

New England Roundtable

**Future of Natural Gas in New England
and Interaction with Electricity Markets**

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MARKET DESIGN, ECONOMICS AND POWER SYSTEMS

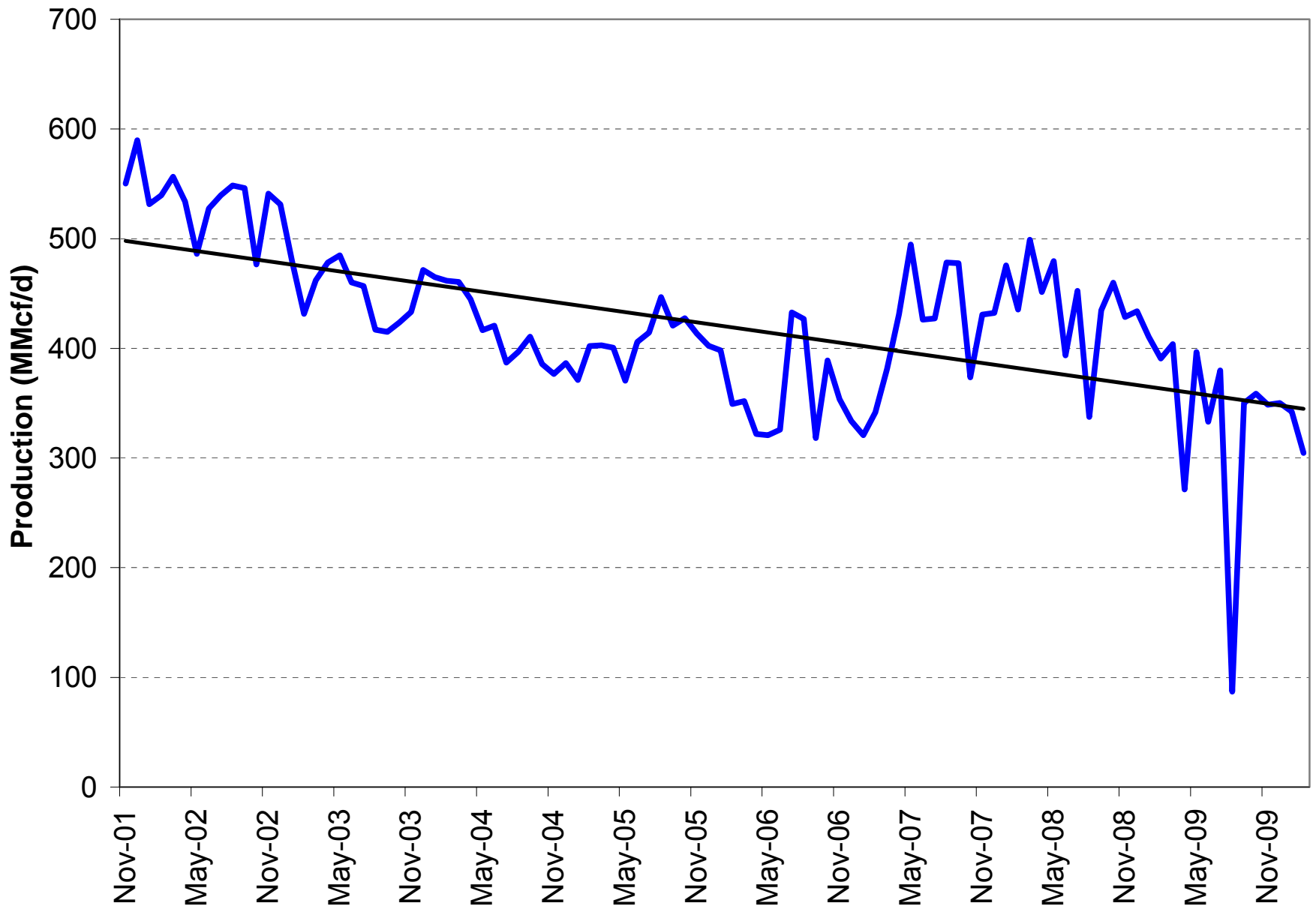
Key Questions

- ◆ What's the new conventional wisdom and why the radical shift?
- ◆ Is cheap natural gas a transient phenomenon or here to stay?
- ◆ Is Marcellus Shale a game changer, one that will indefinitely flood the market in the greater Northeast?
- ◆ Is New England's gas supply diversified?
- ◆ What's on the horizon for natural gas power plants in New England?

