



# Granite Ridge Energy

Vermont Energy Siting Commission

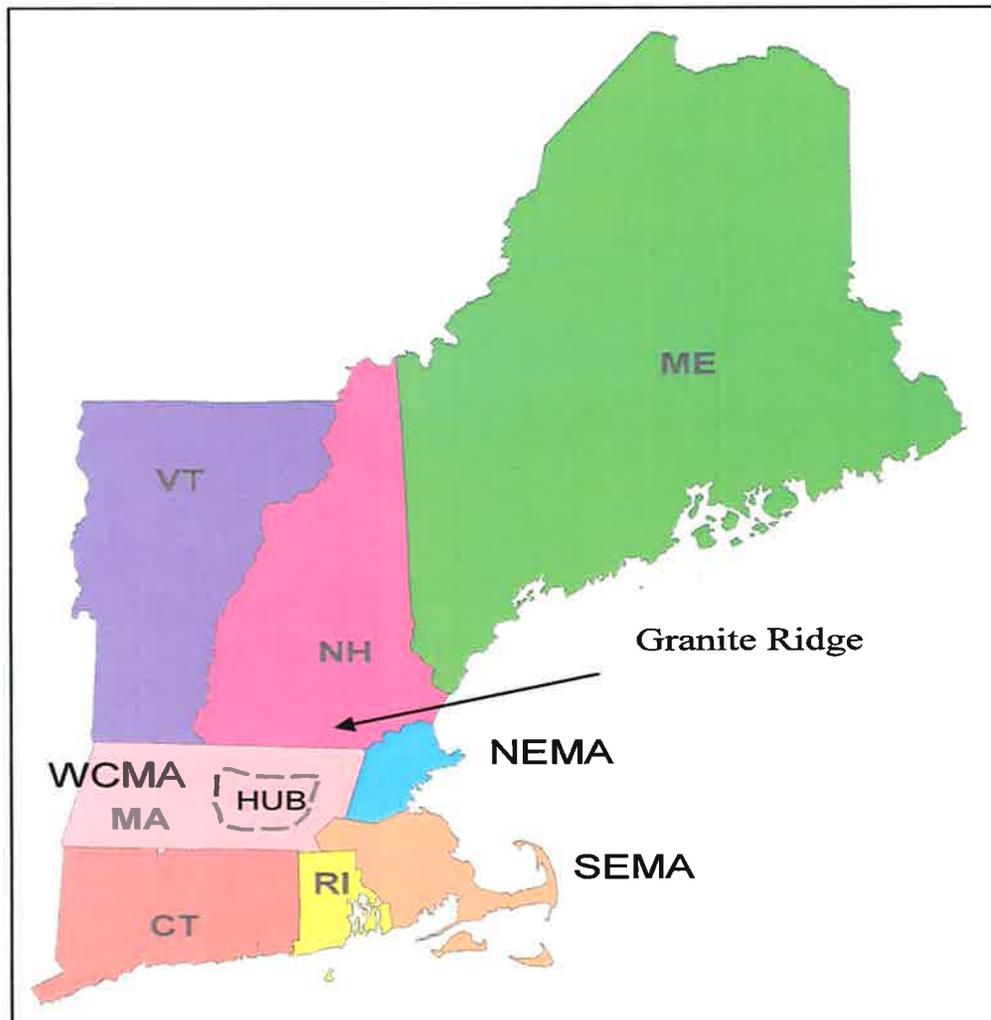
*January 23, 2013*

# Agenda

---

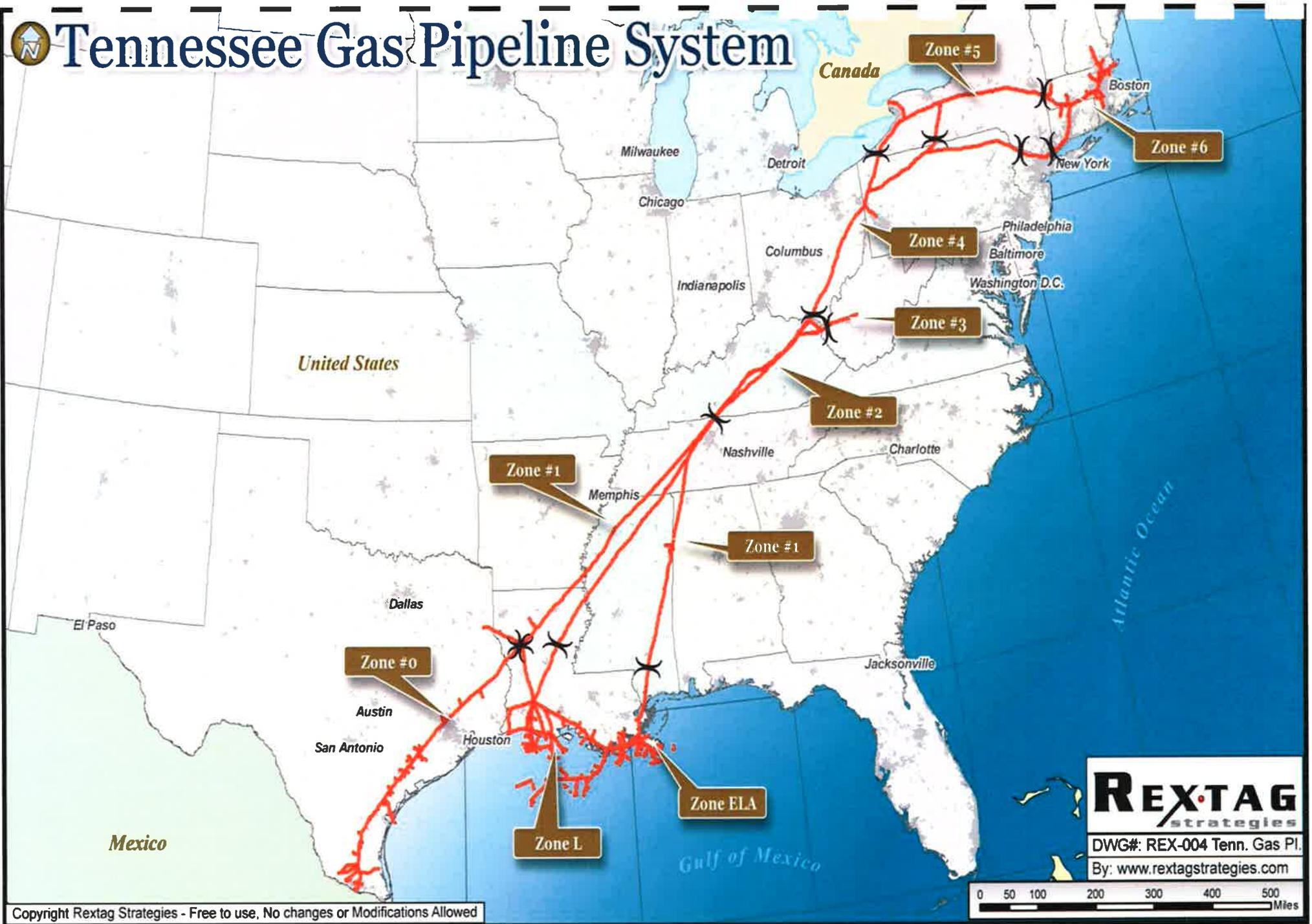
- Regional View and ISO-NE Market
- Natural Gas Pipelines
- New Hampshire's Electric Market
- Overview of Granite Ridge
- The New Hampshire Site Evaluation Committee

# ISO-NE Power Market



- The ISO-NE power market encompasses all of the six New England states, namely Maine, New Hampshire, Vermont, Connecticut, Massachusetts and Rhode Island. It is divided into eight load zones and a central hub as depicted in the adjacent exhibit.
- The Granite Ridge power plant is a 752 MW combined cycle gas-fired generation plant in ISO-NE located in Londonderry, NH.
- NH represents about 9% of the New England regional electric demand

