

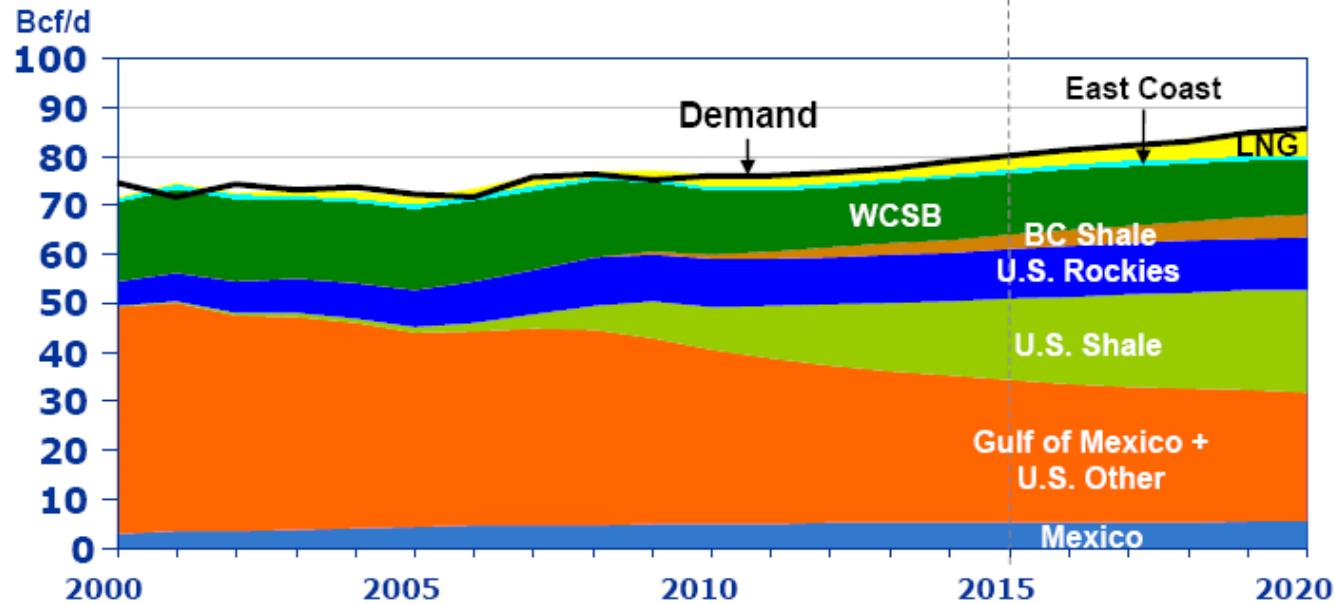
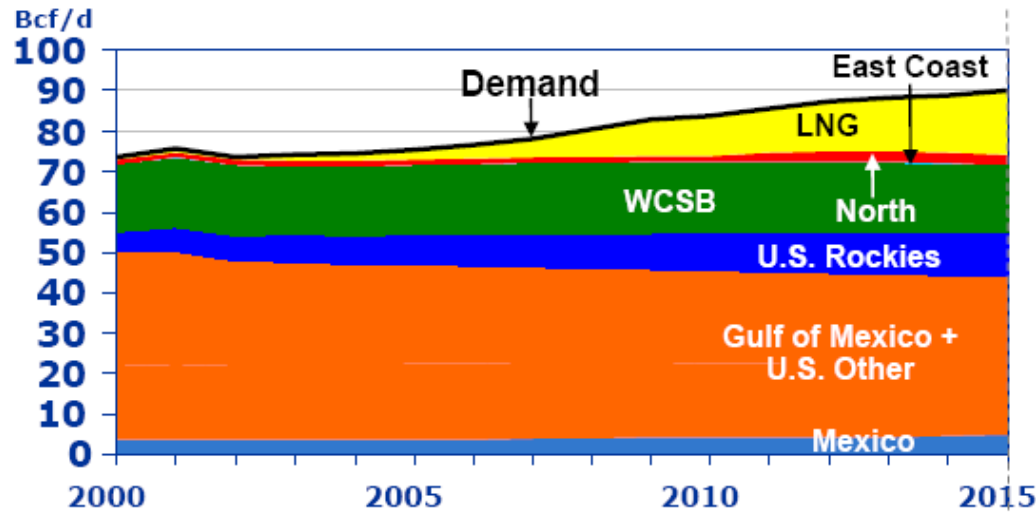
Growth Prospects for Appalachian Gas: Good Access Trumps Market Fundamentals