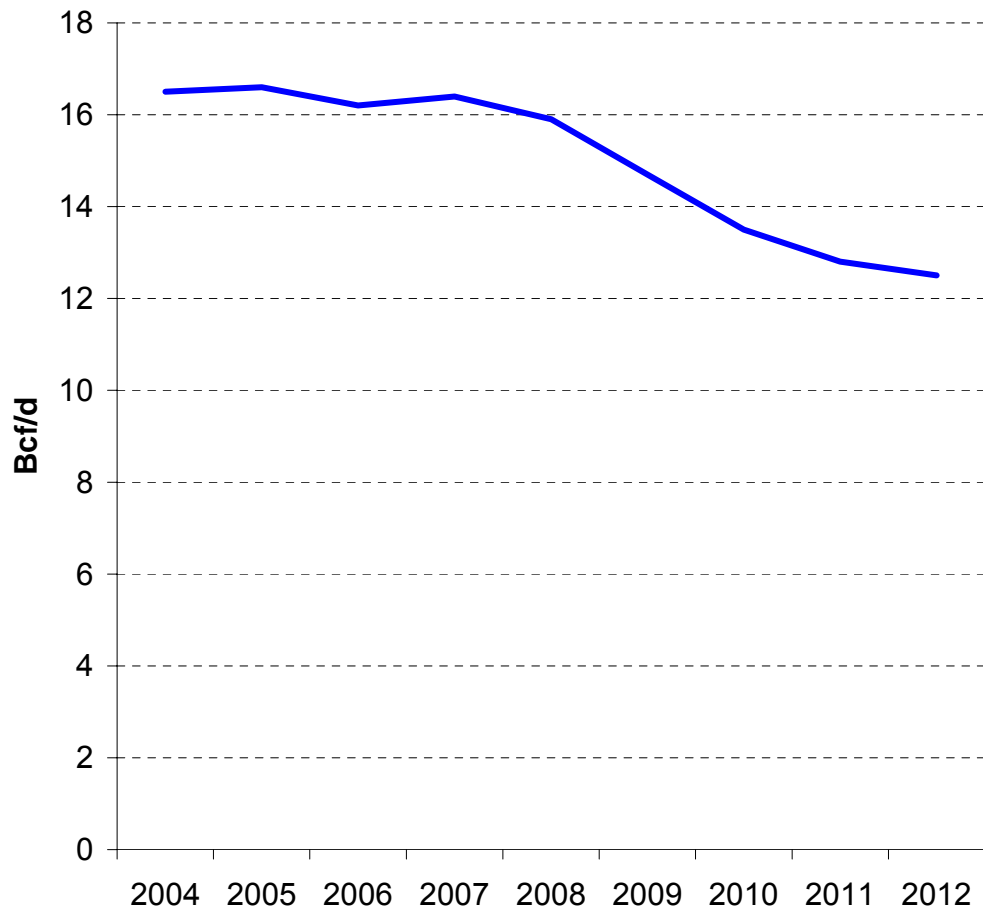
What's the new conventional wisdom and why the radical shift?

- ◆ Accelerated maturation of conventional resources will be more than offset by unconventional gas production from CBM and shale gas
- ◆ Changes in fracturing and horizontal drilling technology allow for less expensive and more rapid development
- ◆ Decline in WCSB gas coupled with oil sands development jeopardizes long haul transport from Canada
- ◆ Massive increase in worldwide liquefaction capability, LNG tankers, and U.S. regas capability
- ◆ Critical reliance on LNG no longer required to ensure commodity balance

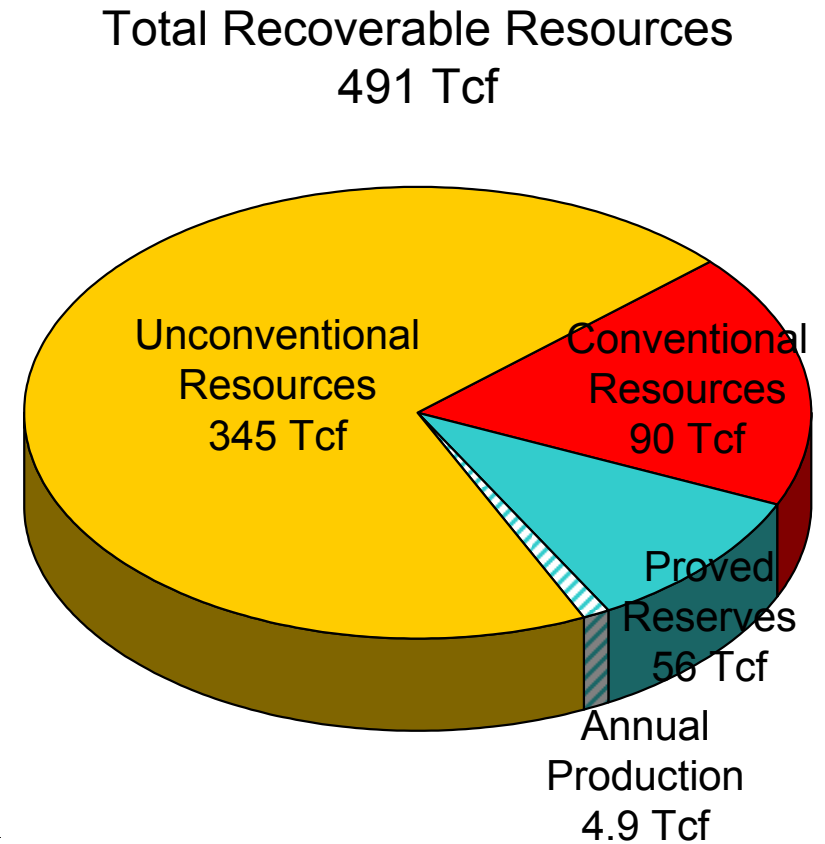
Declining SOEP Production



WCSB Resource, Reserves and Deliverability



Source: NEB



Proved Reserves	56 Tcf
Remaining Conventional Resources	146 Tcf
Recoverable Unconventional Resources	345 Tcf
Total Recoverable Resources	491 Tcf