# Tennessee Gas Pipeline System

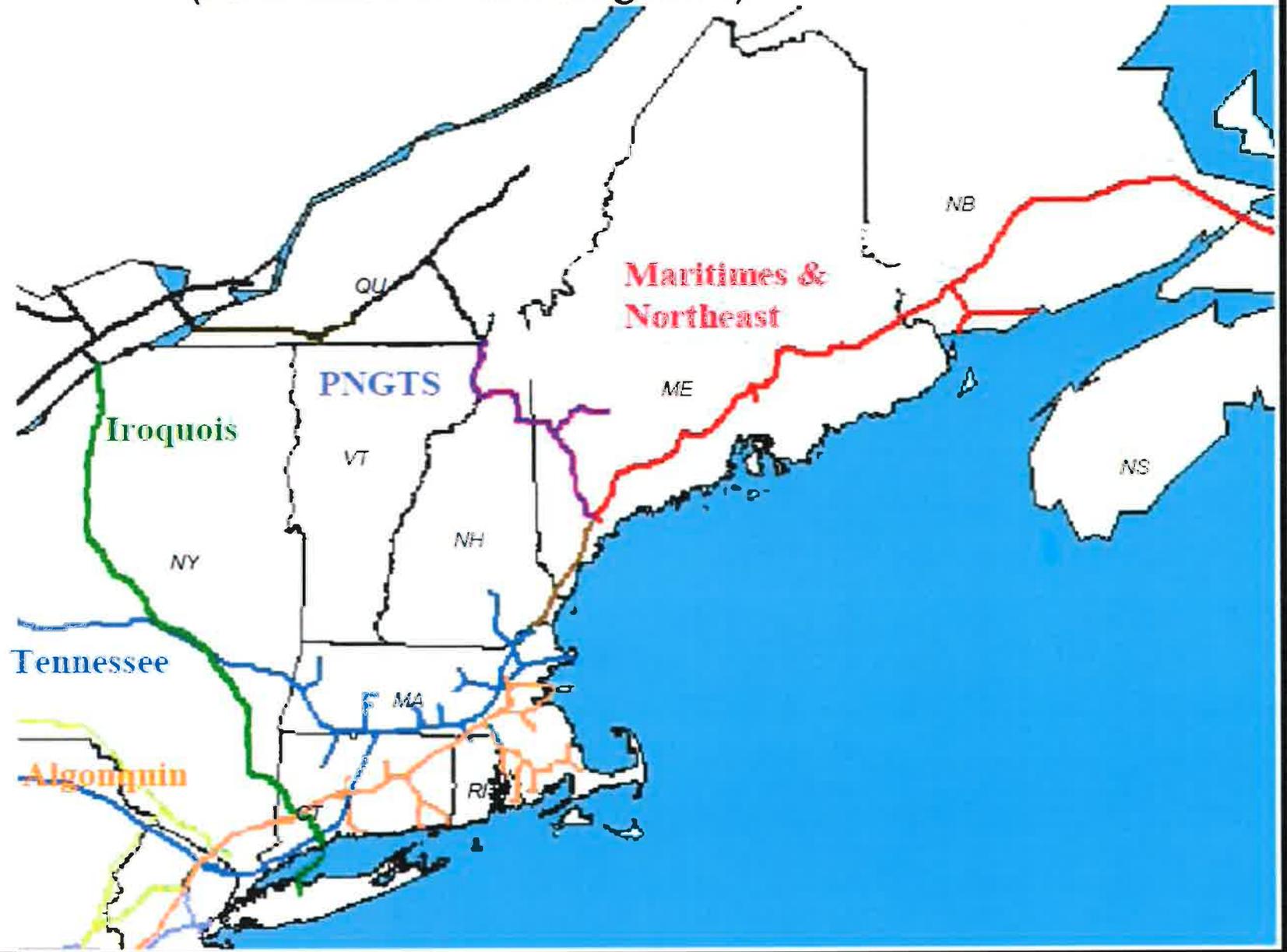


**REXTAG**  
strategies

DWG#: REX-004 Tenn. Gas PI.  
By: [www.rextagstrategies.com](http://www.rextagstrategies.com)

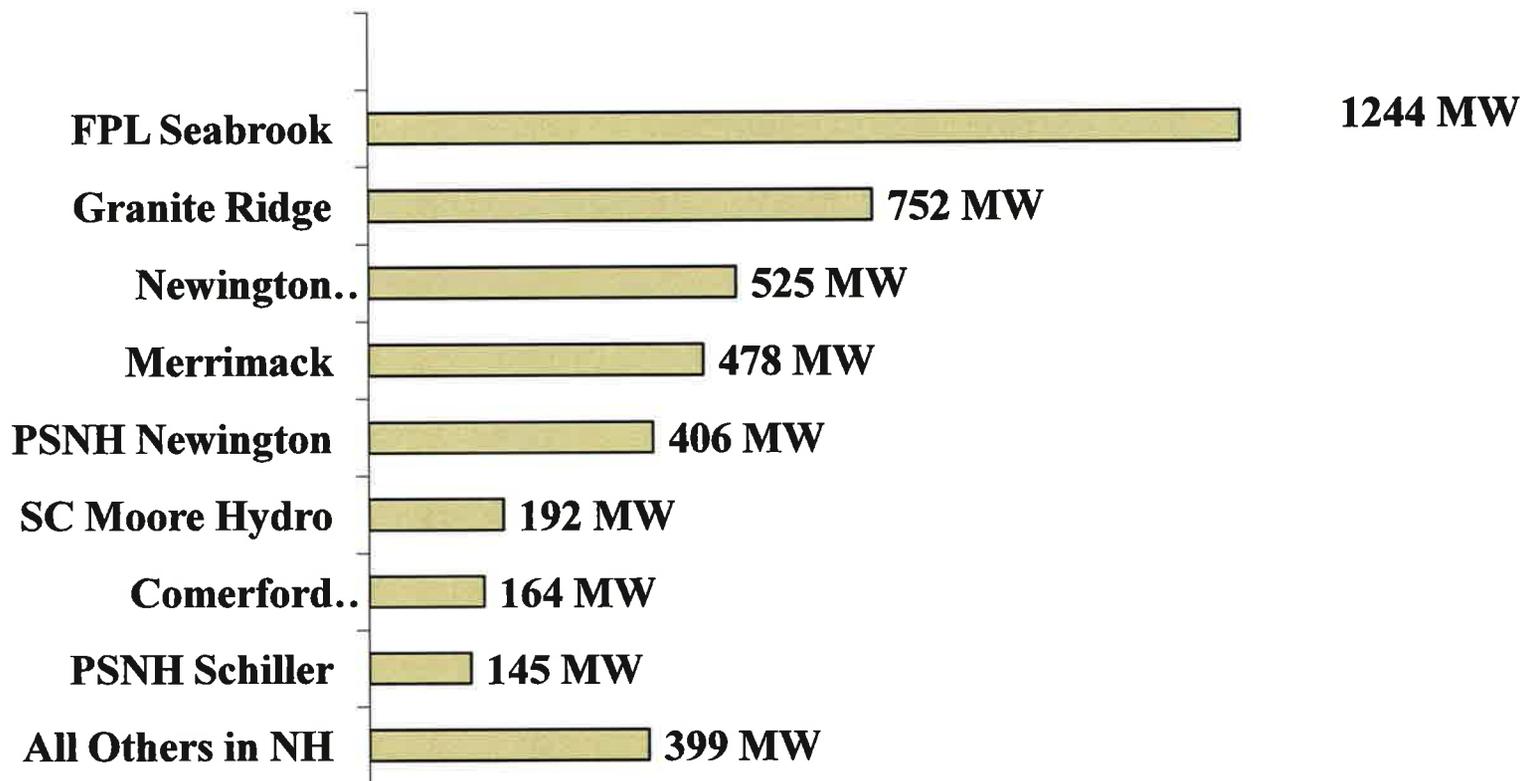
Copyright Rextag Strategies - Free to use. No changes or Modifications Allowed

