

# **Electric and Gas Infrastructure**

## **Natural Gas and Electricity Coordination Technical Conference**

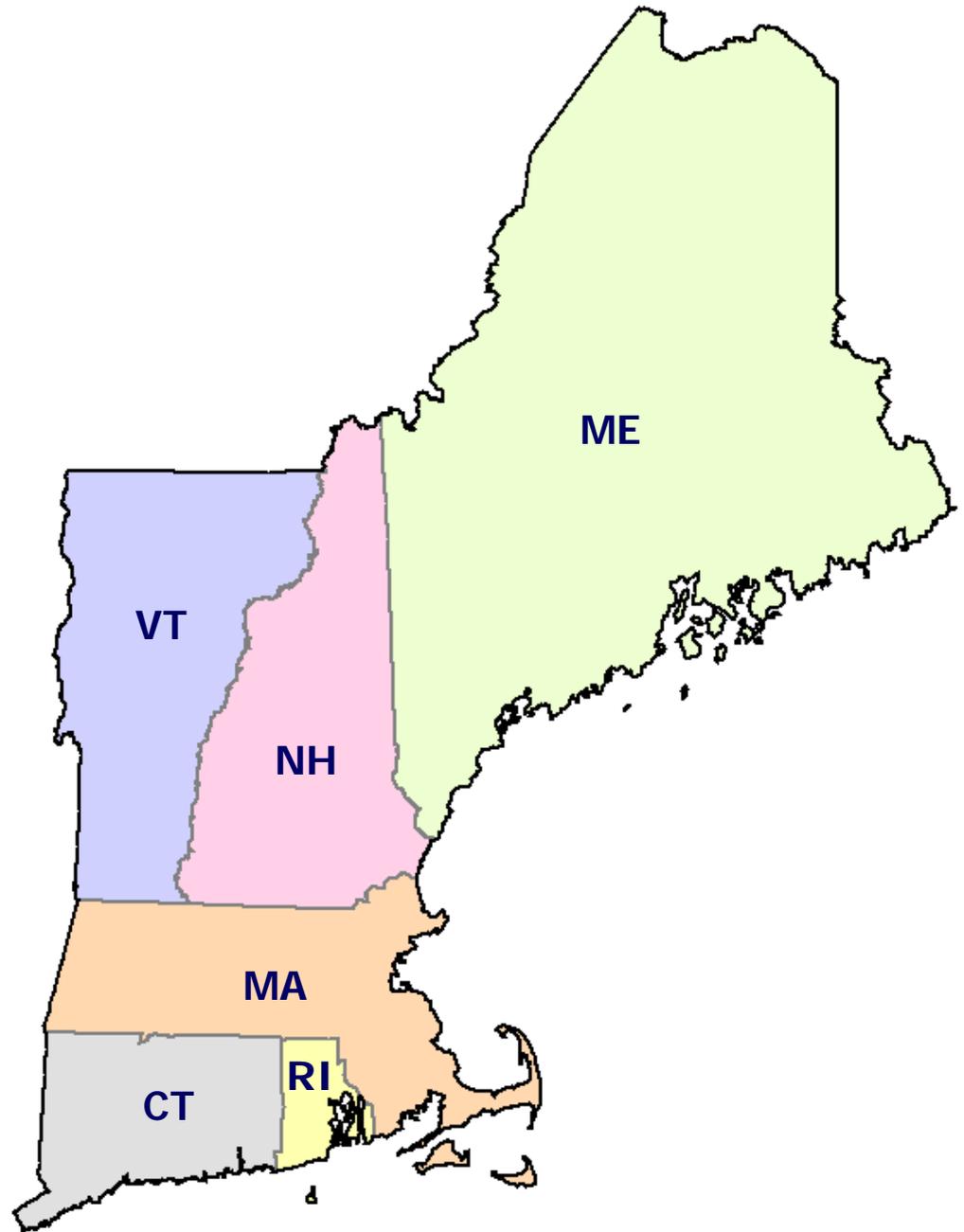
### **Northeast Region**



**August 20, 2012**

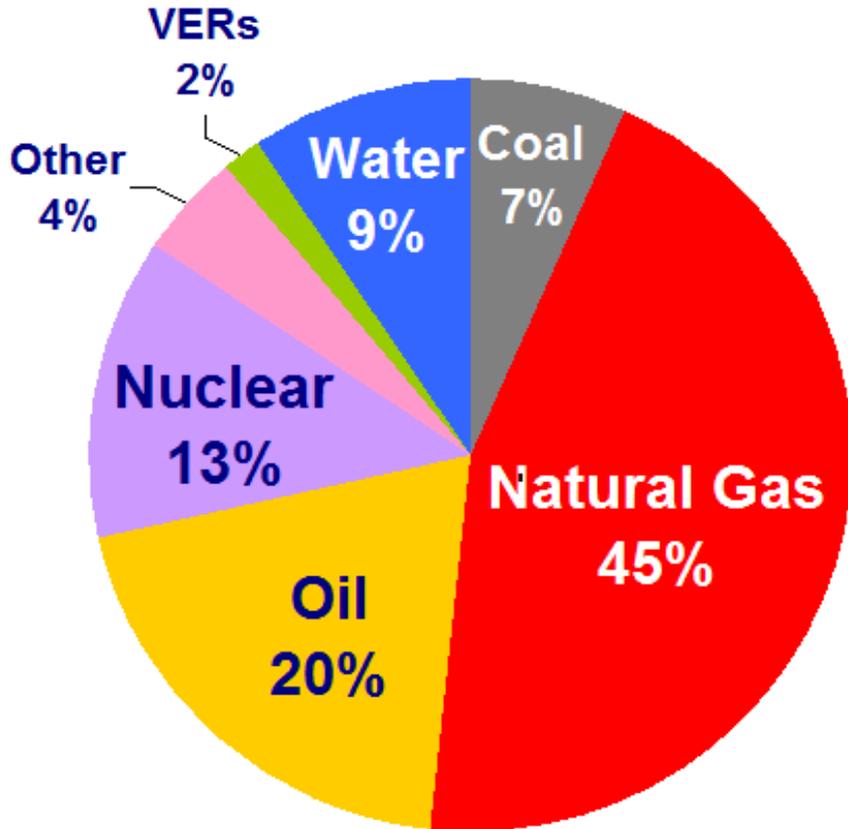
**Boston, Massachusetts**

# Northeast Region States

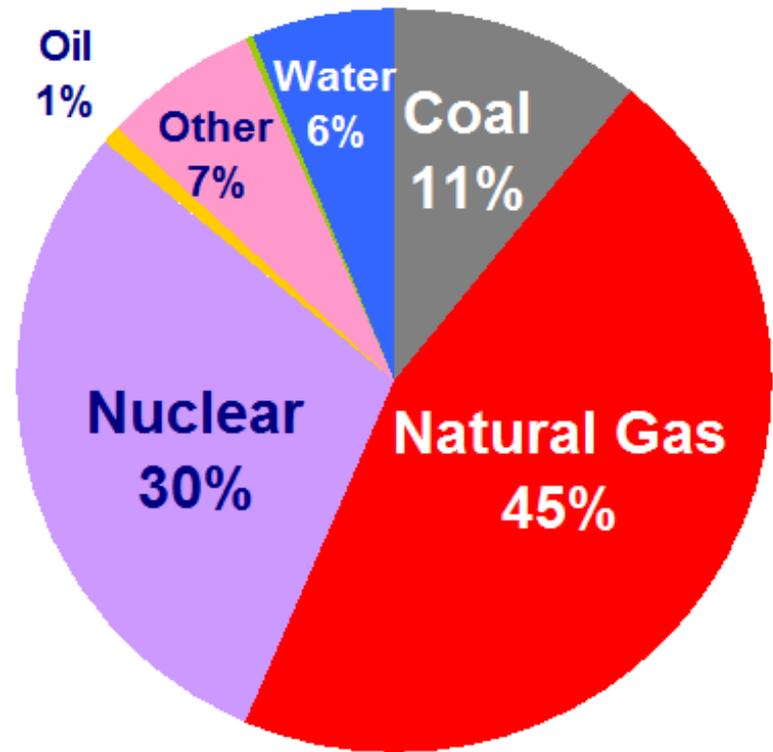


