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Invenergy Clear River Energy Center

TEC-RI
April 6, 2016

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Invenergy Corporate Overview

- Invenergy is *innovation* in *energy*. Deeply experienced and entrepreneurial in our core, we provide power generation and storage solutions to address the energy challenges facing our communities and our customers. We believe in clean, sustainable energy.

- We develop. We build. We own. We operate.

- We have over 12,000 MW of assets that includes projects that are under construction, under contract or build-transfer.

- Invenergy is the largest independent wind power company in North America (4th overall).

- Invenergy is the largest operator of energy storage systems in the U.S. (Winner of the 2015 ESNA Innovation Award for Centralized Storage.)

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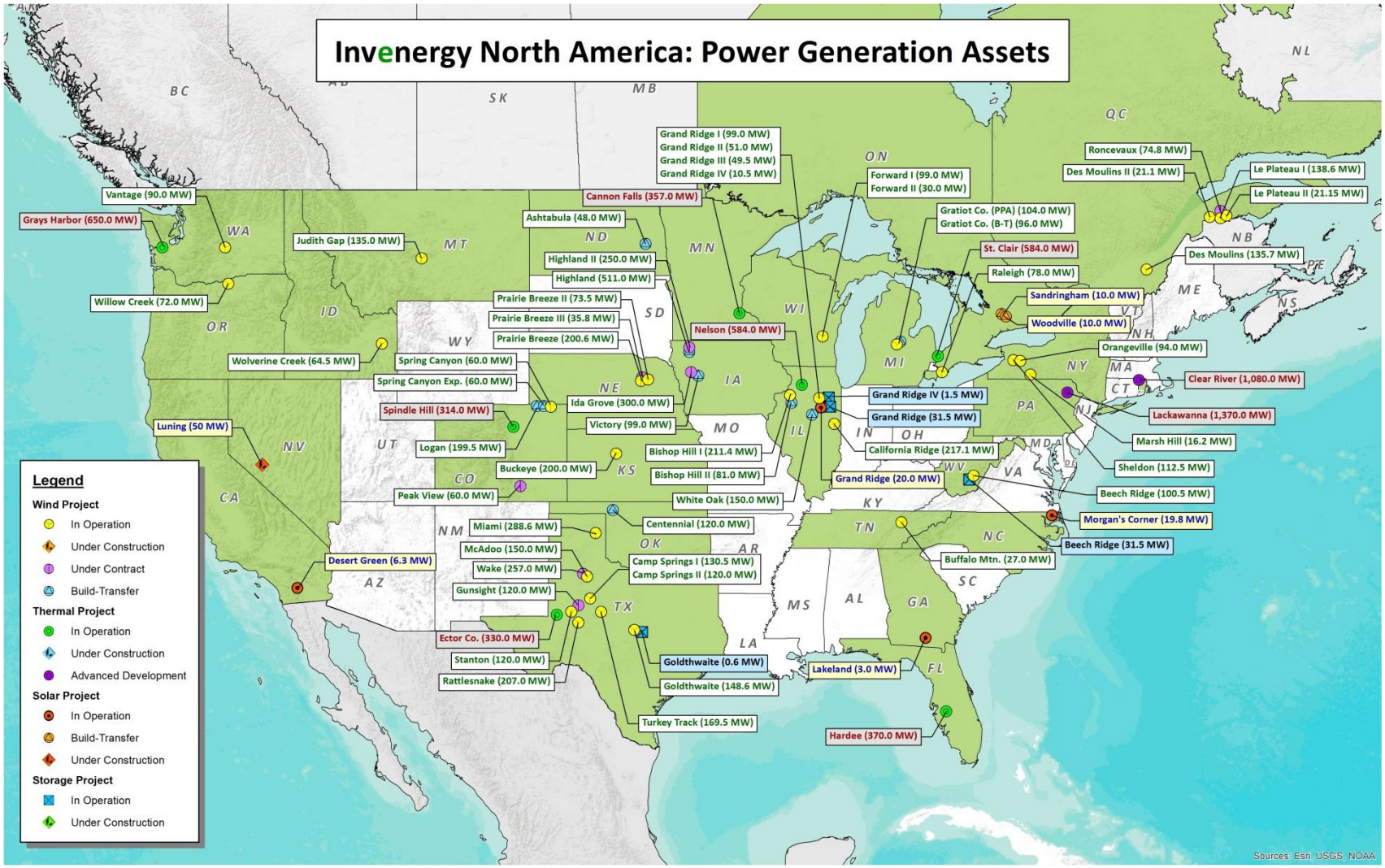
Invenergy has developed over 12,000 MW of utility-scale projects globally; our North American portfolio exceeds 9,500 MW



As of December 1, 2015; includes projects that are under construction, under contract, or build-transfer and in advanced development

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Invenergy Overview

Plants in Operation:

- We have developed 64 wind projects, totaling almost 7,700 MW
- We have developed seven solar projects, totaling over 119 MW
- Invenergy's energy storage portfolio includes 68 MW of projects in operation or construction
- Invenergy operates over 3,100 MW of natural gas-fired plants

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Invenergy operates over 3,100 MW of natural gas-fired plants

- Natural gas is the fuel of choice for Invenergy's thermal power facilities, which use the most efficient technologies available to minimize environmental impact
- Invenergy operates seven natural-gas power plants in the U.S. and Canada
- The company has recently completed the 584 MW Nelson combined cycle plant in Illinois and the 330 MW Ector County peaker in Texas

Project	Type	Location	COD	Size of Facility
Hardee	Combined Cycle	Florida	Acquired 2003	370 MW
Spindle Hill	Peaker	Colorado	2007	314 MW
Grays Harbor	Combined Cycle	Washington	2008	620 MW
Cannon Falls	Peaker	Minnesota	2008	357 MW
St. Clair	Combined Cycle	Ontario	2009	584 MW
Nelson	Combined Cycle	Illinois	2015	584 MW
Ector County	Peaker	Texas	2015	330 MW
			Total:	3,159 MW

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Clear River Energy Center Overview