# New England Natural Gas Pipelines (Inter-State & Inter-Regional)



# NH Power Plants

## Largest Electric Generating Plants in NH \*



\* Capacity determined from Owner's websites or other typical sources

# Granite Ridge Energy

---



# Granite Ridge Energy



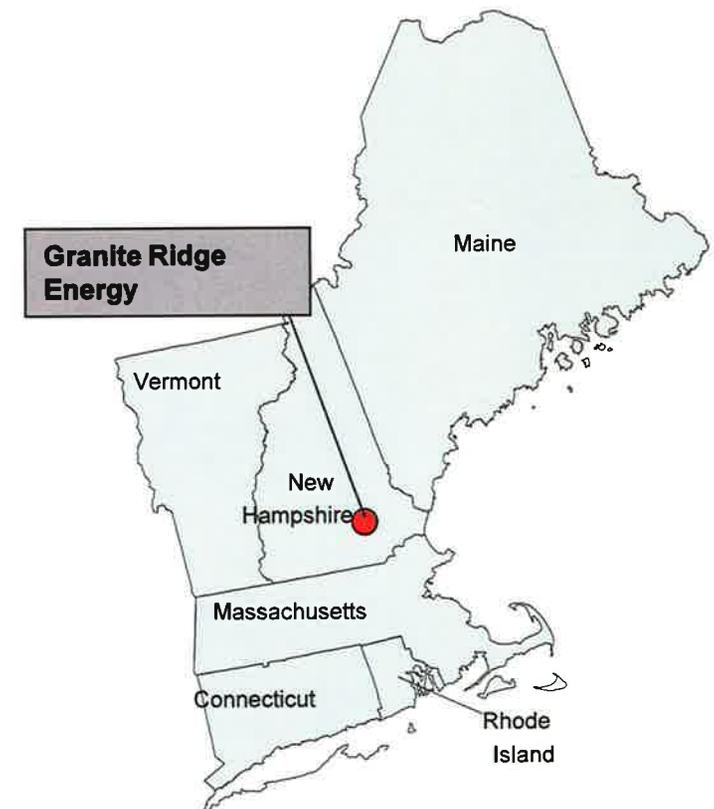
# Granite Ridge Energy Overview

## Granite Ridge Facility Summary

<b>Location:</b>	Londonderry, New Hampshire	<b>Configuration:</b>	2 CT x 1 ST
<b>Capacity:</b>	720 MW 798 MW Winter Capacity 660 MW Summer Capacity	<b>Gas Transportation:</b>	Tennessee Gas Pipeline Company
<b>COD:</b>	March 2003	<b>Interconnections:</b>	New England Power at 230kV and Northeast Utilities at 115 kV
<b>Fuel Type:</b>	Natural Gas	<b>Heat Rate:</b>	6,950 Btu/kWh
<b>Facility Type:</b>	Combined Cycle	<b>O&amp;M Employees:</b>	27
<b>Equipment:</b>	Siemens W501G	<b>Site:</b>	48 acres



