



LNG: Still Critical For New England

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Natural Gas Issues in New England

- **New England is dependent on natural gas for power – about 50% of power is generated with gas**
- **Power generators generally do not contract for firm pipeline capacity since the market structure does not provide incentive/signals**
- **LDCs who hold firm capacity generally release it, but on cold days they need it**
- **On cold days – west to east pipeline constraints result in high prices for gas and power**
- **This has resulted in a great deal of debate on how best to meet this shortfall**
- **Potential solutions include:**
 - Oil/dual fuel power
 - Pipeline overbuild
 - LNG Peaking

The Case for LNG in New England

- New England has a peaking gas supply issue, not a baseload issue in the near term
- Even with current pipeline expansion plans, LNG has an important role to meet peak demand for approximately 30 days/year
- Pipeline expansions are largely designed to meet LDC heating load requirements; LNG provides the necessary flexibility to meet the needs of power generation
- Use of LNG as a peaking fuel is hindered not so much by global gas markets but by flawed domestic markets

- The shale gas revolution sweeping North America has rapidly changed the market landscape in the following significant ways:
 - A precipitous drop in gas prices have caused power prices to fall
 - Baseload LNG cargoes to New England have been reduced thus highlighting the peak gas availability challenge the market faces

- Out-of-market solutions to existing challenges have been implemented but only exacerbate the market inefficiencies for which customers inevitably pay. Examples,
 - ISO-NE Winter '13/'14 Oil and Demand Response supplemental procurement
 - ME legislation permitting state purchase of pipeline transportation

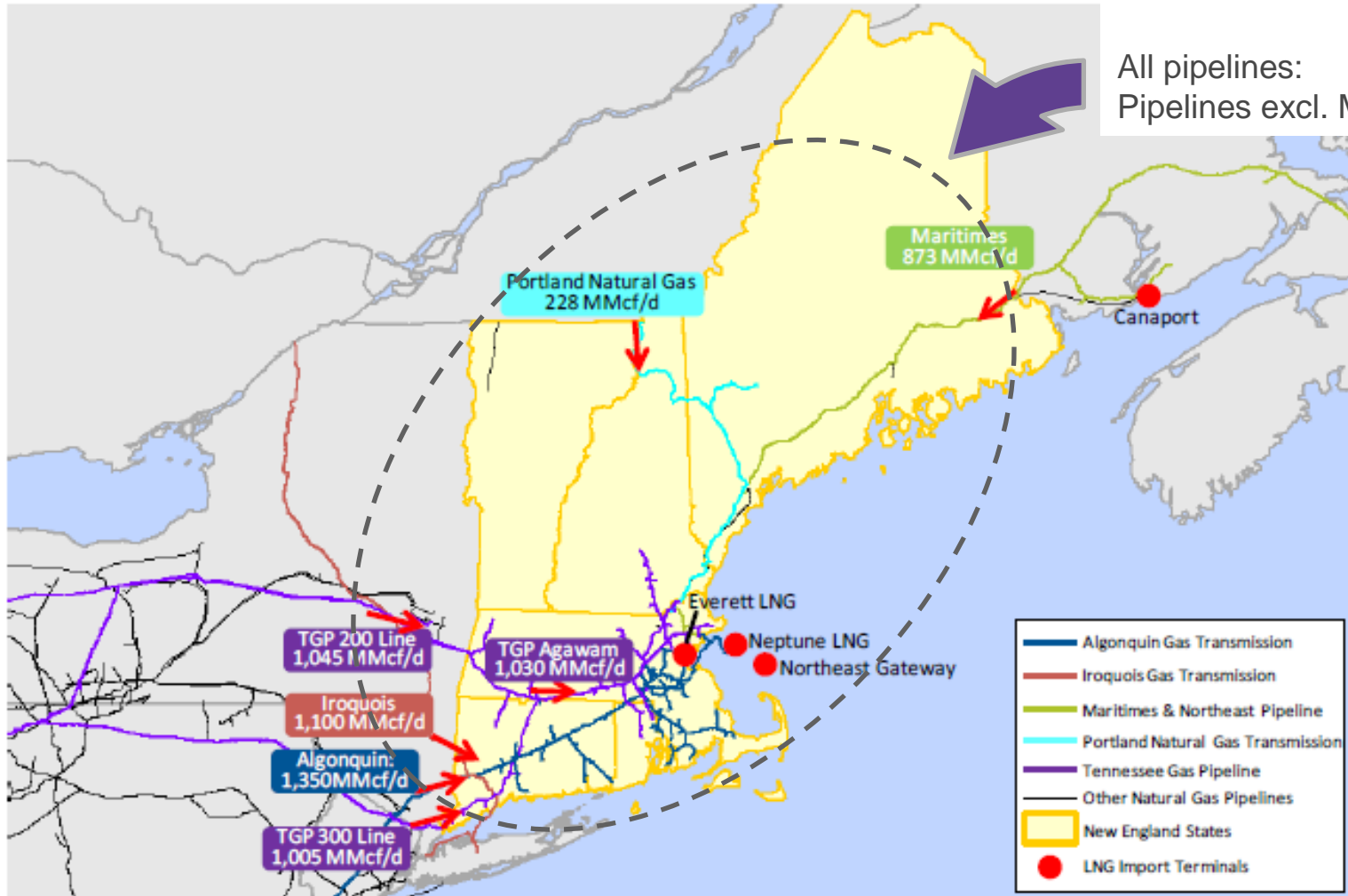
- Though LDC expansions promoted in CT, possible in MA and hoped for in ME, there is limited enthusiasm for a long-term, infrastructure-based approach to natural gas delivery. Pipeline infrastructure is an expensive solution to the winter peaking delivery issue in the short- to mid-term.