# **ELECTRIC INFRASTRUCTURE**

# Installed Capacity and Generation



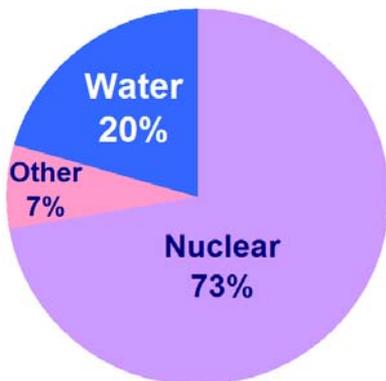
**Current Installed Capacity**  
37,943 MW



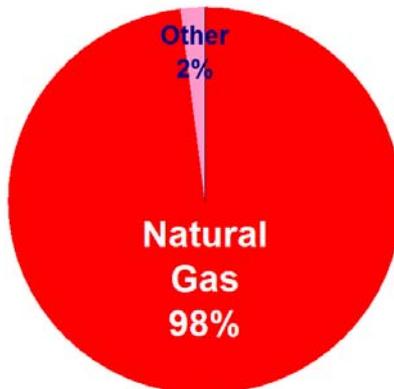
**2010 Generation**  
129,184 GWh

Source: Based on data derived from Ventyx, Velocity Suite, July 2012.