- Clear River Energy Center ("CREC")
- Approximately $700 Million investment
- Combined Cycle Advanced Technology:
  - Two single shaft "H" Class combined cycle units with output up to 1,000 MW
  - Air cooled condensers require minimal water
  - Dual fuel capability (natural gas and oil back up)
- June 1, 2019 Commercial Operation date for Unit 1, June 1 2020 for unit 2
  - 36 Month Construction Schedule
- Water supply from Pascoag Utility District
- Discharge to Burrillville waste water treatment plant
- Remote Site with proper zoning
  - Site control through land purchase option agreement
  - Location has on site high voltage power lines (345kV, NE ISO Queue #489) and interstate high pressure gas

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CREC Project Rendering

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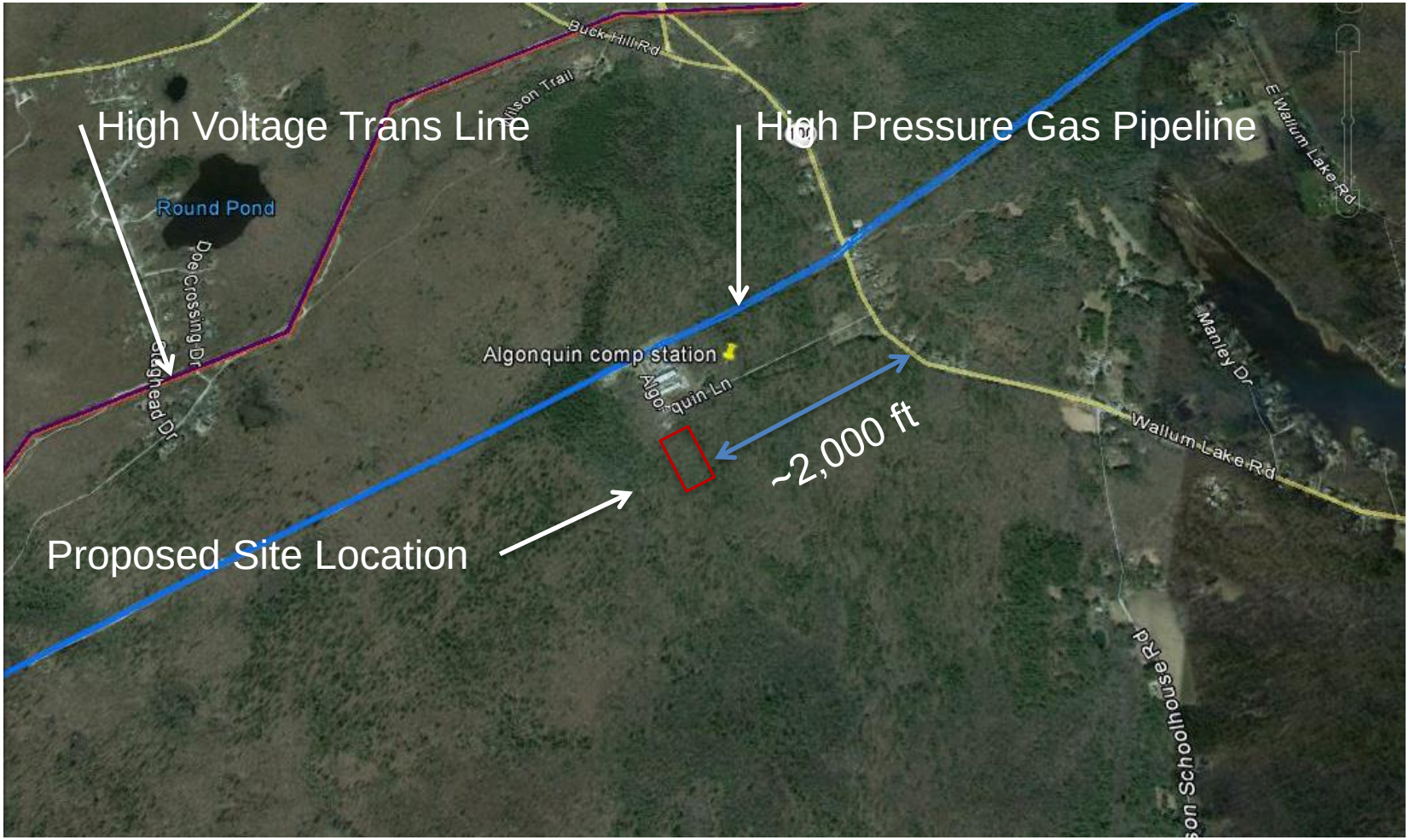
Project Location Burrillville, RI



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Benefits of the Clear River Project

Developing the Clear River Energy Center will…

- Create local, well-paying jobs
- Generate millions in revenue for Burrillville
- Help to save money on electricity bills
- Clean up a contaminated aquifer
- Address New England's emerging energy needs
- Support the integration of more renewables
- Reduce regional air emissions from the power sector

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Job Creation & Tax Revenues

- Development of the Clear River Energy Center will…
  - Create approximately **350** Building Trade Unions jobs and **25** permanent and local high-paying jobs
  - Contribute more than **$3.5 million** annually during operations to the local economy in employee salaries
  - Generate **millions of dollars for Burrillville** every year in new tax revenue, which can be used to support schools, libraries, police and fire services

Electricity Savings & Water Benefits

- By displacing older, inefficient plants, this project is estimated to save consumers **$280 million** in total on electricity bills between 2019 and 2022

- The Clear River project will invest in treatment systems and upgrades to clean up and use water from a contaminated well in the Pascoag Utility District. **This will help to clean up the aquifer**.

