



RAP

Energy solutions
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New England Energy Supply Electric/Gas Interaction

**CONSUMER ADVOCATE
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NESCOE Study

Black & Veatch

- Phase I: Black & Veatch concluded that the New England natural gas infrastructure will be increasingly under pressure from demand growth from the power sector and that other previous efforts to study the issue had significant information gaps
- In Phase II, Black & Veatch:
 - Concluded that for the 14 New England sub-regions analyzed, 11 will exceed the constraint capacity level by more than 30 days/year under current infrastructure; and
 - In consultation with the states, identified scenarios and sensitivities for analysis

NESCOE Study

Black & Veatch Phase III

- In the absence of infrastructure or demand reduction solutions, New England will experience capacity constraints that will result in high natural gas & electric prices
- Gas-supply requirements driven by episodes of extremely cold weather can be very costly & create significant reliability risks
- Short- & long-term solutions are needed to relieve the natural gas market constraints under the Base Case & High Demand Scenarios
- No long-term infrastructure solutions are necessary under the Low Demand Scenario; The costs of measures that could bring about the Low Demand Scenario, an additional alternative, would require study

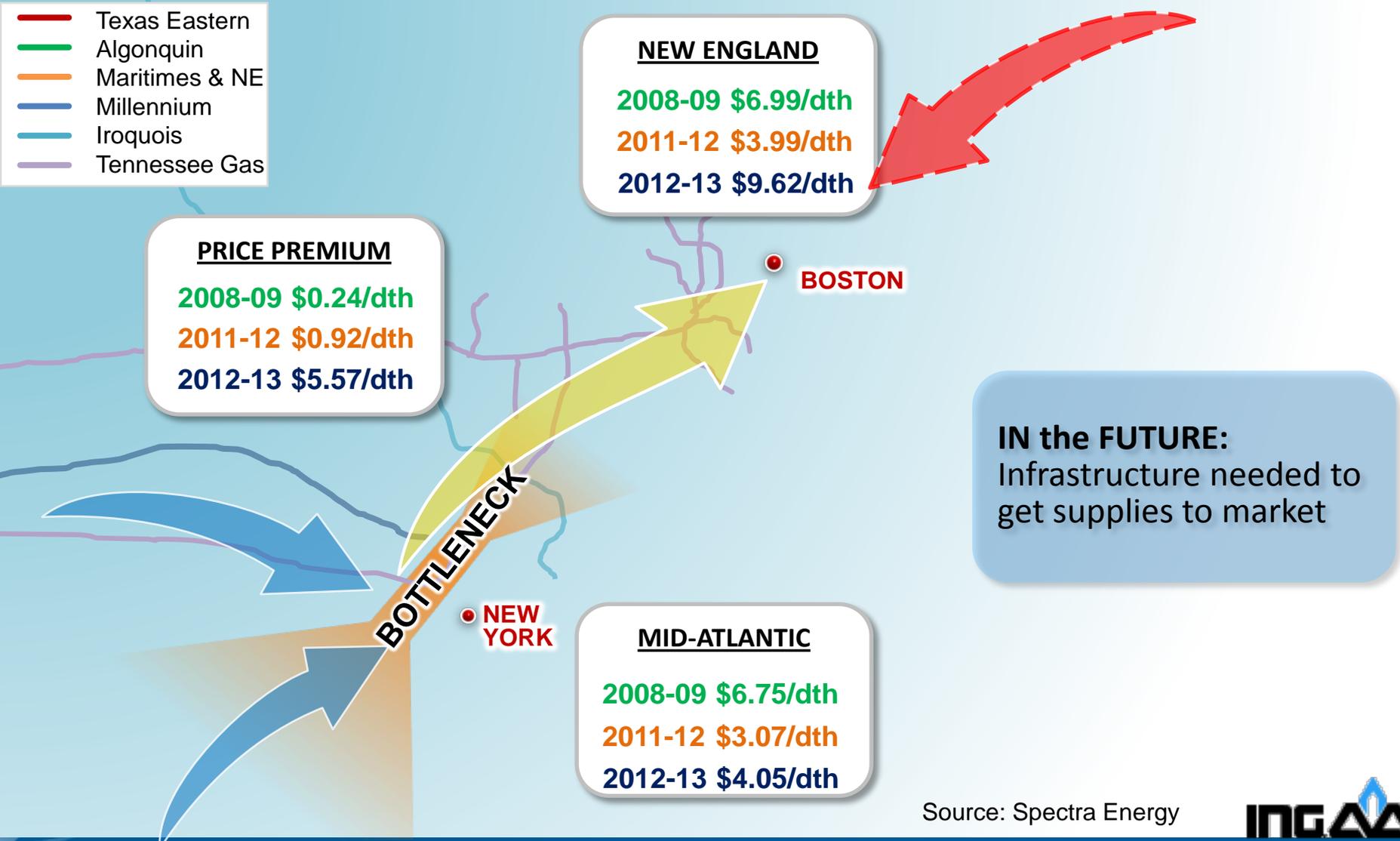
Who Pays?