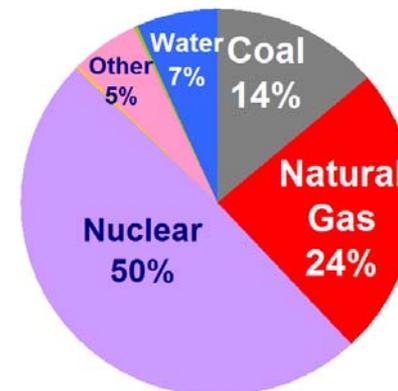
# Electricity Generation by State



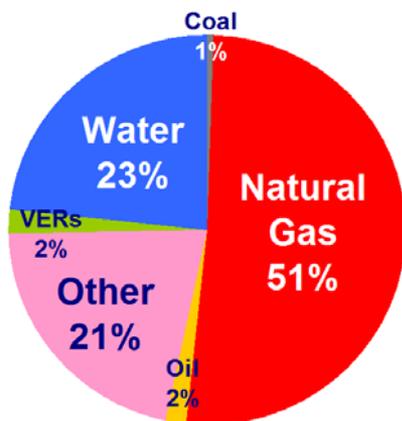
Vermont 6,620 GWh



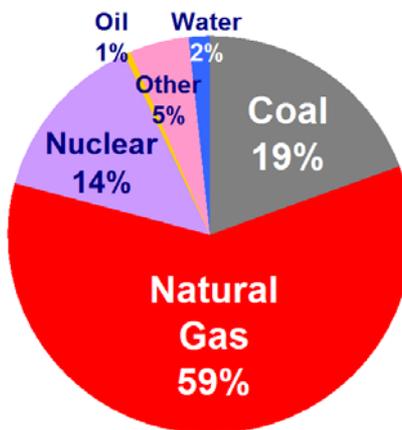
Rhode Island 7,739 GWh



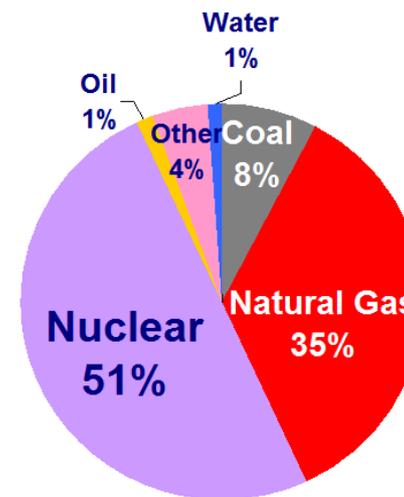
New Hampshire 22,196 GWh



Maine 16,346 GWh



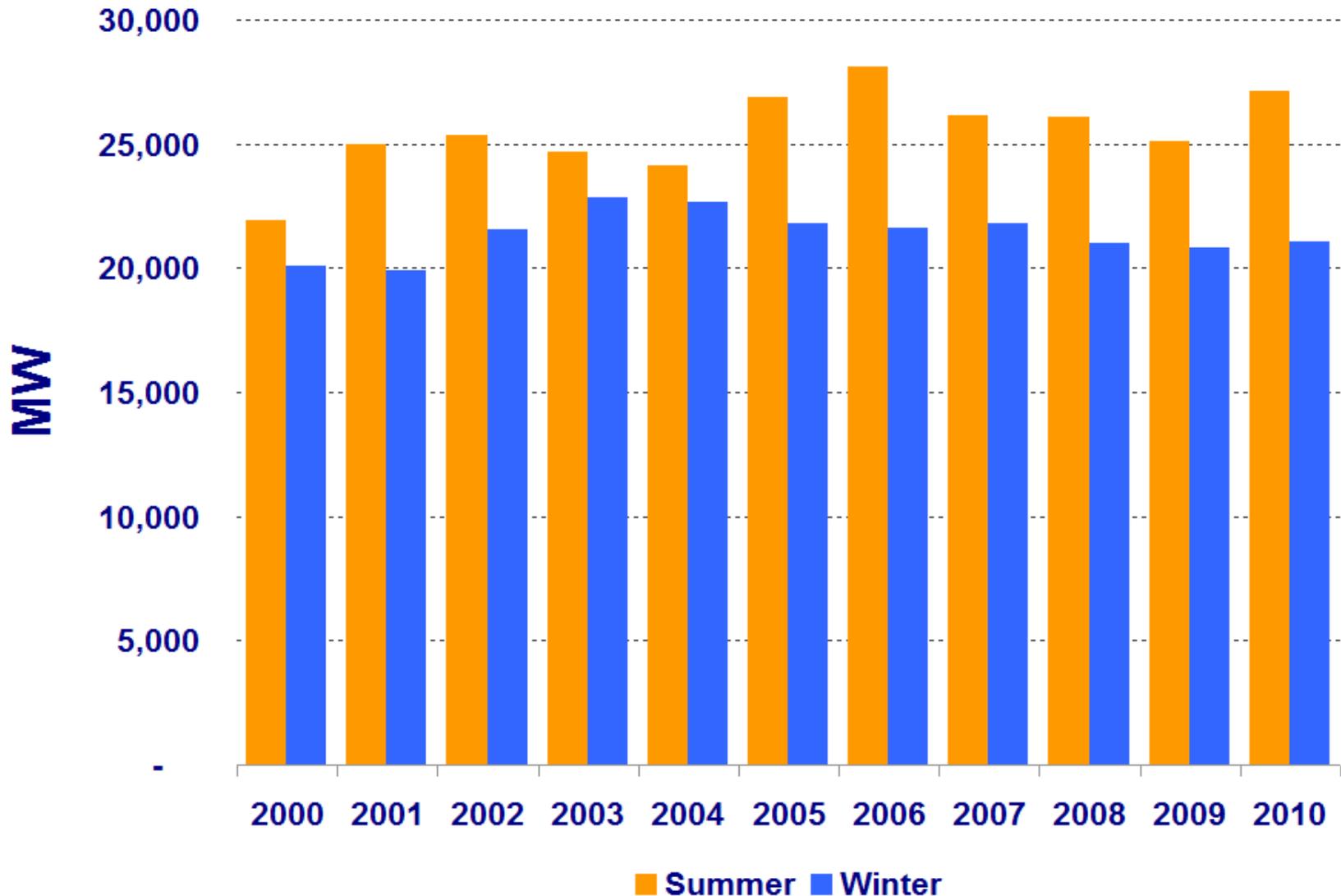