## Location

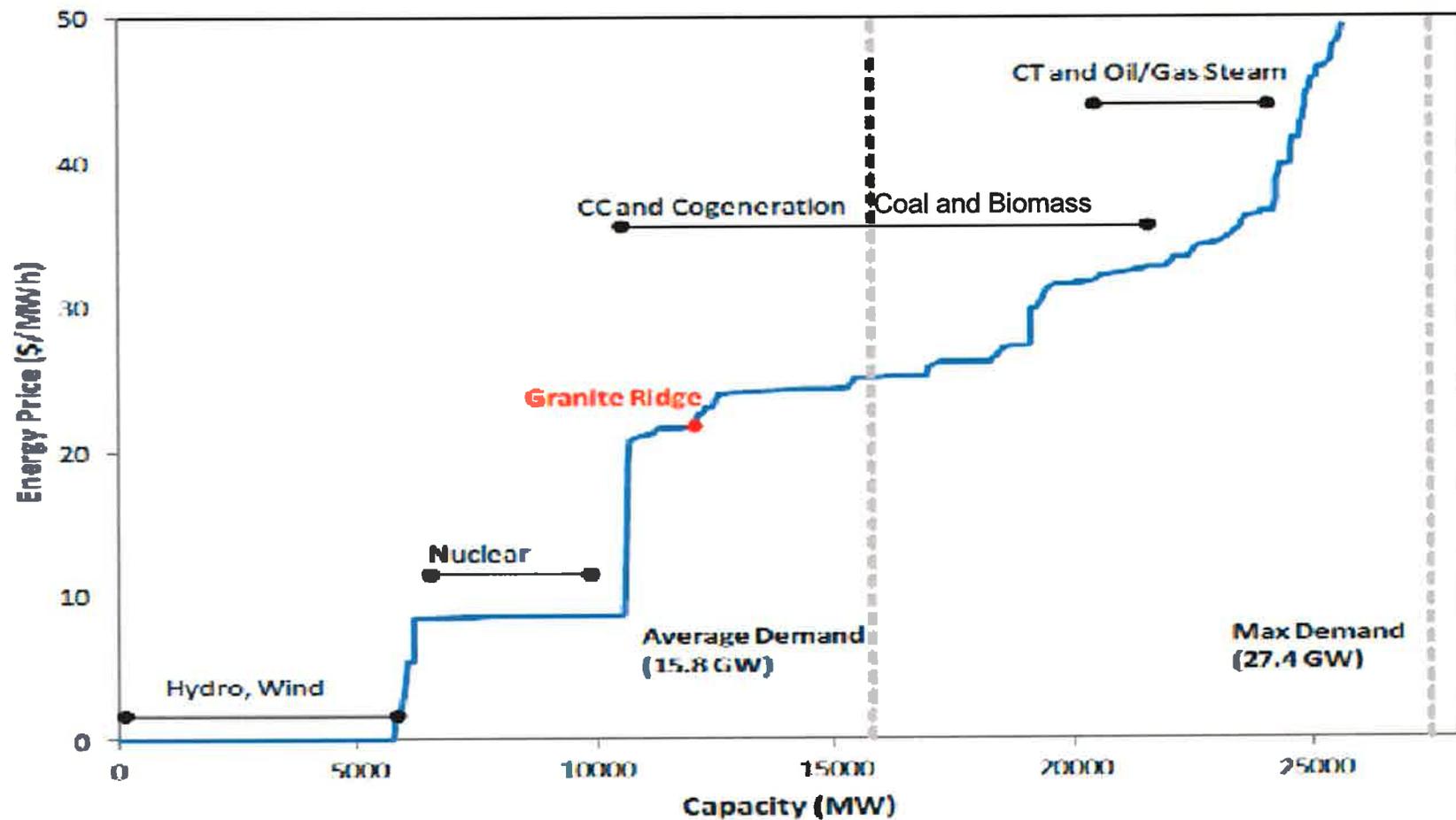


# Comparative Heat Rates (Efficiency) lower heat rate value = more efficient

Description	Heatrate (btu/kWh)	Source
Average, all U.S. coal power plants	10,410	EIA-Coal Utilization Research Council- Road Map update 2006
Average, all U.S gas power plants	7,920	EIA-Electric Light & Power Magazine Nov/Dec 2005
Conventional NG Combined Cycle plant	7,800	EIA-National Energy Technology Lab, 2006
Granite Ridge Energy	6,950	Facility's OSI-PI historian database