- “The [*New England*] region’s reliance on generation with ‘just in time’ interruptible fuel-delivery arrangements has created operational challenges that are escalating rapidly. The region experienced significant operational challenges in January and February (2013) when a significant number of generators were unavailable due to uncertain fuel supplies or storm-related outages. We are seeing this more frequently and it is unsustainable.”
- “The market-based solution to this problem is to strengthen the economic incentives in the wholesale markets to cause generators to make adequate and reliable fuel arrangements, so that they are ready to respond to the ISO when needed.”

ISO-NE CEO Gordon van Welie recent testimony before Congress

GDF-Suez has made several offers to provide such short notice services to the market over the past year but potential generation buyers lack appropriate cost recovery mechanisms to justify purchase of such services

Key pipelines serving New England can deliver up to 4.2 Bcf/d



bcf/d*
 All pipelines: 4.2
 Pipelines excl. M & NE: 3.4

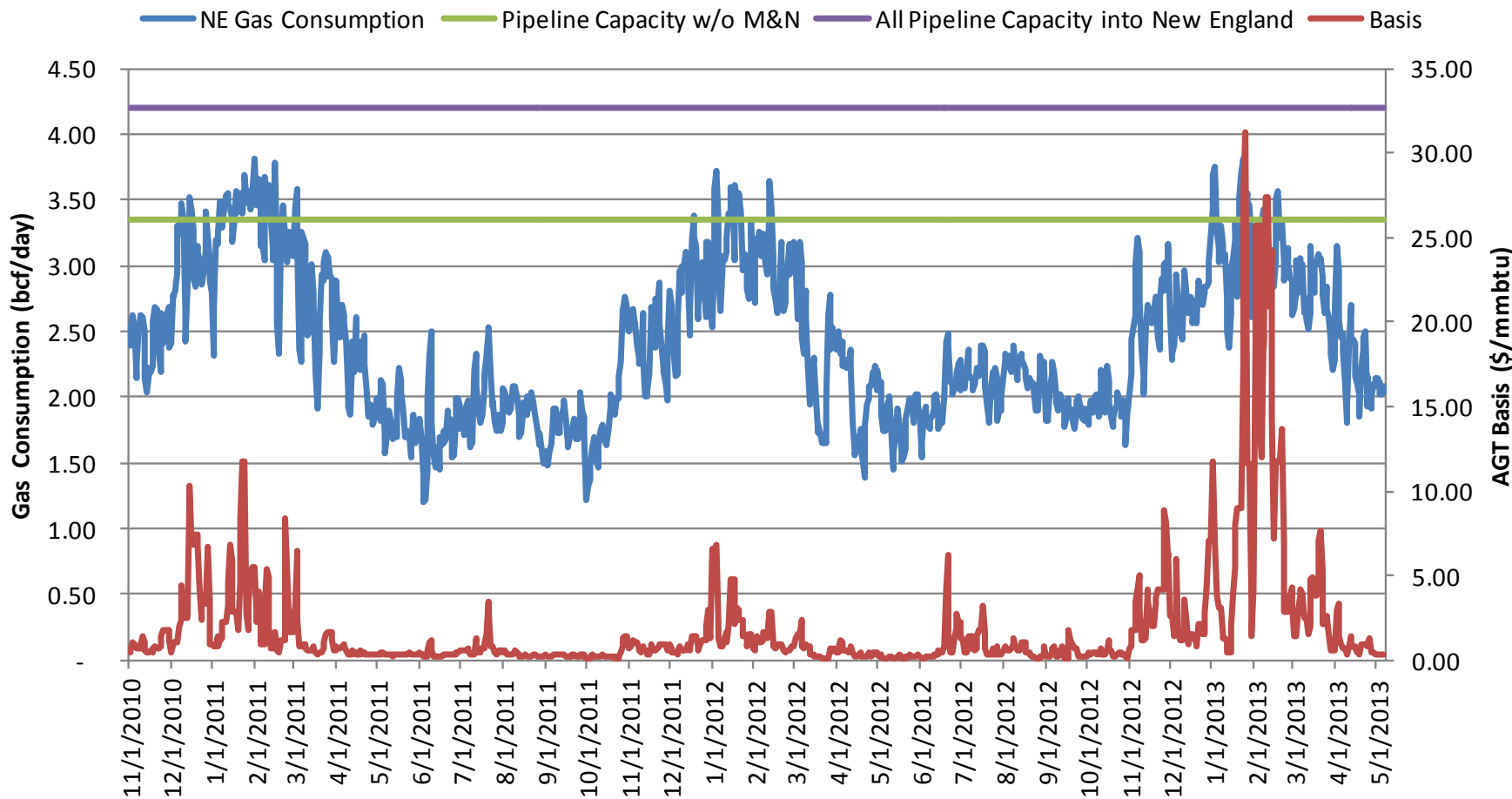
Capacity constraints exist west to east, but not east to west