Massachusetts 42,928 GWh



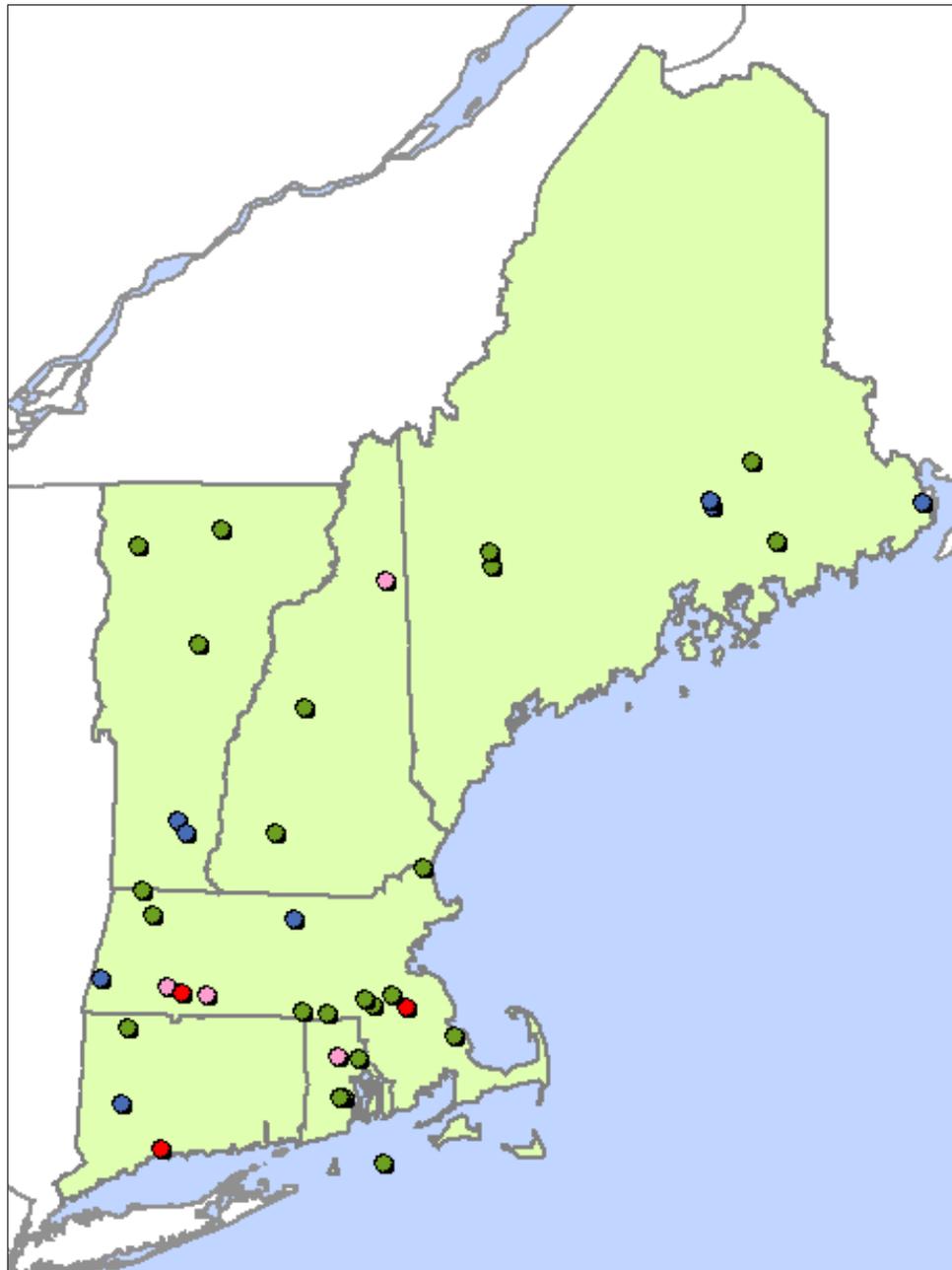
Connecticut 33,349 GWh

Source: Based on data derived from Ventyx, Velocity Suite, June 2012.

# Northeast Region Peak Demand

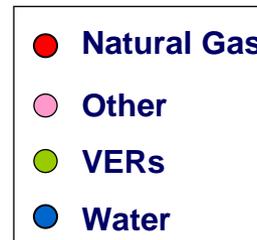


Source: The North American Electric Reliability Corporation's (NERC's) 2011 Electric Supply and Demand Database.