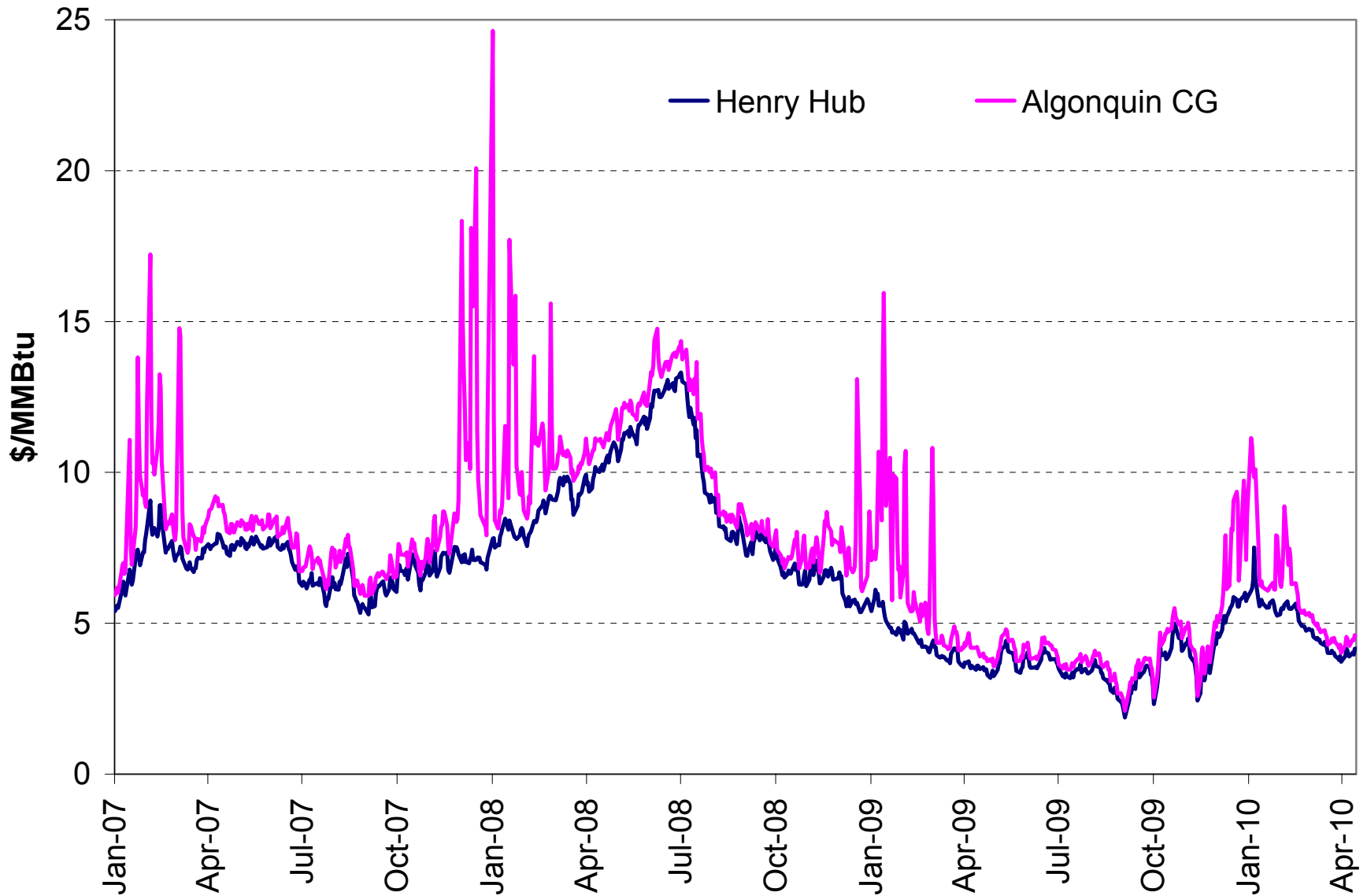
Source: CAPP

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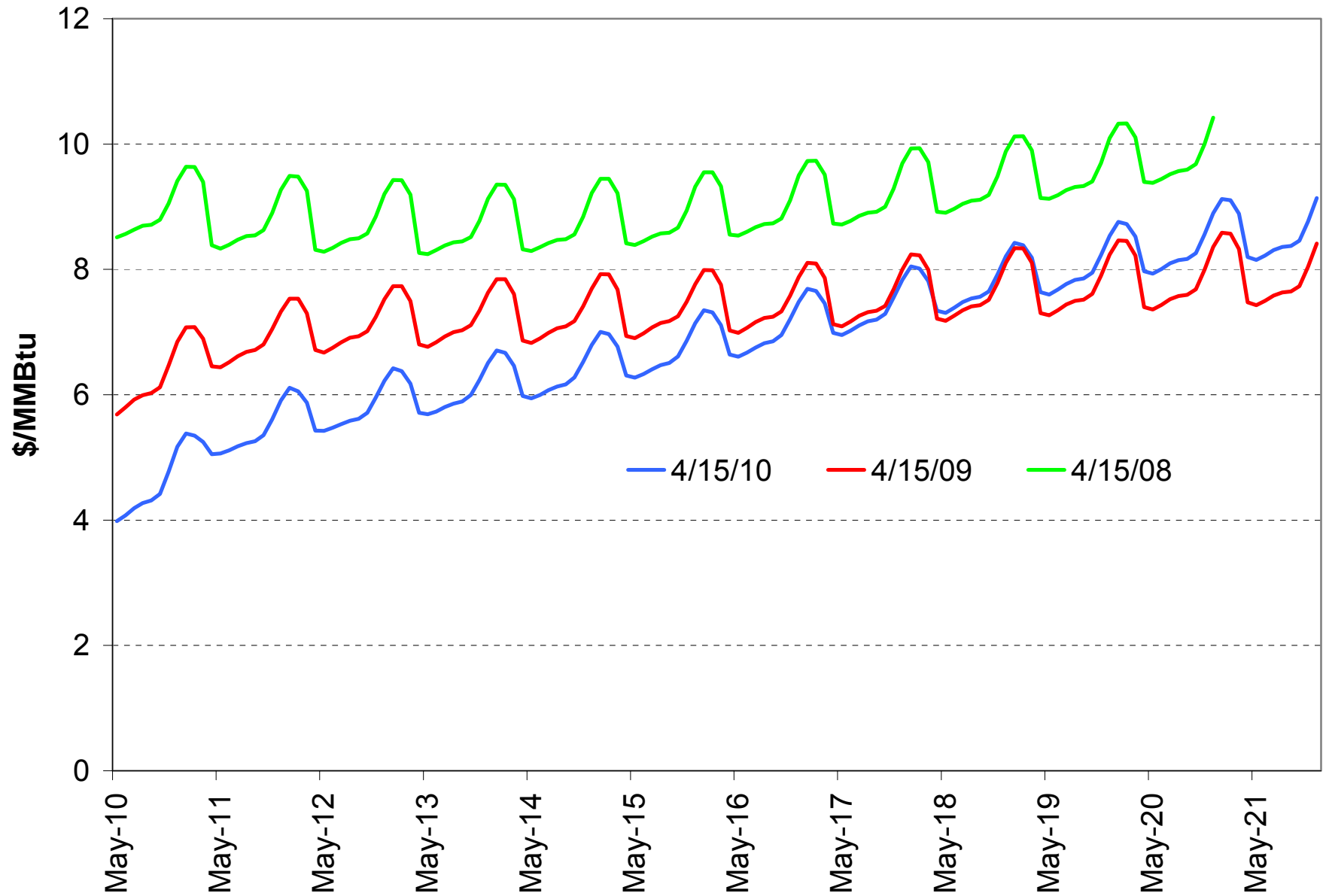
Is cheap natural gas a transient phenomenon or here to stay?