* GDF SUEZ estimates
 Source: map from Black & Veatch (referencing Energy Velocity, LCI Energy Insight, Pipeline Electronic Bulletin Boards)

New England gas demand over the last 3 years has been well within pipeline capacity...

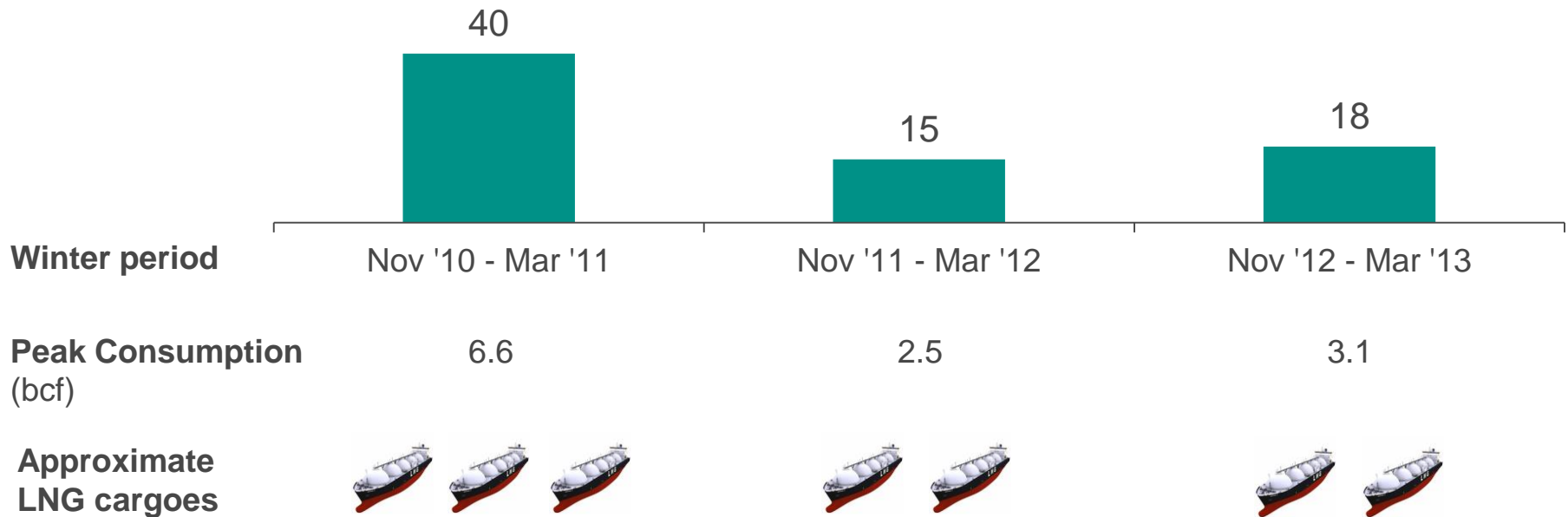
Historical New England Gas Consumption and AGT Basis

(Excludes Mystic 8/9 consumption)



... with peak consumption limited to 40 days or less, and the equivalent of 2+ LNG cargoes