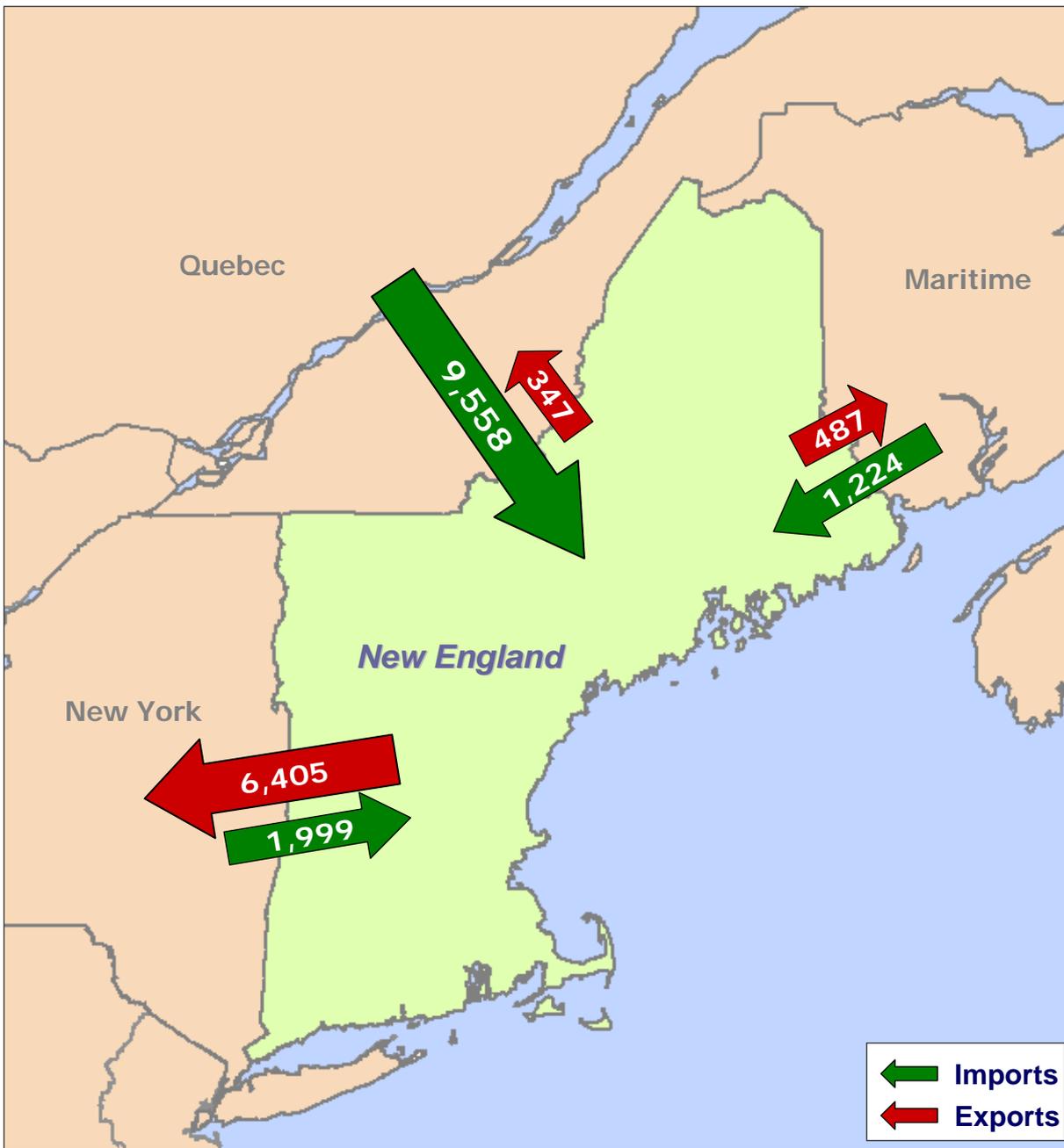
# Projected Capacity Additions to 2020

- Projected capacity additions in advanced development and under construction total 2,688 MW.
- Another 4,201 MW are in early development stage.



Source: Based on data derived from Ventyx, Velocity Suite, July 2012.

# Net inter-regional deliverability 2010 (in GWh)



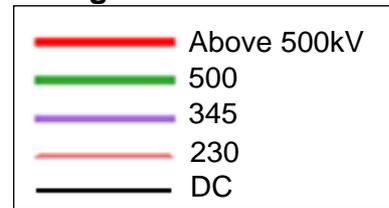
Imports	12,781 GWh
Exports	7,239 GWh
<b>Net Imports</b>	<b>5,542 GWh</b>

Source: Based on data derived from Ventyx, Velocity Suite, July 2012.

