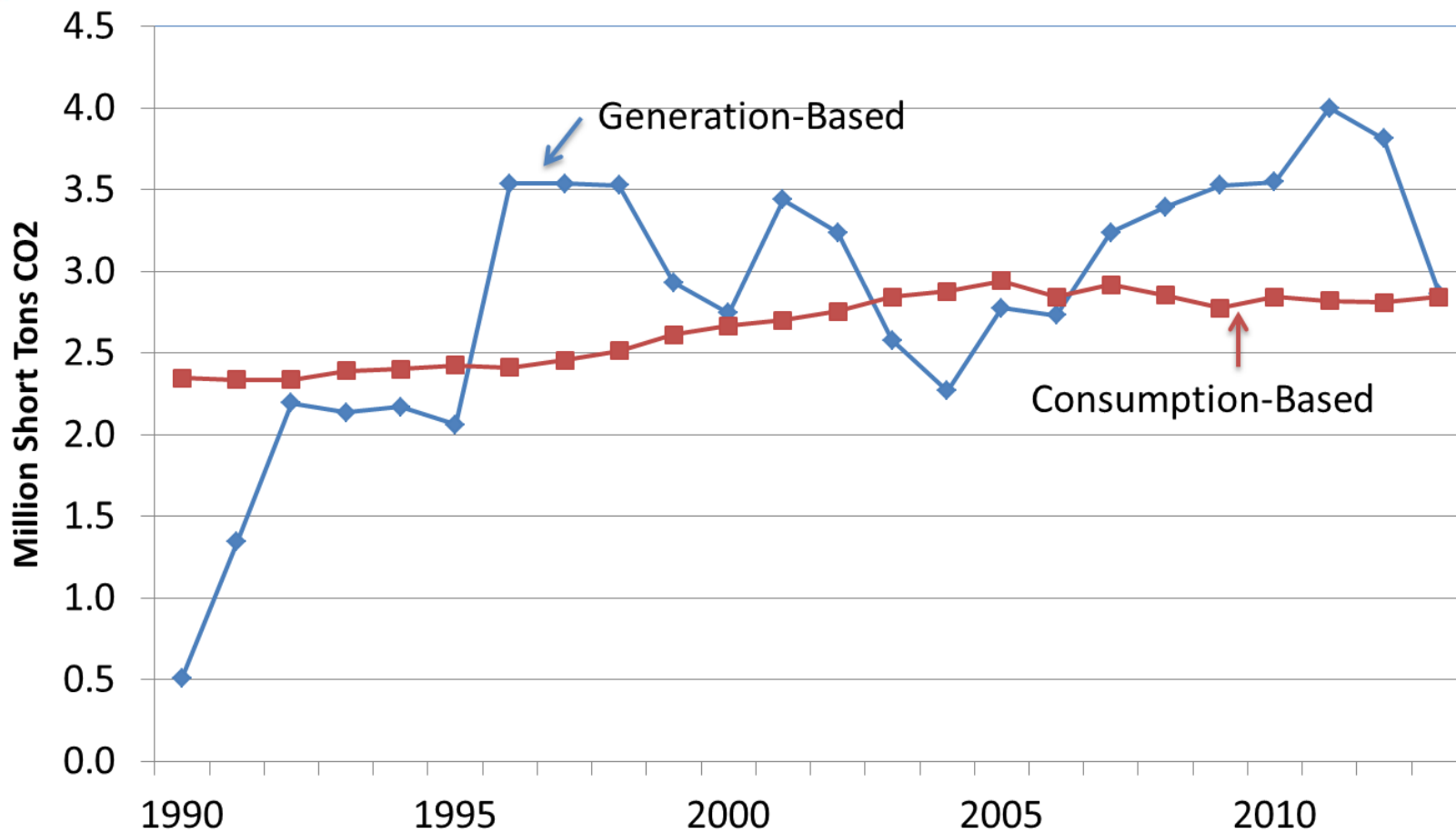
Assignment #2

Examine consistency with State Energy Laws and Policies

Resilient Rhode Island Act

- R.I. Gen. Laws §§ 42-6.2-1 to 42-6.2-8
- Charges EC4 with developing *economy-wide* plan to meet GHG reduction targets
 - Reductions relative to 1990 baseline
 - 10% by 2020
 - 45% by 2035
 - 80% by 2050
- Plan due by end of 2016
 - NESCAUM under contract to develop GHG Study

RI GHG Emissions from Electric Power Sector



Consumption-based Accounting

Table 1-1
2013 and 2014 New England System Emissions (ktons)
and Emission Rates (lb/MWh)

Annual System Emissions						
	2013 Emissions (kTons)	2014 Emissions (kTons)	Total Emissions % Change	2013 Emission Rate (lb/MWh)	2014 Emission Rate (lb/MWh)	Emission Rate % Change
NO _x	20.32	20.49	0.8	0.36	0.38	5.6
SO ₂	18.04	11.68	-35.3	0.32	0.22	-31.3
CO ₂	40,901	39,317	-3.9	730	726	-0.5