Interstate Pipeline Corp says to include reliability projects in rates and have ratepayers pay.

The generators say have marketers pay for firm capacity and make it up in commodity sales

Environmentalists say don't invest in a non sustainable future. Use existing pipe more efficiently and reduce demand.

The Region Needs More Pipeline Capacity



How to Get Gas Here

Pipelines Seeking Long-Term Contracts – 10-20 year firm transportation contracts simply not compatible with electricity market and generator needs.

Contracting is Beginning – LDCs have signed up for substantial capacity on pipeline expansion projects. Helps narrow supply issues.

Push from Gas Industry – Most new pipes have come from gas suppliers and marketers bringing the fuel to market. NY/NJ expansion project followed this model

CLF says:

- **Need to maximize benefits of *existing* system**
 - Enhance opportunities to utilize available capacity for electric gen (address illiquidity, coordination and deliverability)
 - Fix leaks
 - Ramp up energy efficiency programs
- **Expand renewable energy (electric/thermal), including DG**
- **Carefully scrutinize GHG impacts of new infrastructure**
 - Ensure consistency with GHG reduction req'ts throughout useful life
 - Must include fugitive emissions, including upstream

Bottom Line: Substantial deployment of long-lived new natural gas pipeline & power generation infrastructure is not consistent with 80% reduction in GHGs by 2050 & would create significant stranded asset risk.

ISO Activities

- **Increased Communication/Coordination** – New England Gas/Electric Focus Group, FERC/ISO efforts driving industry communication

FCM Pay-For-Performance

- ISO is proposing a pay-for-performance (PFP) incentive approach in the FCM – Over-performing resources will be paid a premium through revenue transfers from under-performing resources
- Incentive will drive resources to perform when and where needed, including creating a strong incentive for investment in more secure fuel arrangements
- ISO anticipates filing market rule changes in late 2013 to be effective ahead of FCA 9 for the 2018–19 Capacity Commitment Period (June 1, 2018 through May 31, 2019)

What Does It Mean?