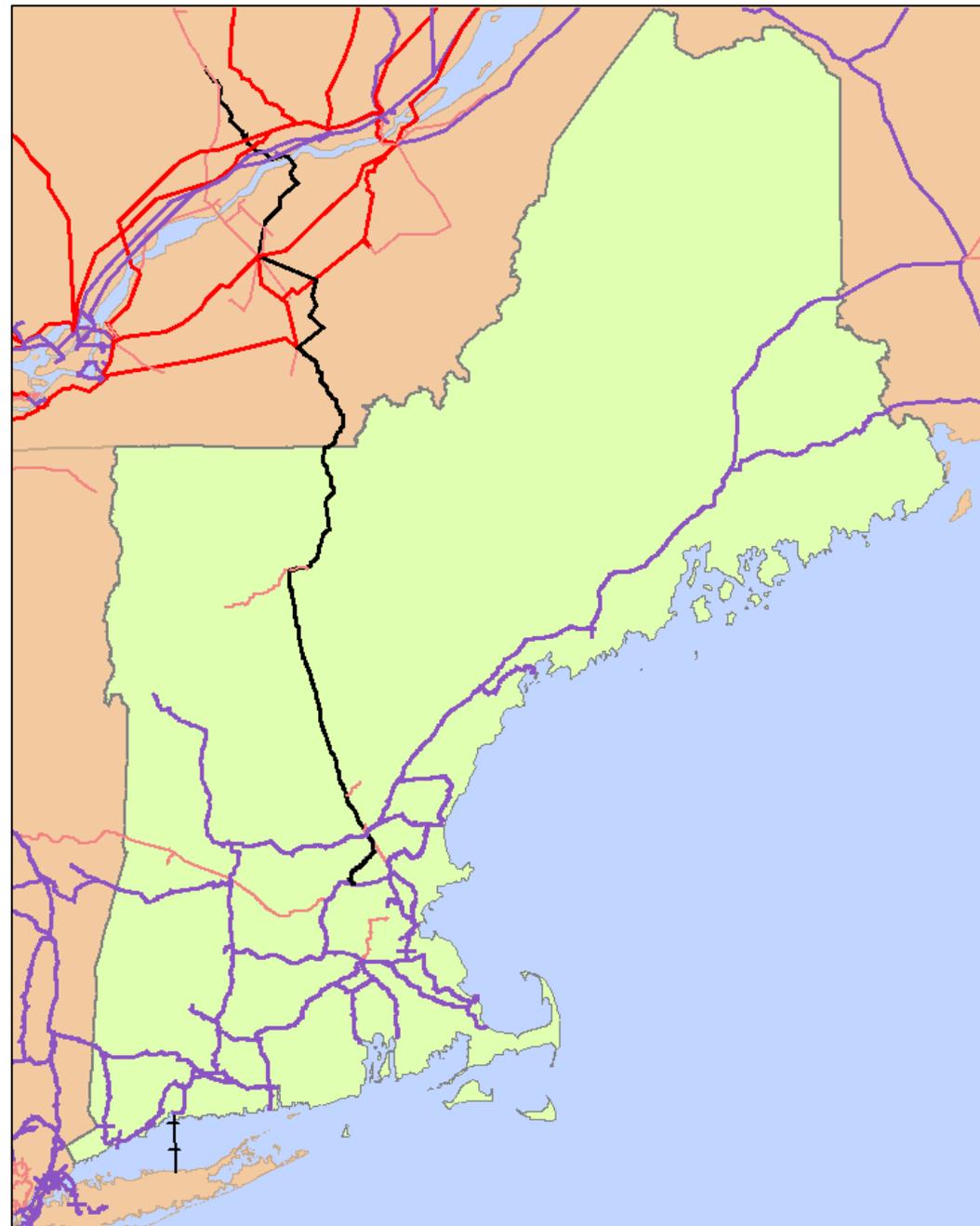
# Existing Transmission

Voltage (kV)	Line Length (Miles)
230	443
345	2,155
DC	216
<b>Total</b>	<b>2,814</b>

## Voltage kV



Source: Based on 2011 NERC Electric Supply and Demand Database, data derived from Ventyx, Velocity Suite, June 2012 and Staff Database.

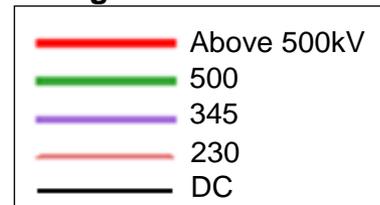


# Projected Transmission Projects through 2030



Voltage (kV)	Line Length (Miles)	Investment Cost (Millions \$)
230	30.0	317.8
345	1,394.0	7,722.2
DC	386.7	3,400.0
<b>Total</b>	<b>1,810.7</b>	<b>11,440.0</b>

## Voltage kV



Source: Based on 2011 NERC Electric Supply and Demand Database, The C Three Group Database and data derived from Ventyx, Velocity Suite, June 2012.