- ◆ Natural gas will remain volatile and should remain moderately priced over the long run, i.e., \$5.00 - \$8.00 into-the-pipe
- ◆ Traditional oil-to-gas Btu parity ratio is passé
- ◆ “Basis” to New England will reflect increased commoditization of gas supplies across North America, in particular, growth of Marcellus shale
- ◆ Basis blowouts due to periodic deliverability constraints are infrequent and short-lived

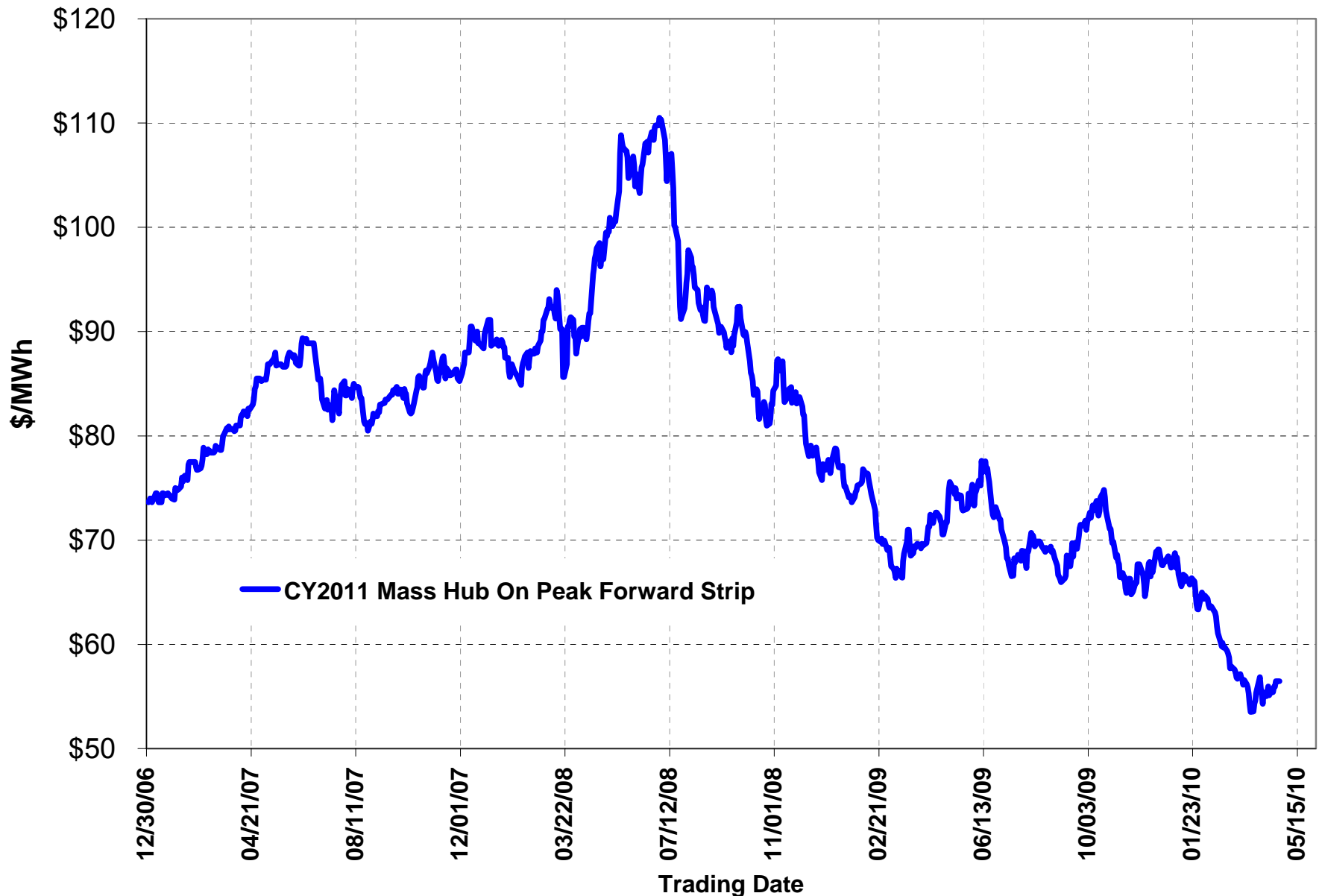
Natural Gas Daily Spot Price



NYMEX Henry Hub Futures



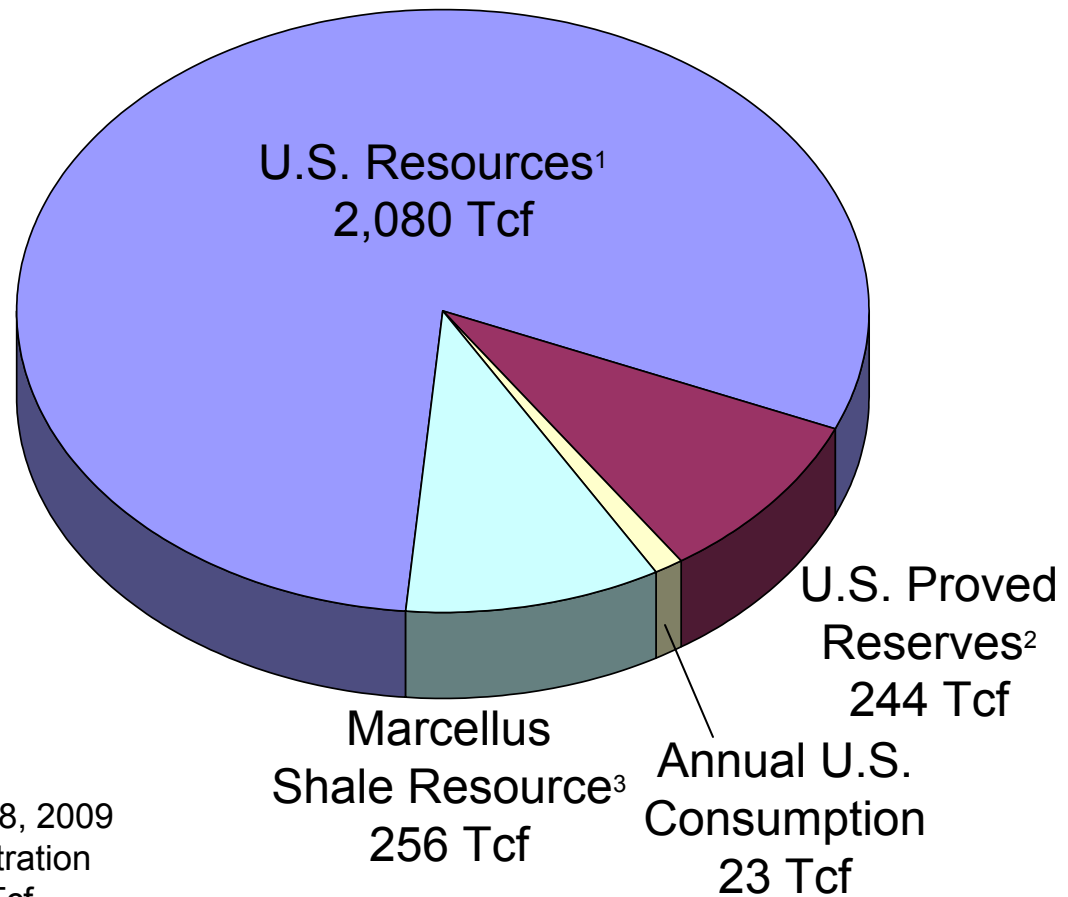
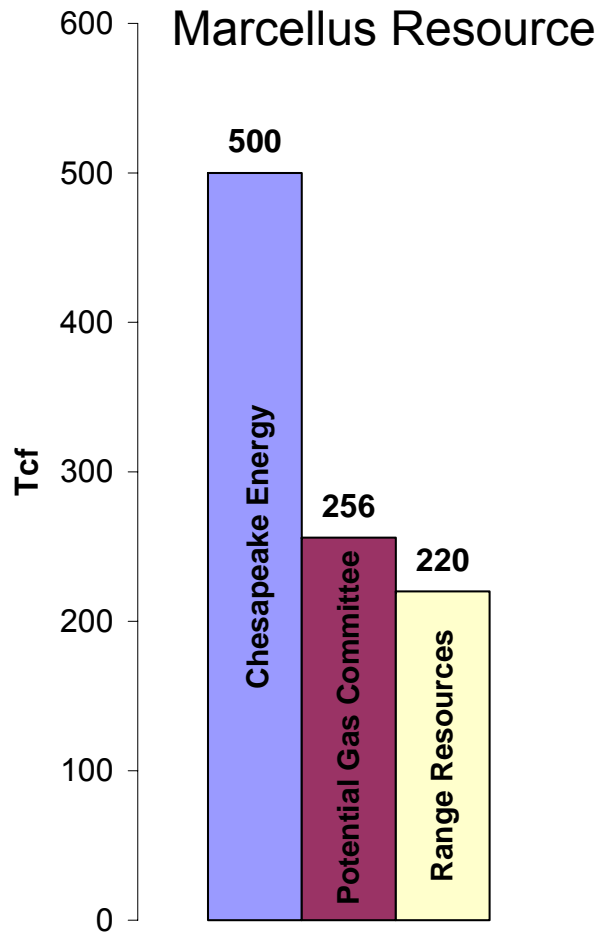
MassHub On-Peak Forward Prices



Is Marcellus Shale a game changer, one that will indefinitely flood the market in the greater Northeast?