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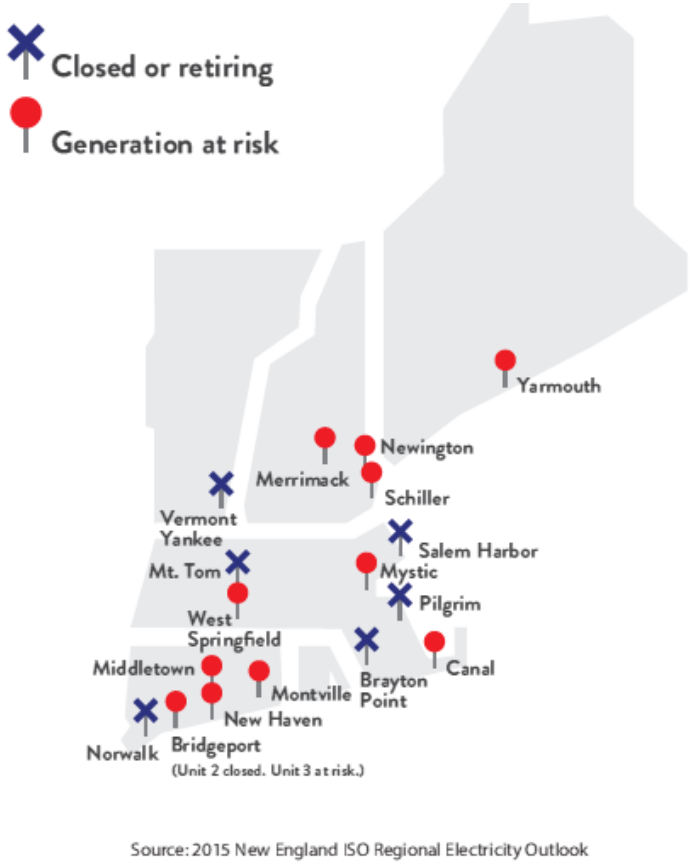
Meeting New England's Energy Needs



Source: 2015 New England ISO Regional Electricity Outlook

- Replace Older Plants; a high percentage of the existing generation plants are more than 50 years old. **Retirements could total 10,000 MW**
  - 4,200 MW have already retired or will before 2019
  - Additional 6,000 MW identified "At Risk" by ISO-NE
- New resources are **needed to fill the potential retirement gap** as well as improve overall system performance
  - Southeastern New England (i.e. Boston, RI, and Cape Cod) is especially vulnerable. Grid operators say local resources and transmission may not serve the local demand.

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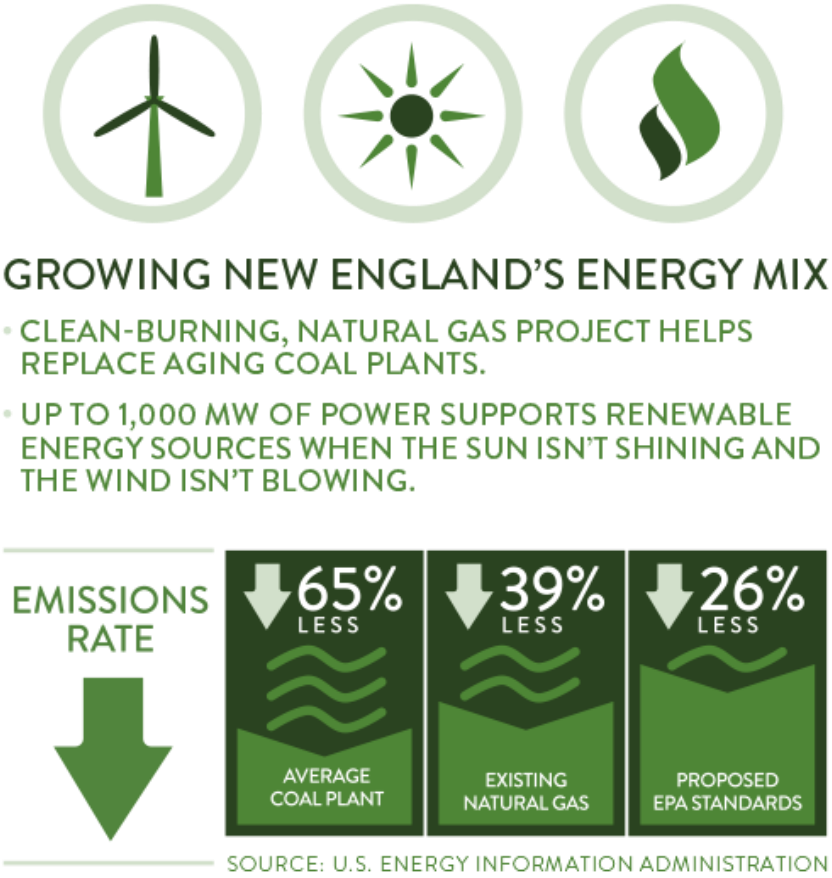
Supporting Renewables, Reducing Emissions

- Natural gas plants like Clear River can quickly **provide power when renewable resources can't**. Their capacity makes it possible to bring more renewables online in New England.

- The project will let us transition away from older, less-efficient and polluting coal and oil plants. That will avoid harmful emissions, as this table shows:

Pollutant	Avoided Tons / Year
CO_2	1,019,000
NOx	2,240
SO_2	2,762

- Clear River will be amongst **the cleanest, most efficient natural gas plants in the country**.