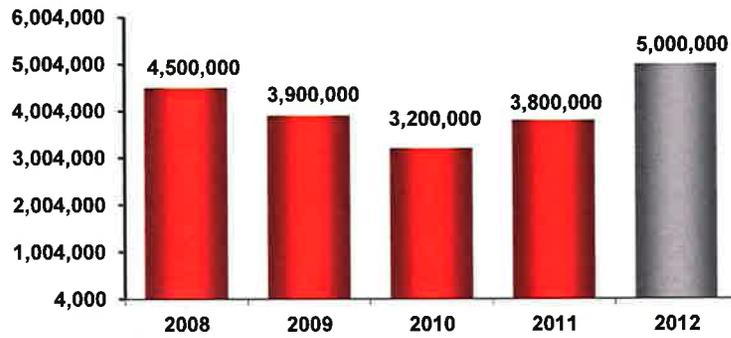
# Electric Market Supply Resources

Illustrative ISO-NE Summer Supply Curve (Excluding DSM and Imports) – 2012

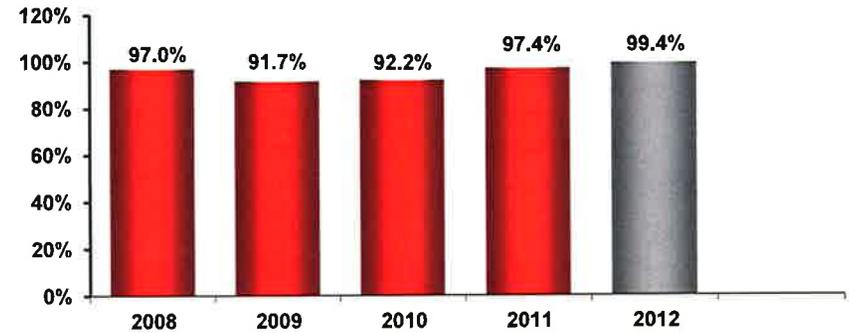


# GRE Operational Overview

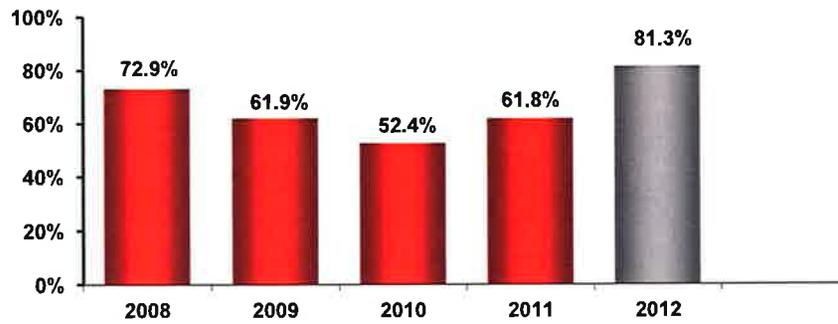
## Net Generation



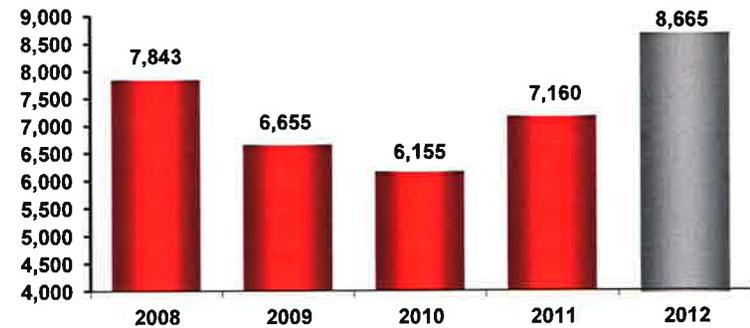
## Availability



## Capacity Factor



## Hours



# RGGI Environmental Benefits

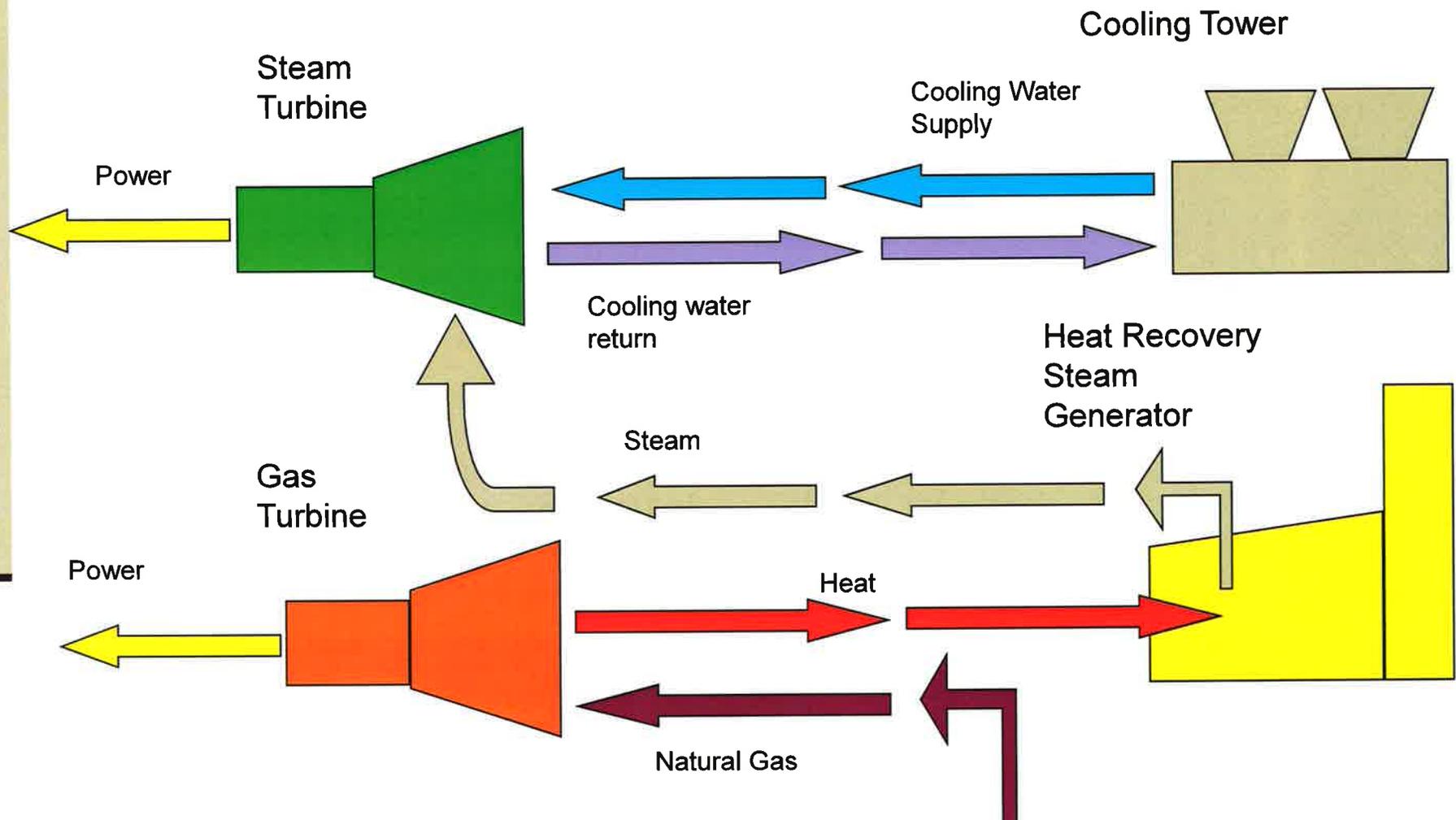
2008 CO<sub>2</sub> Emission Rates (Pounds/MWH) for NH RGGI Sources\*