Platts 3rd Appalachian Gas Conference
October 28, 2010

Richard Levitan, rll@levitan.com

LEVITAN & ASSOCIATES, INC.
MARKET DESIGN, ECONOMICS AND POWER SYSTEMS

Fundamental Shift in North American Supply/Demand

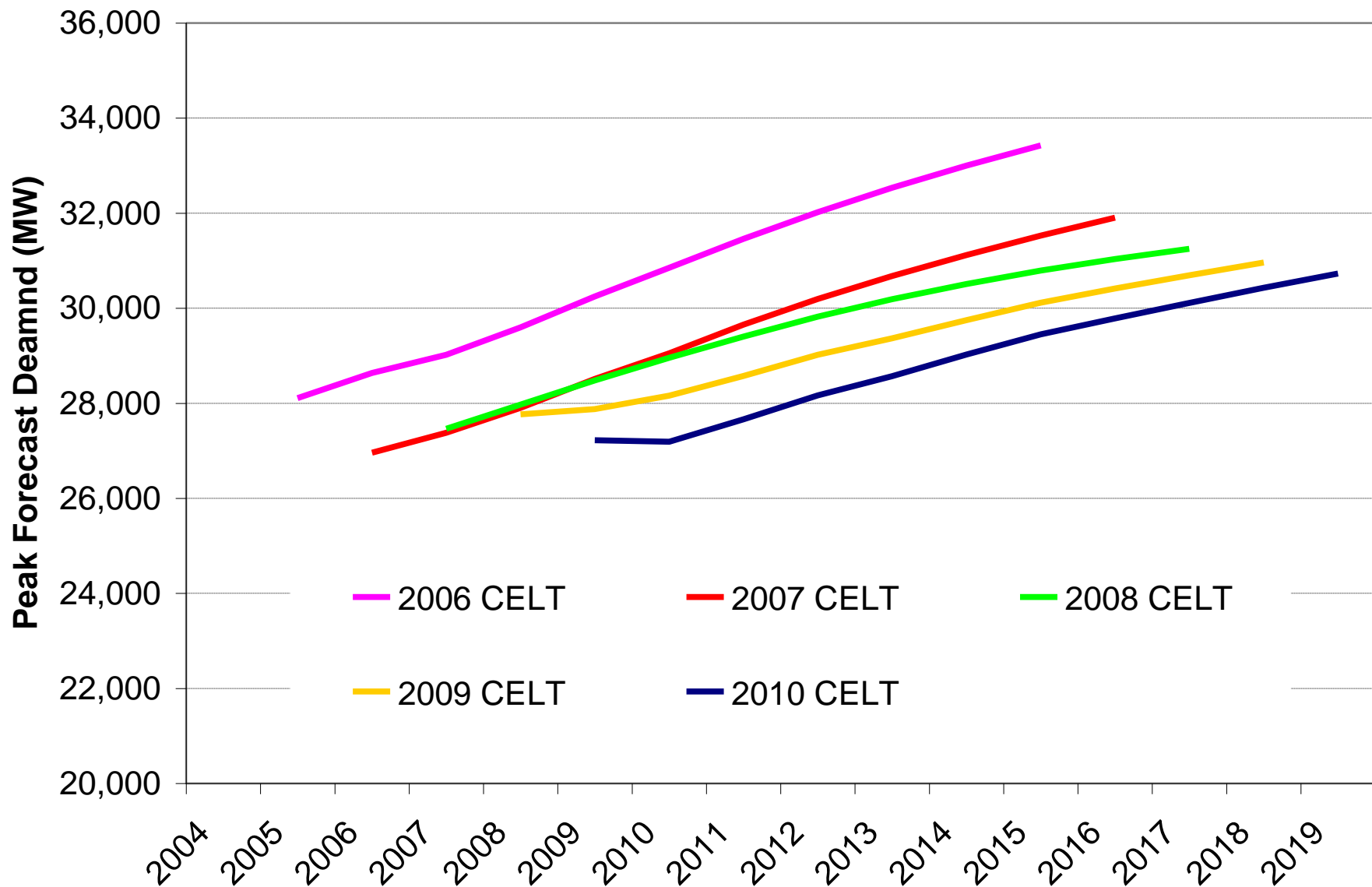


Source: TransCanada, NECA Conference, 9/28/10

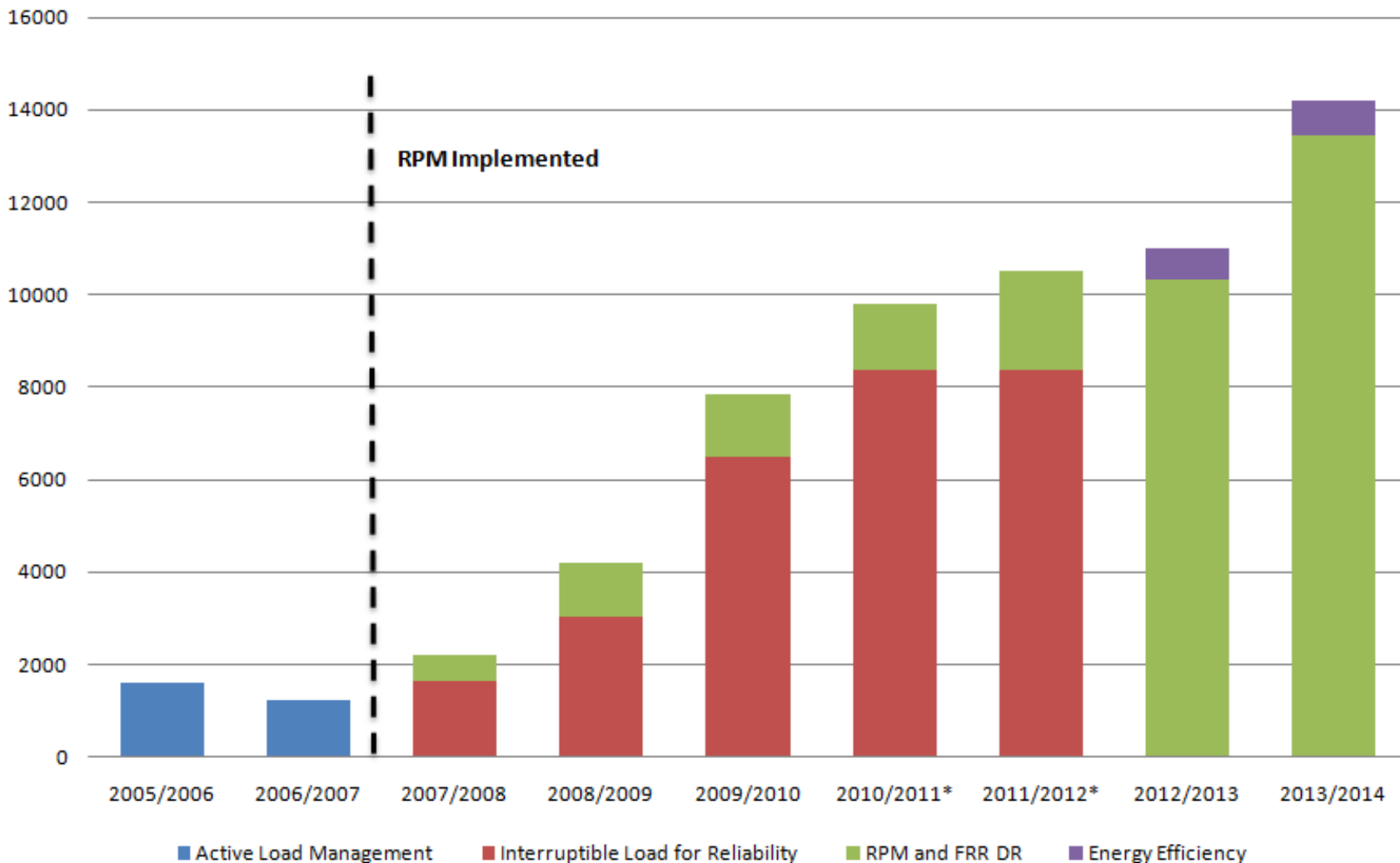
Market Fundamentals for Marcellus Shale

- Bullish indicators
 - Prolific shale gas outlook
 - Proximity to major market centers
 - Maturational effects in the Gulf Coast, WCSB
 - Gas is inexpensive, oil-to-gas parity ratio near all time high
 - Strong environmental inducements
 - Repowering prospects
- Bearish indicators
 - Low LDC growth prospects
 - Capacity price signals in regional capacity markets
 - Emphasis on efficiency—both gas and electric
 - Renewable entry →displacing thermal genco
 - Anticipated MW overhang
 - Dispatchability of DR, EE