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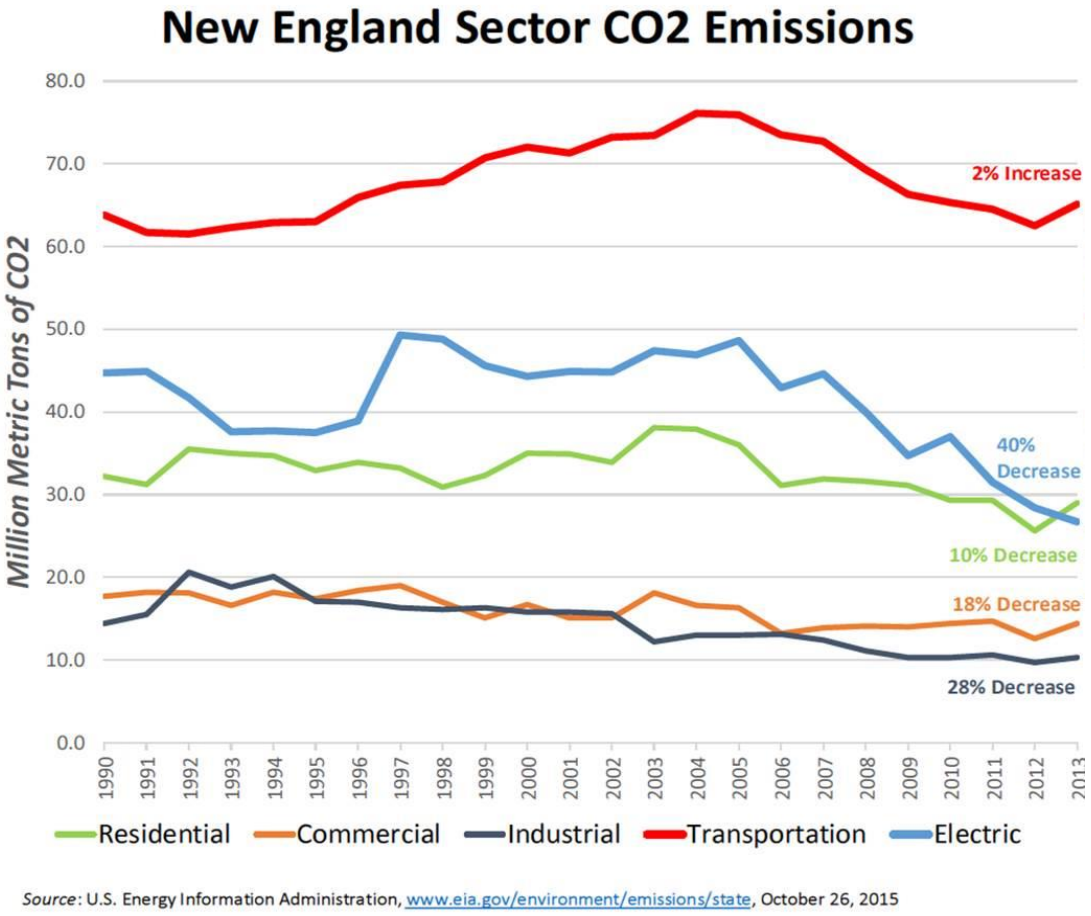
Natural Gas & Emission Reductions



Source: U.S. Energy Information Administration, www.eia.gov/environment/emissions/state, October 26, 2015

- Increased use of natural gas in New England's electric sector has resulted in falling CO2 emissions
  - Chart shows **40% drop in emissions**
- No sector has achieved greater emission reductions in the past 25 years

CREC & The Resilient Rhode Island Act

- Development of the Clear River Energy Center will help Rhode Island meet the Resilient Rhode Island Act.
  - The Act creates economy wide – not plant or sector specific – goals for emissions reductions. It's about what RI does overall.
  - CREC will allow for the integration of more renewables in Rhode Island and New England's grid, helping to meet the goals of this Act
- The Resilient RI Act is similar to the Massachusetts Global Warming Solutions Act. In 2013, the Massachusetts EFSB evaluated a similar proposal for the 690MW Footprint natural gas plant in light of that Act. Their conclusion:

  *"New England fossil fuel units would be displaced by Footprint and would yield GHG and criteria pollutant emissions reductions on a net basis under any modeling scenario… **the overall trend of reduced emissions is not in doubt**."*

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CREC – Interconnections

- Water
  - Supplied from Pascoag Utility District Well 3A via a dedicated water line
- Waste Water
  - Discharged to municipal treatment facility via new force main
- Electricity
  - Connection into regional transmission grid via a nearby right-of-way
- Natural Gas
  - Delivered from the adjacent Algonquin pipeline

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CREC Water Supply

- Water for the plant will be supplied by Pascoag Utility District Well 3A
  - This well has been contaminated and unusable since 2001
  - The project will install a dedicated treatment system to remediate 3A

- The plant's water use will vary seasonally and with type of fuel used. Natural gas will be used exclusively except for rare winter days when ultra low sulfur oil may be required due to reduced natural gas availability.
  - Daily average: 0.1 MGD
  - Summer (Jul / Sept) average: 0.22 MGD
  - Winter Max w/ oil: 0.9 MGD

- CREC will pay for the installation of a dedicated water line between well 3A and the site so that the treated water will only be used at the plant

- Bottom-line: There is ample water to meet the needs of **the plant and community in all circumstances**