# **GAS INFRASTRUCTURE**

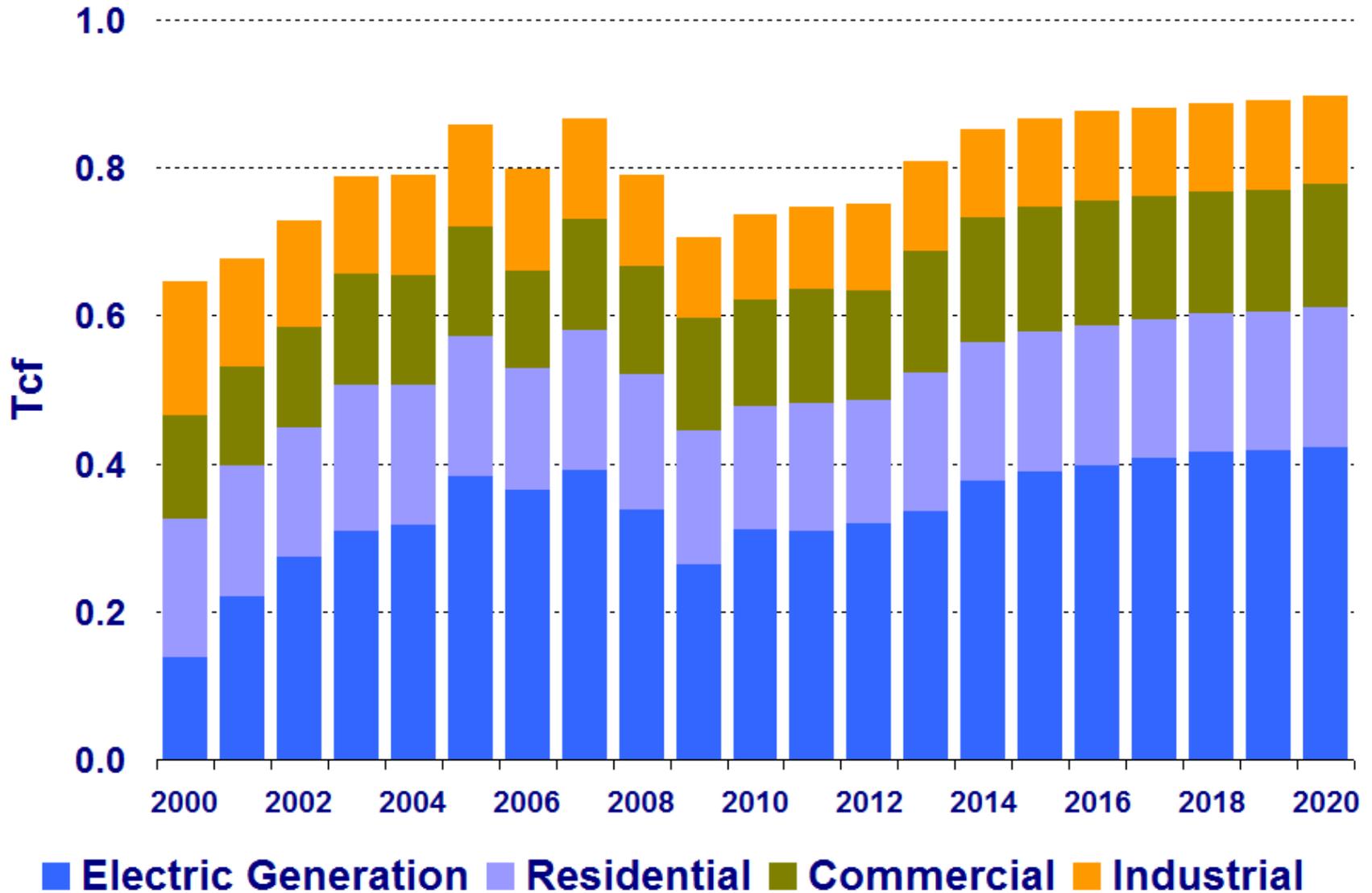
# Natural Gas Infrastructure



- Interstate Natural Gas Pipelines
- ▲ Natural Gas Import/Export Points With Canada
- LNG Terminals

Source: Based on data from Ventyx, Velocity Suite June 2012; ICF International April 2012 Data Base; EIA Storage Spreadsheet; and Fossil Energy 4<sup>th</sup> Quarter Report 2011