- ◆ Proximity to market center, sense of momentum, horizontal multi-frac technology a definite game changer
- ◆ Disparate views re production forecasts, ramp-up

Marcellus Shale Resources

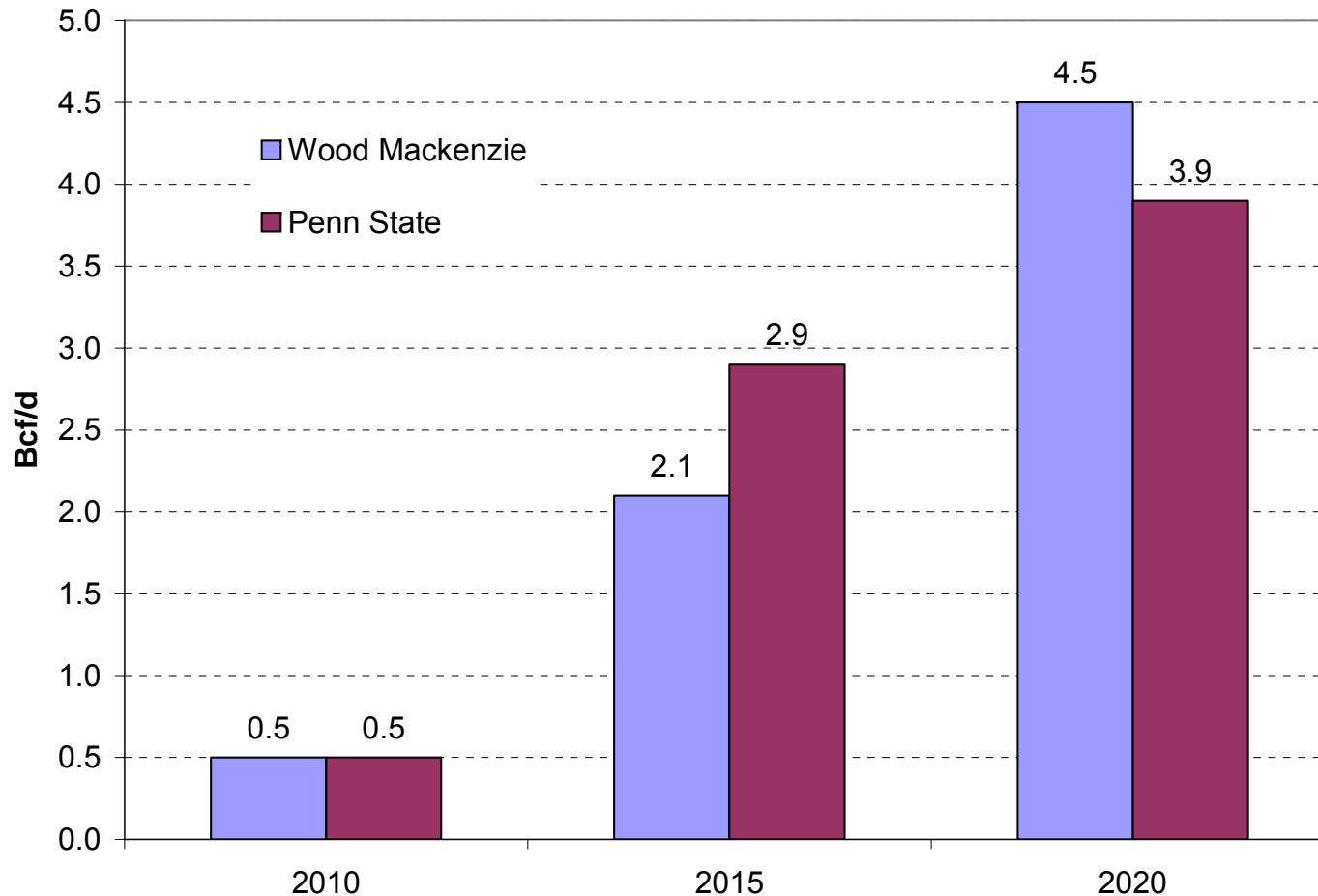


¹ Potential Gas Committee, June 18, 2009

² U.S. Energy Information Administration

³ Marcellus Proved Reserves < 1 Tcf

Marcellus Shale Production Forecasts

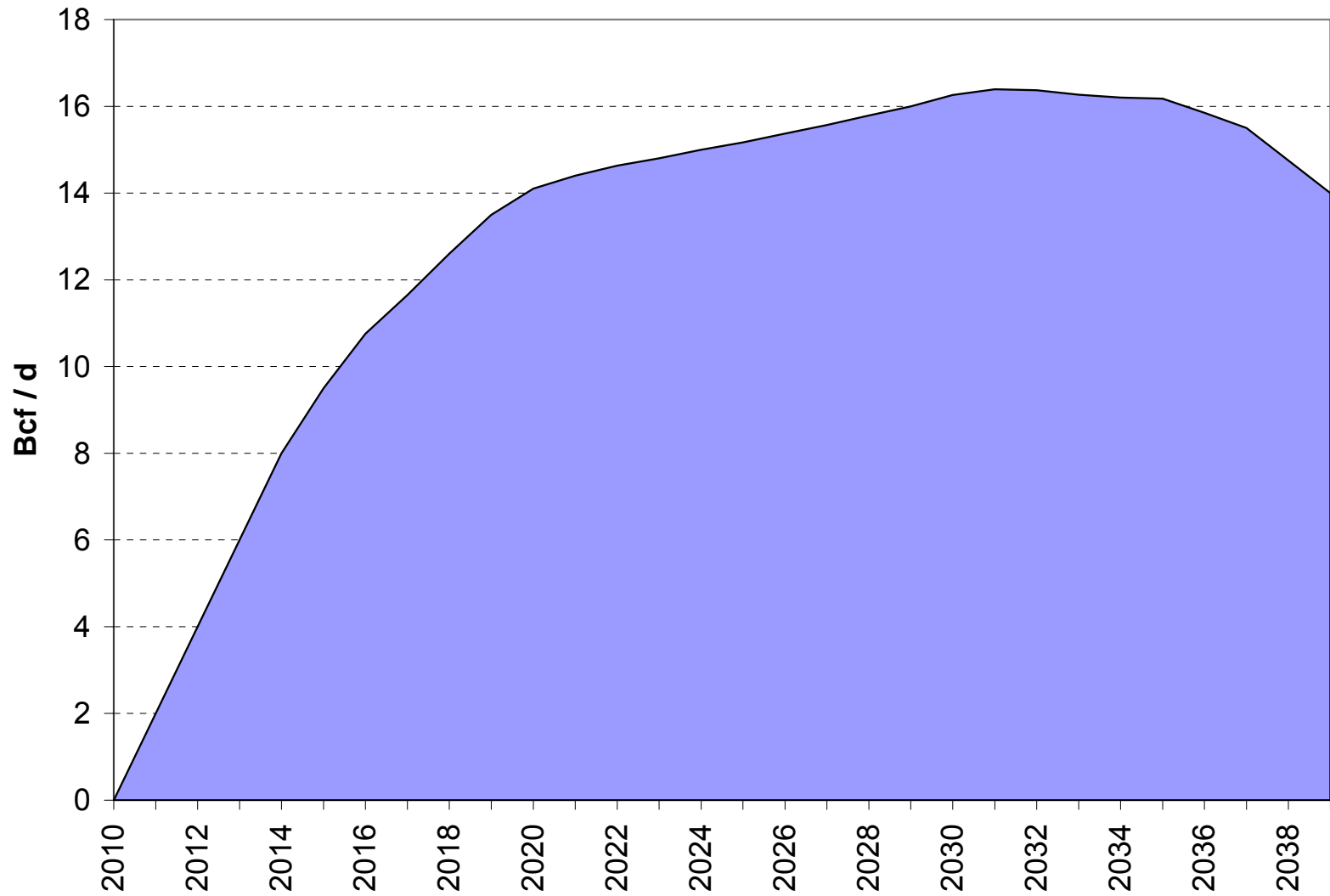


Sources: "An Emerging Giant: Prospects and Economic Impacts of Developing the Marcellus Shale Natural Gas Play." T. Considine, R. Watson, R. Entler, J. Sparks, The Pennsylvania State University, College of Earth & Mineral Sciences, Department of Energy and Mineral Engineering. July 24, 2009.

Integrated Resource Plan for Connecticut. The Brattle Group. January 1, 2010. (Wood Mackenzie)

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Marcellus Shale Production Outlook