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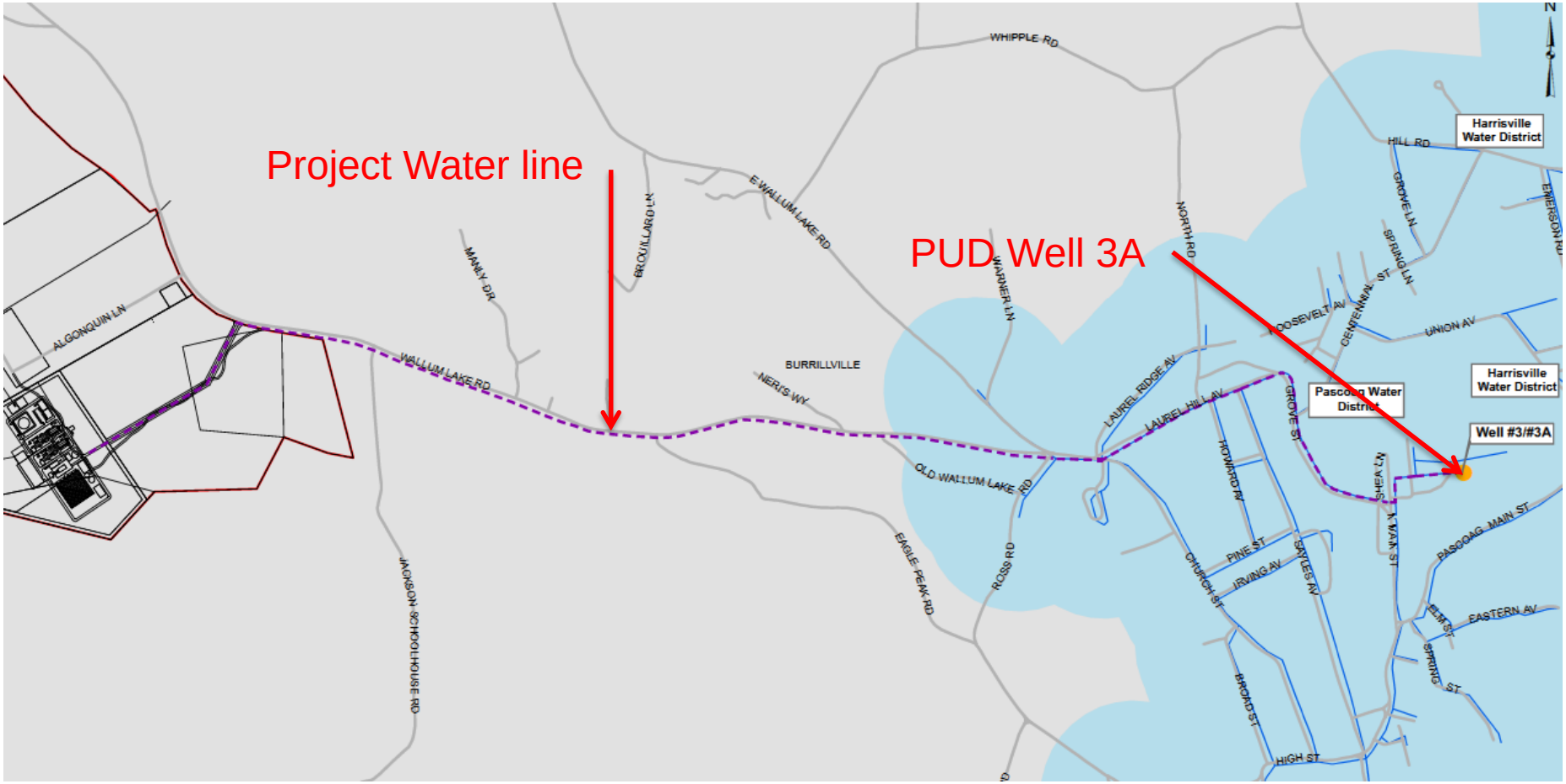
Project Water and Waste Water Lines



Project Water Discharge

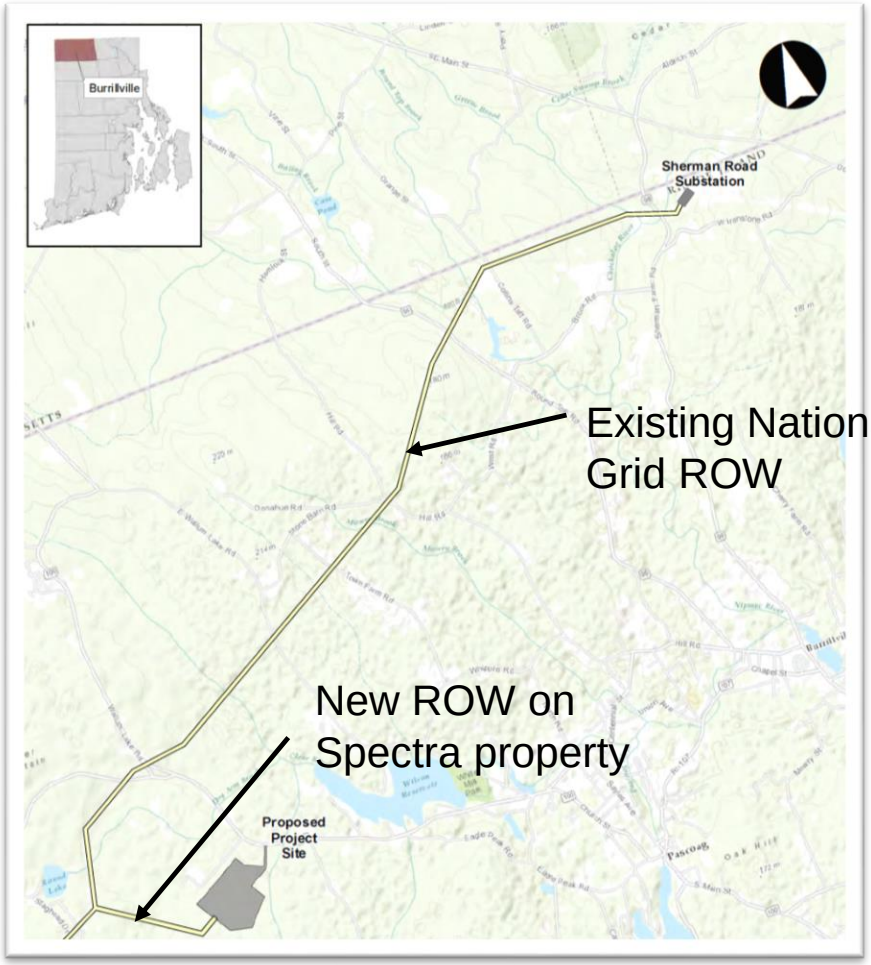
- Burrillville Sewer Commission (BSC) provided written support for the concept of connecting CREC into the Town's Public Sanitary Sewer System and Waste Water Treatment Plant (WWTP)

- A review by the BSC and its engineer of municipal waste water facilities, indicates there is **sufficient capacity at the municipal waste water treatment plant**
  - The Commission voted to accept the Facilities Plan and submitted it to the Rhode Island Department of Environmental Management for approval.

- The Facilities Plan requires RIDEM approval to allow CREC to interconnect into the sewer system

Electrical Interconnection

- Proposed project would interconnect to the Sherman Road substation:
  - 6 miles of new 345 kV line installed in the existing National Grid ROW that contains the two 345 kV lines
  - New breaker in the Sherman Road substation
- Existing ROW crosses Spectra property approximately 1,800 ft from proposed site



Transmission Map

Gas Pipeline

- New gas pipeline lateral connections with Algonquin pipeline
  - Gas lateral and meter station is approximately 500 feet long, all on Spectra or CREC property

- No impact on local gas supply

- Project is situated at an ideal location requiring no new rights of way

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Noise

- Noise produced during operation of the CREC must conform to levels approved by the Rhode Island EFSB

- The Clear River Energy Center **will meet Burrillville's noise ordinance**: facility noise will be limited to 43 decibels at nearby residences during normal operations
  - What's 43 dbA sound like? A suburban neighborhood, background noise in a conference room, or a humming refrigerator

- We have carefully modeled the noise from the facility to determine this level can be met with extensive controls, such as housing the turbines within buildings.