Affected CO <sub>2</sub> Source	2008 Net Generation (MWH)	Emission Rate (lbs/MWH)	2008 CO <sub>2</sub> Emission (Tons)
PSNH Merrimack	2,853,510	2,181	3,112,114
PSNH Newington	109,540	1,795	98,334
PSNH Schiller	988,765	1,656	818,594
Granite Ridge	4,492,866	879	1,974,812
Newington (Essential Power )	2,495,242	875	1,091,293
<b>TOTAL</b>	<b>10,939,923</b>		<b>7,095,147</b>

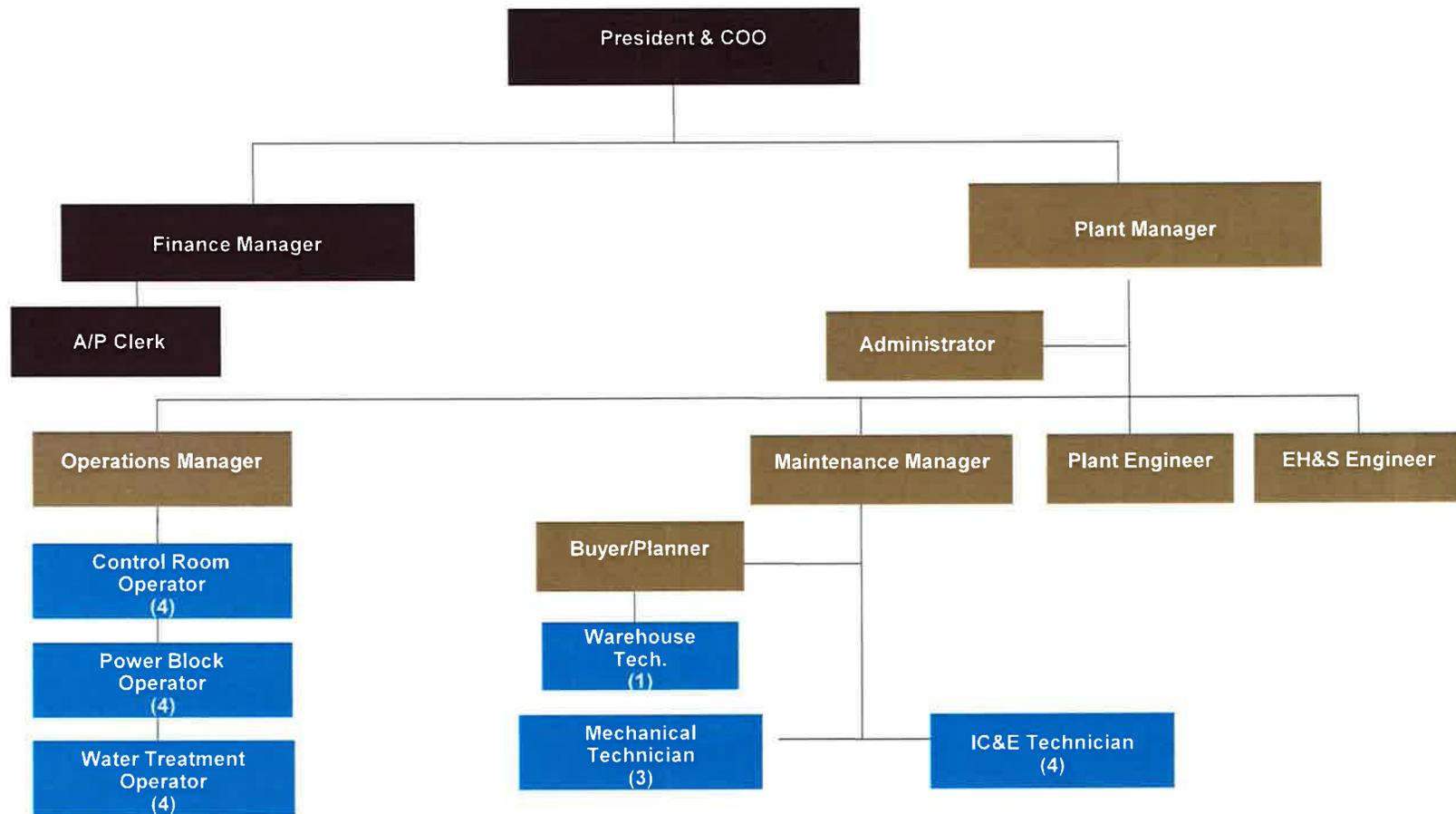
\*Under RSA 125-0:20, I, five New Hampshire electric energy generating facilities are “affected CO<sub>2</sub> sources” whose emissions of carbon dioxide are limited under the Regional Greenhouse Gas Initiative (RGGI).