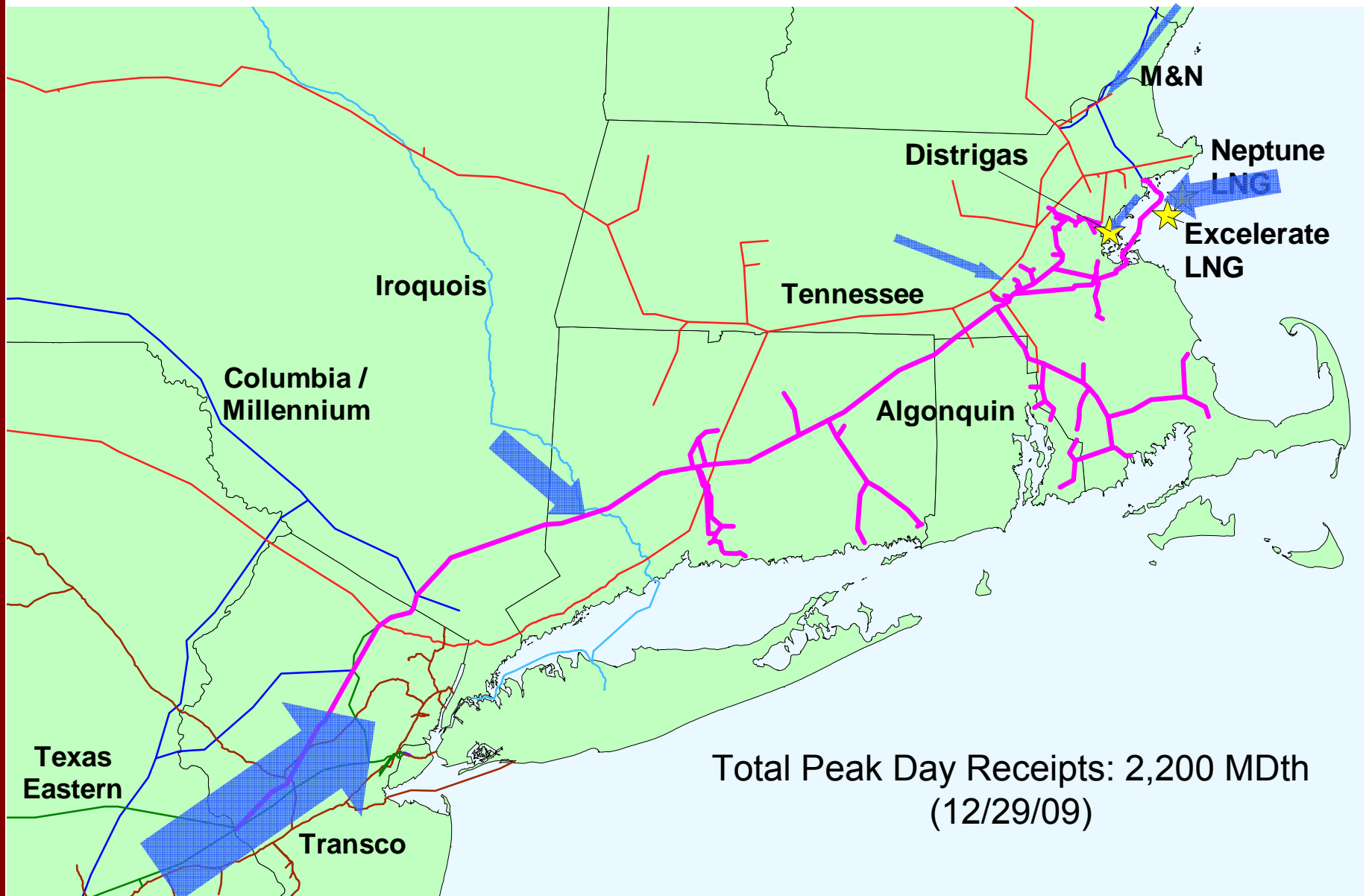


Source: Williams Partners L.P.

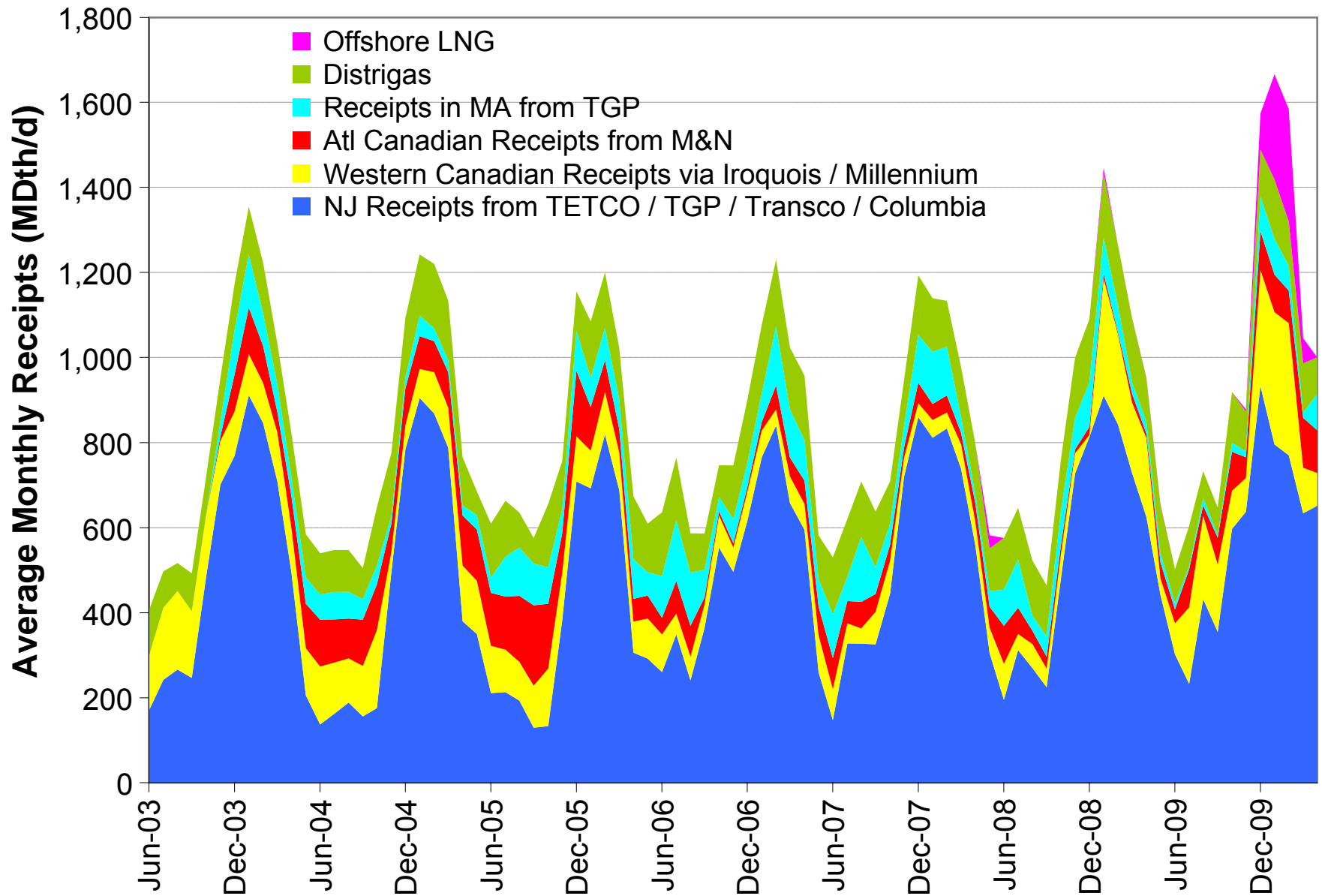
Is New England's gas supply diversified?

- ◆ Greater intra-regional delivery flexibility than ever before
- ◆ Decline of Sable Island offset by Repsol via M&N
- ◆ TCPL long haul transport up for grabs → Iroquois now seasonal carrier
- ◆ Algonquin / M&N injecting diversity benefits across system
- ◆ Tennessee also well-positioned for increased market share

Algonquin Flows: Peak Day 2009-10



Algonquin: Receipts by Supply Source



What's on the horizon for natural gas power plants in New England?

- ◆ Newer vintage CC's performing well w/o long haul primary transportation entitlements
- ◆ Very limited growth due to EE / DR / Renewables
- ◆ Repowering potential necessitates EDC sponsorship and intra-regional buildout