# Natural Gas Consumption



Source: ICF International April 2012 Data Base and Compass Report

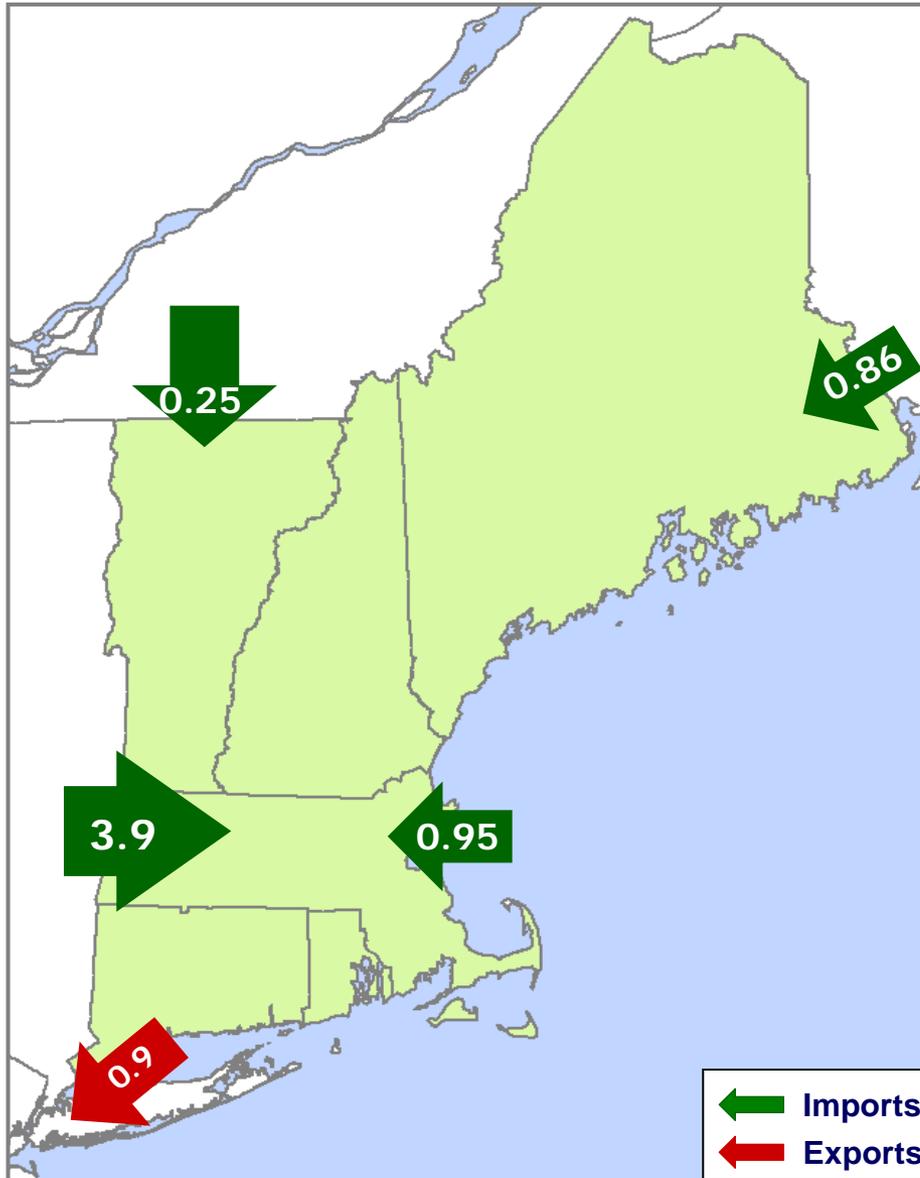
# Gas Facts

**(In Tcf)**

	2010		2020	
	United States	Northeast	United States	Northeast
Total Gas Consumption	23.8	0.7	27.7	0.9
Total Gas Production	21.5	0.0	28.8	0.0
Total Working Storage Capacity	4.2	0.0	4.8	0.0
Total LNG Imports	0.43	0.15	0.32	0.16
Total LNG Exports	0	0	1.10	0.0
Total Net Imports from CN	2.5	0.6	0.9	0.09

Source: ICF International April 2012 Data Base and Compass Report, EIA Spreadsheets & Fossil Energy's Quarter Reports for 2010

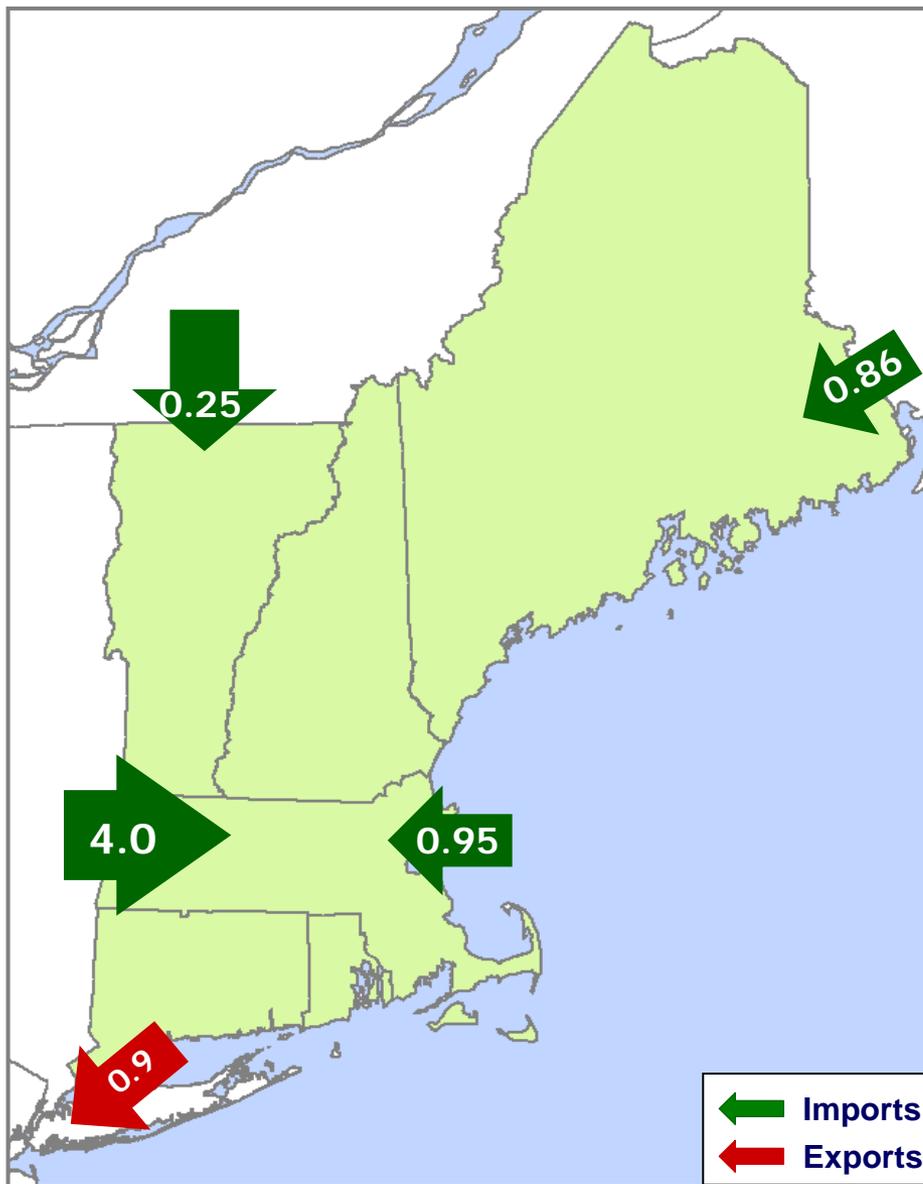
# Pipeline Capacity 2010 (in Bcfd)



**Import Capacity** 6.0 Bcfd  
**Export Capacity** 0.9 Bcfd

Source: ICF International April 2012 Data Base and Compass Report.

# Projected Pipeline Capacity 2020 (in Bcfd)



**Import Capacity** 6.1 Bcfd  
**Export Capacity** 0.9 Bcfd

Source: ICF International April 2012 Data Base and Compass Report.