Price Effects on Consumers

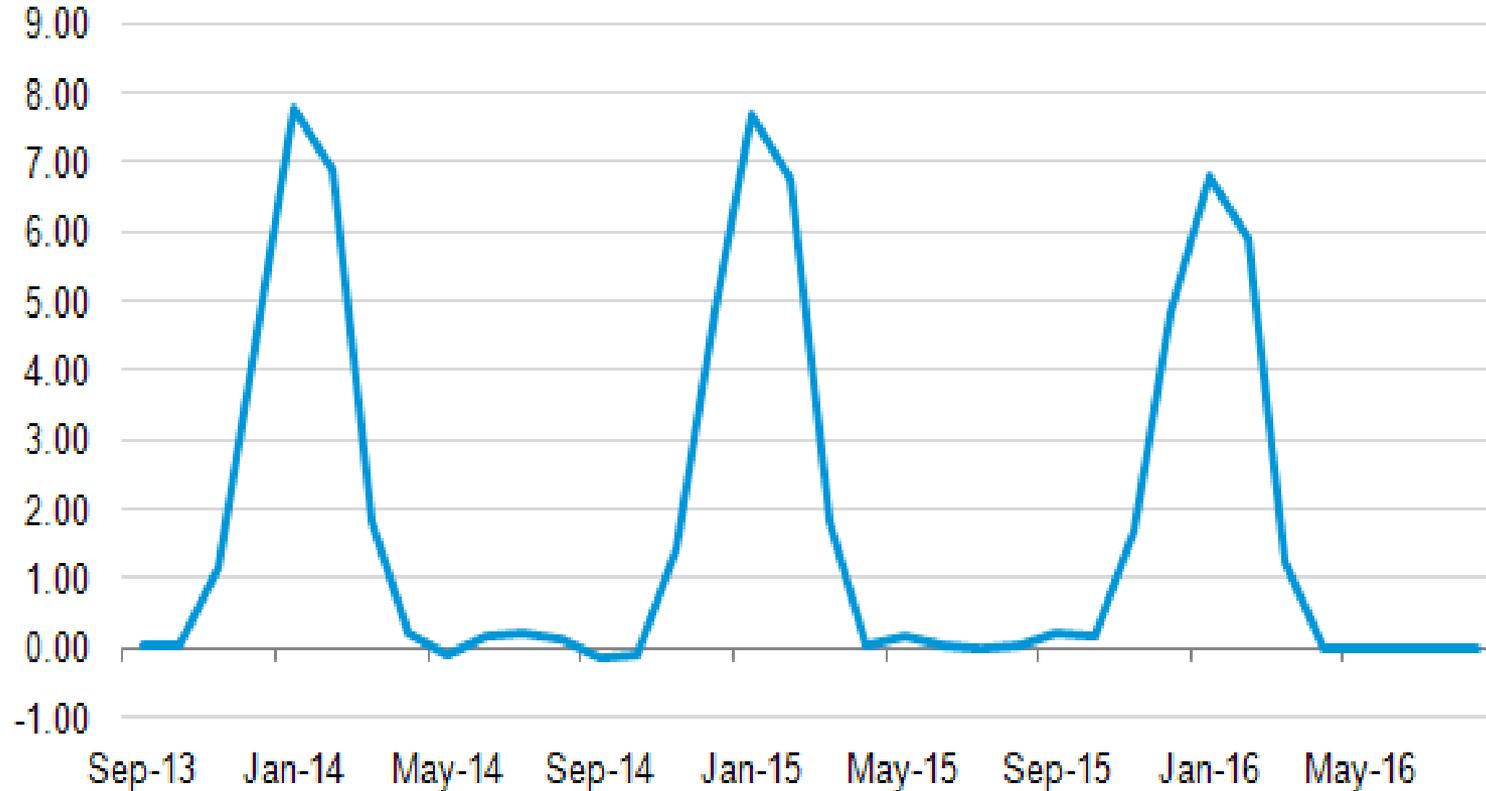
Regional reliability concerns

New Hampshire reliability concerns

Seasonal Nature of Natural Gas Prices

built into offered rates

Forward curve for the Algonquin Citygate basis futures contract
dollars per MMBtu