CREC – Permitting

- Permitting
  - Energy Facilities Siting Board (EFSB) Application
    - Docketed November 16, 2015
  - Environmental Permits
    - Air
      - MSP Application Submitted in June 2015
      - Air Quality Impact Analysis submitted in October 2015
    - RPDES Stormwater
      - Permit application to be filed be Q2 2016
    - Wetlands Impact Permit
      - Permit application to be filed Q2 2016
    - Water Permitting
      - Sewer connection approval expected mid 2016
      - Water supply approval expected mid 2016
  - It is expected that all required permits issued by Q4 2016

Major Source Air Permitting Process

- The rigorous Major Source air permitting process will ensure that air quality in the area surrounding the CREC Facility will be protected and will require the following:
  - Compliance with all applicable state and federal air pollution control regulations
  - Lowest Achievable Emission Rate (LAER) and offsets for all nonattainment pollutant emissions (NOx & VOC)
  - Best Available Control Technology (BACT) for all pollutant emissions
  - Compliance with the EPA's National Ambient Air Quality Standards (NAAQS) and RIDEM's Acceptable Ambient Levels (AALs)
- Process is administered by RIDEM and overseen by USEPA

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Air Quality Impact Analysis

- The air dispersion modeling analysis completed for the Project demonstrates that compliance with the NAAQS and AALs will be maintained
- The Project will not cause an increase in the ambient air concentration of any pollutant which exceeds the allowable percentage of the available PSD increment for that pollutant
- Project impacts to soils and vegetation will be below the allowable screening levels.
- Project Health Risk Assessment demonstrates compliance with all applicable health-based guideline criteria