\*Data Sources: U.S. Energy Information Administration for output data (MWH)  
NH Department of Environmental Services (Air Resources Division) for CO<sub>2</sub> emission data

# Combined Cycle Diagram



# Organizational Overview



NAES Operating team – 27 people  
 Asset Management team – 3 people

(1) Purple rectangles denote contract Asset Management Team.  
 (2) Tan rectangles denote non-union NAES employees.  
 (3) Blue rectangles denote union NAES employees.

# GRE Community Investment



- GRE contracts over 200 skilled craftsmen to perform annual maintenance each year.
- GRE is committed to contracting with local companies whenever possible.



# GRE Community Investment

---

- Granite Ridge Energy paid over \$65 Million in state and local taxes in the last 9 years.
- Capital investment since 2004 approaching \$25 million to maintain state of the art performance, enhance reliability and flexible operation and refine environmental controls.
- Contribution to local charities exceed \$10,000/year.
- NAES employees support Habitat for Humanity and Earth Day with their donated time.

# Community Contributions

---

- Warm Homes
- Boys and Girls Club
- Easter Seals
- Boy Scouts
- Sunshine Soup Kitchen
- Toys for Tots
- Londonderry Senior Center
- 2 Annual Londonderry High School Scholarships
- Local School Programs
- Youth Sport Teams
- Earth Day Celebration with Elementary School
- Habitat for Humanity
- Wounded Warriors Project

# The New Hampshire Site Evaluation Committee

---

- Established under RSA 162-H:3 to provide “one-stop shopping” for siting and permitting of “energy facilities” greater than 30 MW.
- Composed of 15 members, including department heads, commissioners and senior administrators of:
  - Department of Environmental Services (Commissioner is Chair of SEC)
  - Public Utilities Commission (Chair of PUC is Vice Chair of SEC)
  - Department of Resources and Economic Development
  - Department of Health and Human Services
  - Fish and Game Department
  - Governor’s Office of Energy and Planning
  - Department of Transportation
  - Department of Cultural Resources

# The New Hampshire Site Evaluation Committee

---

## Responsibilities of the SEC

- Issue certificates of site and facility for “energy facilities” of more than 30 MW, and approve the transfer of ownership of any energy facility previously permitted under RSA 162-H (nine-month process involving public hearings);
- Determine the terms and conditions of any certificate issued under RSA 162-H, including approving the terms and conditions of all “subsidiary” permits from relevant state agencies incorporated into the Certificate of Site and Facility;
- Monitor the construction and operation of any energy facility permitted under RSA 162-H; and
- Enforce the terms and conditions of any certificate issued under RSA 162-H.

# The New Hampshire Site Evaluation Committee

---

## Required “Findings” for a Certificate from the SEC

- Applicant has adequate financial, technical, and managerial capability to assure construction and operation in continuing compliance with terms and conditions of the Certificate;
- Site and facility will not unduly interfere with the orderly development of the region, with due consideration having been given to the views of municipal and regional planning commissions and municipal governing bodies; and
- Site and facility will not have an unreasonable adverse effect on aesthetics, historic sites, air and water quality, the natural environment, and public health and safety.