- **EC4 will use more detailed calculations based on Rhode Island's share of regional generation by technology type and associated emission factors**

Source: ISO-NE 2014 Emissions Report

RI Energy Laws and Policies

- **Related to Energy Efficiency:**
 - Least Cost Procurement (2006)
 - Revenue Decoupling (2010)
- **Related to Renewable Energy Resources:**
 - Renewable Energy Standard (2004)
 - Long Term Contracting Standard for Renewable Energy (2009)
 - Distributed Generation Standard Contracts Program (2011)
 - Net Metering (2011)
 - Renewable Energy Growth Program (2014)
 - Affordable Clean Energy Security Act (2014)
- **Related to GHG reductions**
 - Regional Greenhouse Gas Initiative Act (2007)
 - Biodiesel Heating Oil Act (2013)

Key Questions

- How will potential CO₂ savings due to CREC help Rhode Island meet its GHG reduction targets?
- How will operation of CREC affect operation of other fossil-fired plants in the State and region?
- Will development of CREC affect the viability of less efficient fossil-fired plants?
- Will development of CREC affect expansion of renewable resources in the State and region?
- Will development of CREC affect the ability of the State to implement energy efficiency?
- Will CREC contribute to the goals of RGGI and other carbon-reduction laws and policies?

Data Sources

- **Narragansett Electric Co.**
 - Contracts with renewable resources
 - Energy Efficiency programs and incentives
- **ISO-NE**
 - System operations and fuel mix
- **RI DEM**
 - Air permits for CREC and other plants
 - GHG inventories
- **U.S. Energy Information Administration**
 - Energy sales by sector
 - GHG emissions by sector
- **U.S. EPA – power plant emissions database**
- **RGGI**
 - Allowance auction results
- **Public Comment will also be considered**

DEM's Air Pollution Control Permit Process

Public Workshop

Rhode Island Office of Energy Resources

July 21, 2016



RHODE ISLAND DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT

Background

- The Air Pollution Control Permit process is a permitting function under the delegated authority of the Clean Air Act and therefore DEM is the permitting authority under the Energy Facility Siting Act, not the Energy Facility Siting Board. (§42-98-7(a)(3))
- The Air Pollution Control Permit required for the Clear River Energy Center is called a major source permit and is required before construction of the source begins.
- The requirements that must be satisfied to obtain a major source permit are contained in DEM's Air Pollution Control Regulation No. 9, Sections 9.4 and 9.5



Major elements of the application/review.

- Control technology review: Purpose is to determine that the Source incorporates the best available control techniques for the air pollutants emitted.
- Air Quality Impact Analysis: This analysis combines an assessment of existing air quality and predictions, using air dispersion modeling, of the impacts of the proposed source and nearby sources. The purpose is to show that emissions from the proposed source will not cause or contribute to violation of air quality standards.



Major elements of the application/review.

- Health risk assessment: The purpose is to calculate risks associated with exposures to pollutants via multiple pathways (not just inhalation of air pollutants) and the cumulative health impact of exposures to multiple pollutants.



Status of permit application

- The application was determined to be administratively complete as of March 29, 2016.
- Administratively complete means that the application contains all of the required elements and in sufficient detail for DEM to begin the review process.



Expected timeline for review

- DEM is in the early stages of its review of the application and expects to complete the review in December 2016.
- The permit process does include the opportunity for public comment and a public hearing. It is expected that the public comment/public hearing aspect of the process will occur in February/March 2017.
- A final determination to issue or deny the permit is expected in May 2017.



Questions?

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Public Comment



STATE OF RHODE ISLAND

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Written Public Comment

- Electronic submittals are encouraged, and will be accepted until 4:00 PM, Monday, August 1, 2016 at:
DOA.publiccomment@energy.ri.gov

- Comments may also be mailed to:

Attn: Advisory Opinion Public Comment

RI Office of Energy Resources

One Capitol Hill, 4th Floor

Providence, Rhode Island 02908

Public Comment

- **Speakers should limit their comments to GHG-related issues relative to OER's advisory opinion, as discussed during today's presentation**
- ***Please note:***
 - *OER has no permitting authority related to the proposed facility*
 - *OER will not be accepting sworn testimony*
 - *OER will not be cross-examining members of the public, but may opt to respond to comments and/or ask clarifying questions*

Public Comment

- Today's meeting is being transcribed. To assist the stenographer, **please speak in a clear voice.**
- When called upon, **please state your name and where you reside.**
- To enable each member of the public to contribute their comments, **each participant will be given three (3) minutes to speak.**
 - *If you require more time, you may submit your full comments to OER by email or through U.S. Mail.*

Thank you for your participation and courtesy.

Written Public Comment

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**Thank you for attending
today's Public Workshop**

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