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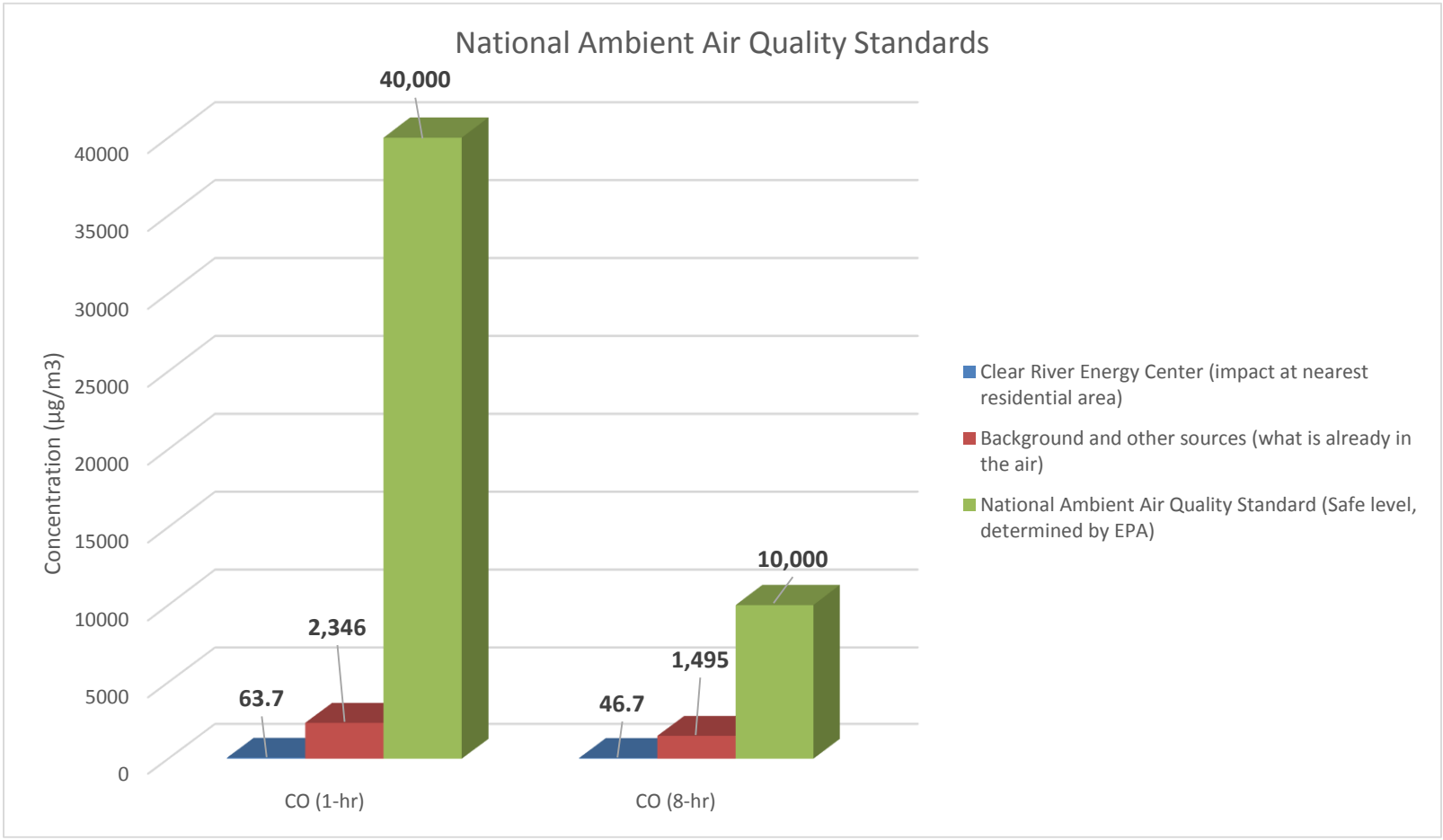
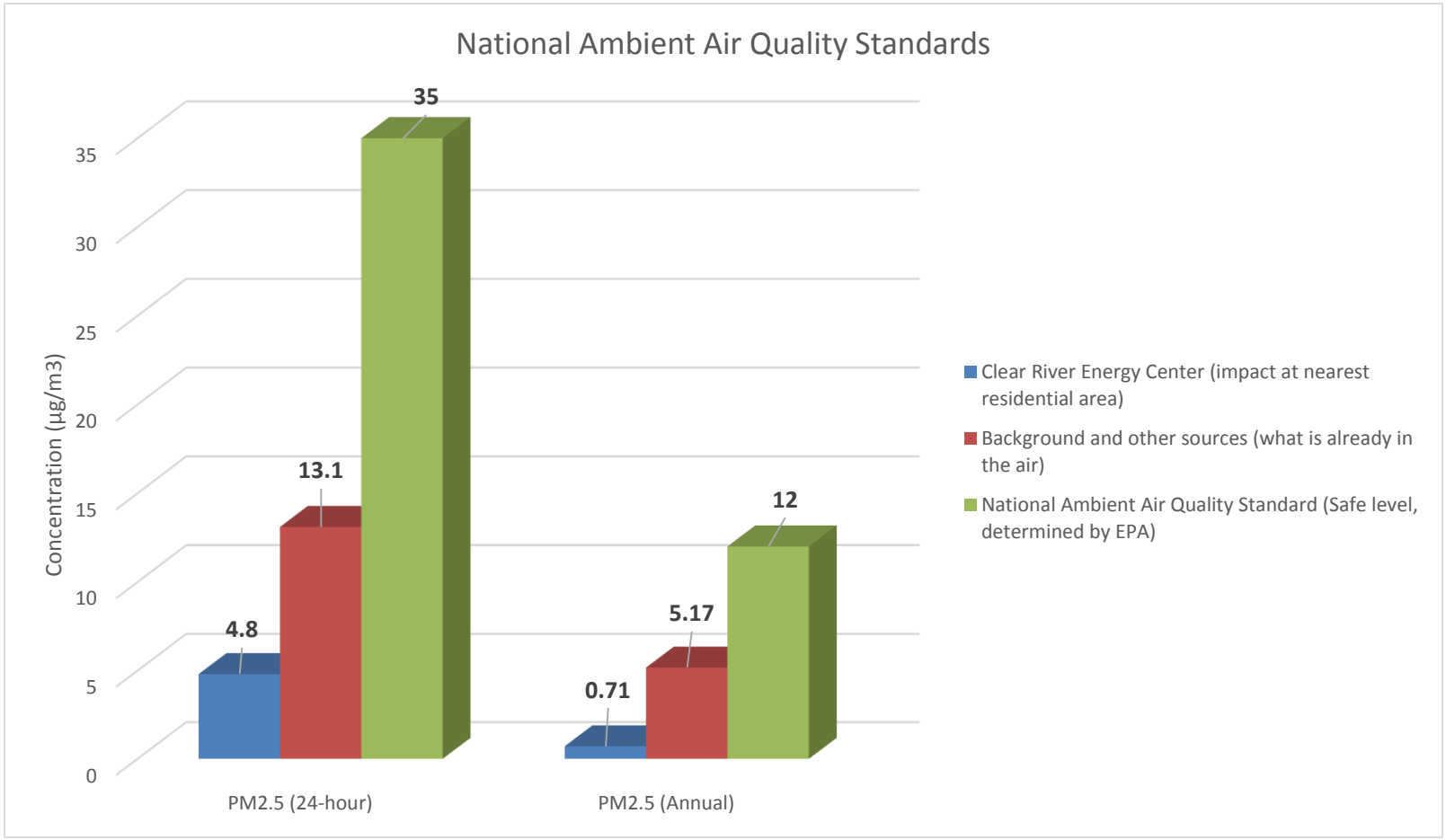
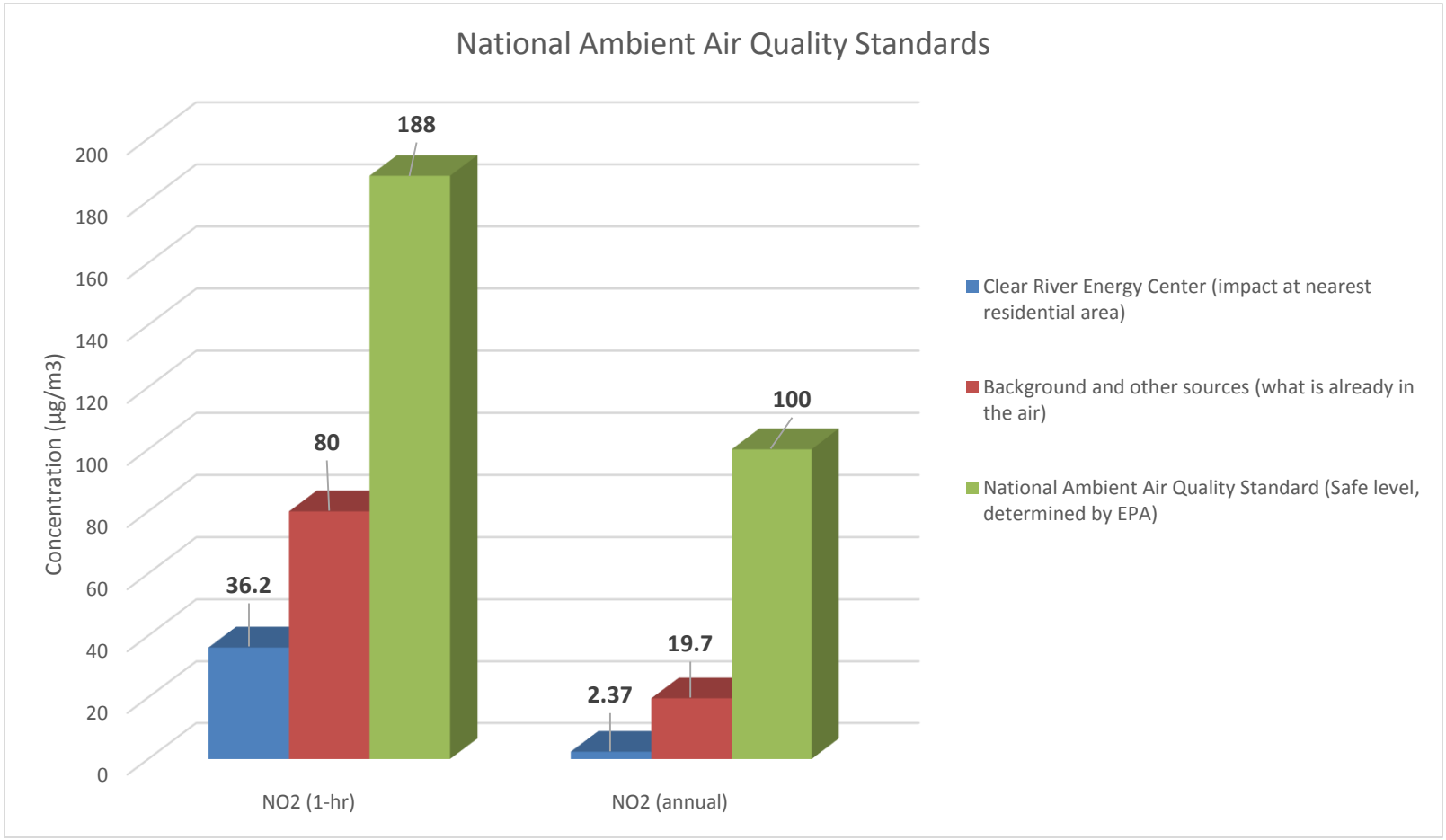
National Ambient Air Quality Standards (NAAQS)