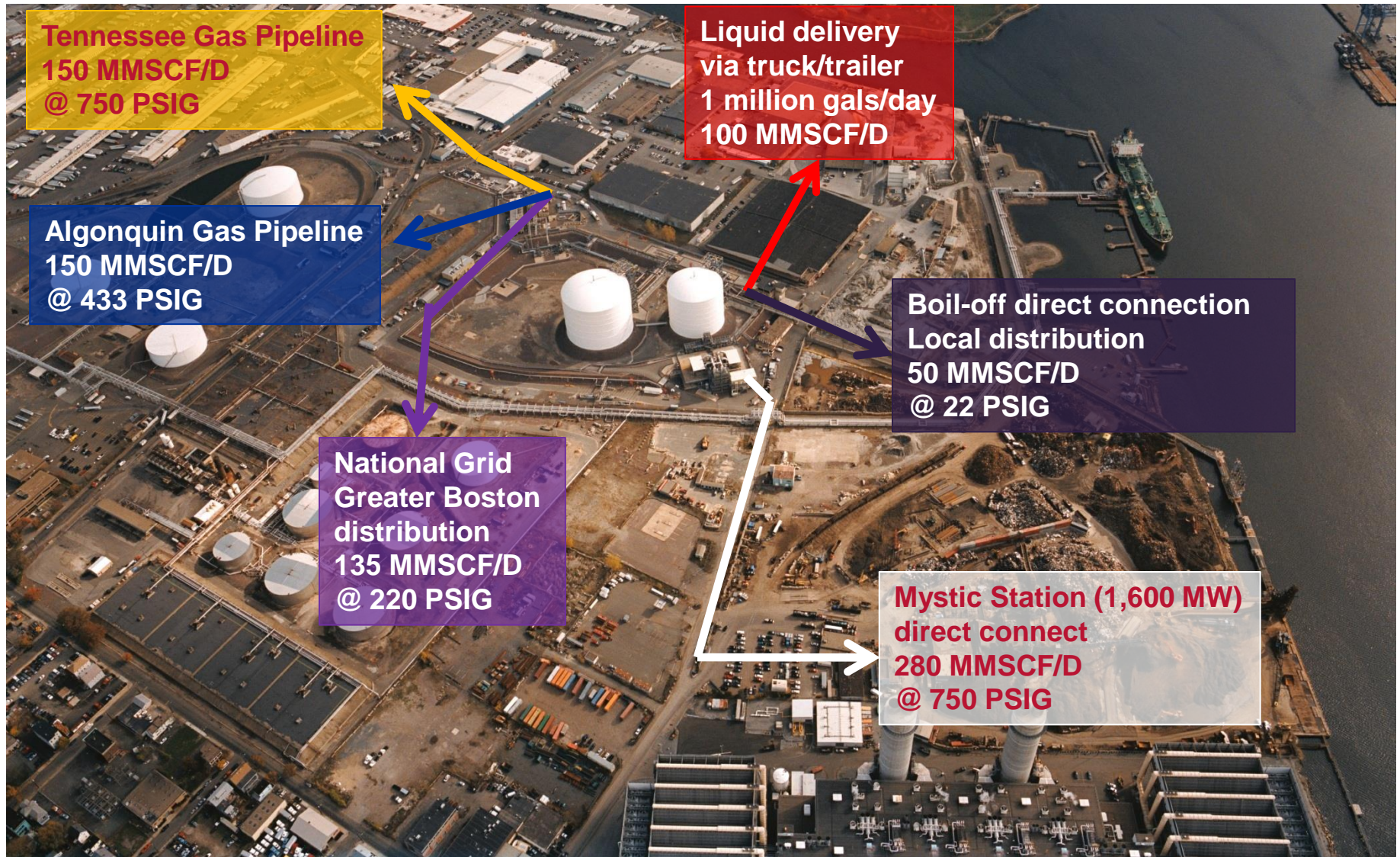
Peak Consumption Days*



- New England **needs winter peaking** capacity, **with or without a baseload pipeline solution**; in fact, increased gas demand for both heating and power generation will likely make the peaking requirement even greater
- **Distrigas** Peak Send-Out of 0.5 bcf/day (excluding Mystic 8/9) **could easily accommodate** additional volume during Nov-Mar period

* Defined as period when demand exceeds 3.4 bcf/d of pipeline capacity excl. Maritime and NE

Everett Marine Terminal: capability to serve key systems simultaneously



- The “gas issue” in New England is a peak supply issue; not a lack of gas infrastructure
- The problem is one of relatively short duration – approximately 30 days
- The ISO-NE needs to solve the market design flaw that precludes power generators from recovering the cost of flexible fuel supply during peak demand periods
- LNG can be economically delivered to the New England market during peak periods provided commitment is made with enough time to facilitate logistics