Reduce Constraints on Pipeline

1. New Gas Supply

1. Cross Region Pipeline

2. LNG

2. Reduce Demand on Existing Pipe

1. Energy Efficiency in Gas and Electric Sectors

2. Import hydro power from Canada

Electric Policy Issues

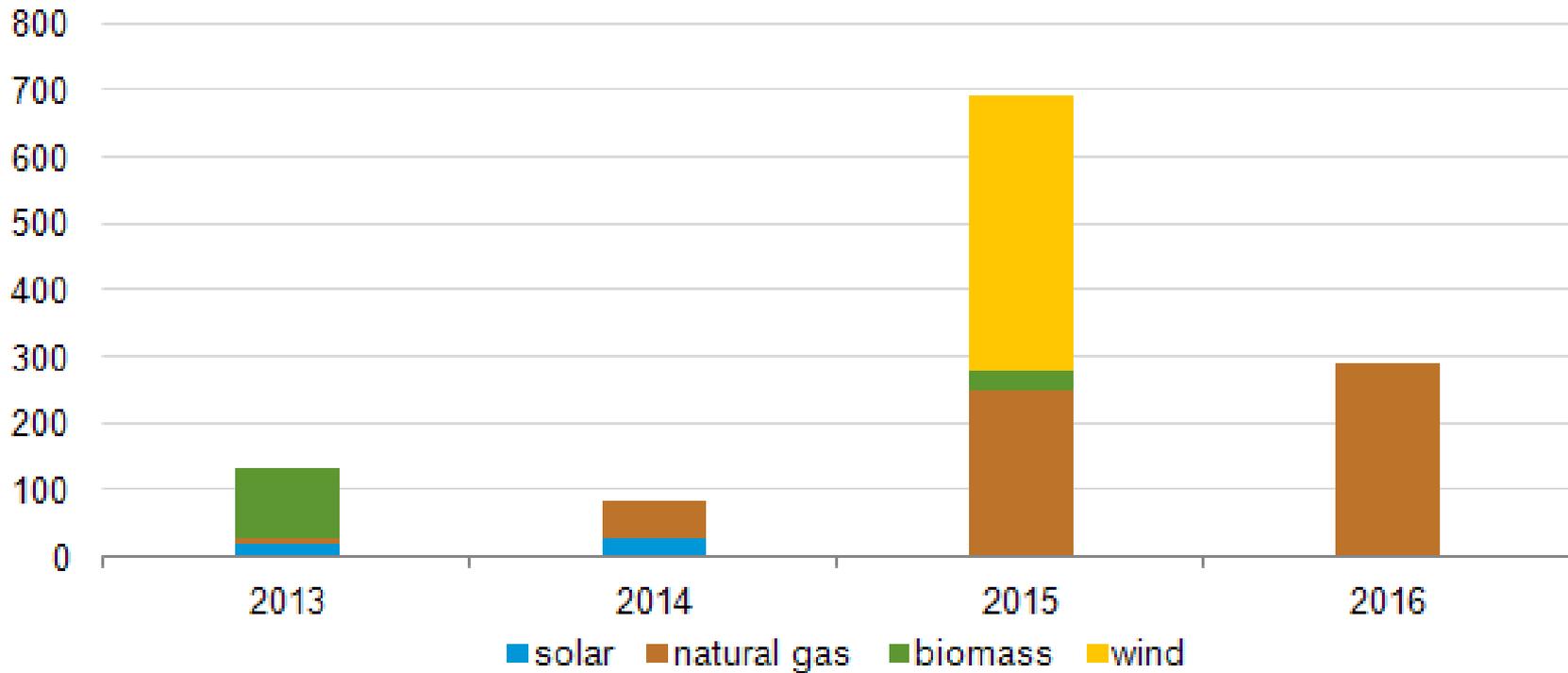
- ***Generator Performance Obligations*** – ISO concerned about natural gas generator performance.
- ***Capacity Market Reforms*** – ISO-NE FCM Performance Incentive proposal to drive generator performance
- ***Provincially-Owned Large-Scale Hydro*** – Moves to subsidize and tilt the playing-field for substantial increases in Canadian hydro imports.

Generator Retirements

- Vermont Yankee
- Salem Harbor
- Brayton Point
- 604 MW nuclear
- 750 MW Coal and Oil
- 1500 MW coal

Capacity Additions

New England capacity additions by fuel
megawatts of net summer capacity



About RAP

The Regulatory Assistance Project (RAP) is a global, non-profit team of experts that focuses on the long-term economic and environmental sustainability of the power and natural gas sectors. RAP has deep expertise in regulatory and market policies that:

- Promote economic efficiency
- Protect the environment
- Ensure system reliability
- Allocate system benefits fairly among all consumers

Learn more about RAP at www.raponline.org

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