Emission Comparison - PM



Emission Comparison - NOx



- Clear River emissions based on air permit application.

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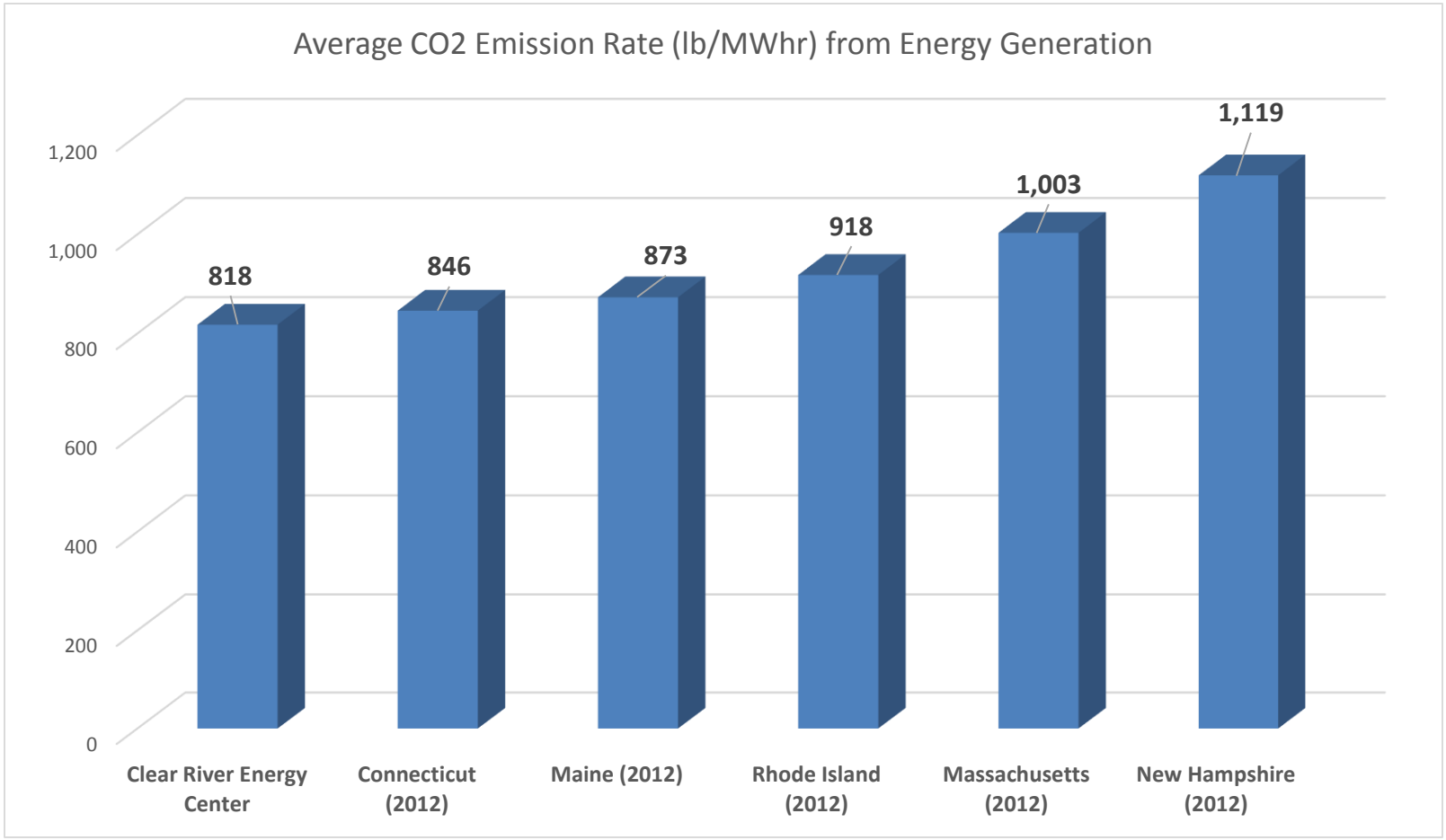
Emission Comparison Thermal Generation



- Clear River emissions based on air permit application.

Wetlands and Stormwater Permitting Process

- Site wetlands have been delineated and are undergoing verification by RIDEM
  - A combined wetlands and stormwater permit application is being prepared for submittal to RIDEM
  - An individual permit (Section 404) is also being prepared for submittal to the Army Corps of Engineers
  - The application will detail how wetland mitigation will be implemented
- Stormwater management plan will be designed in accordance with the RIDEM Rhode Island Stormwater Design and Installation Standards Manual dated March 2015

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