Low electric demand (New England)

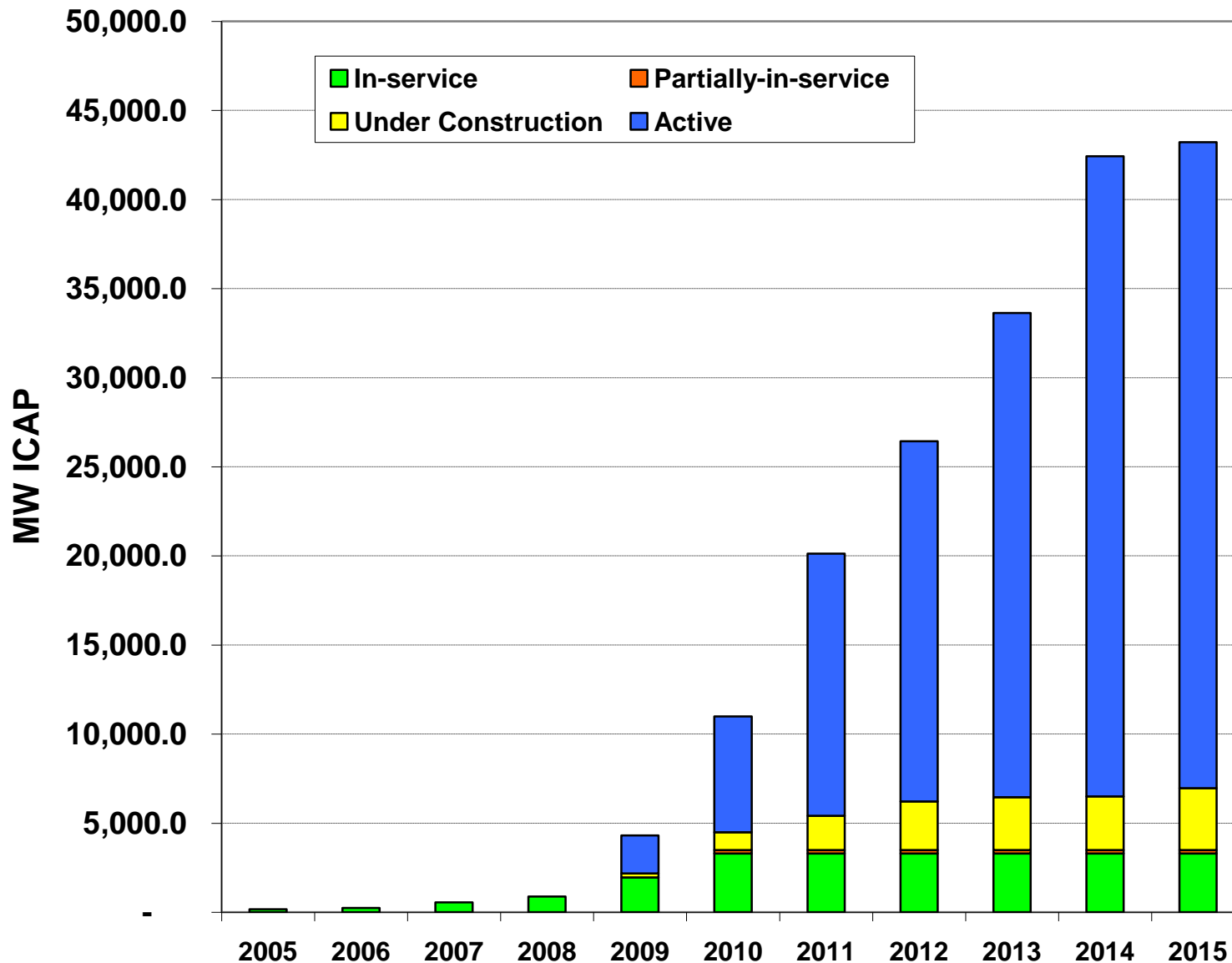


High Penetration Rate of DR / EE



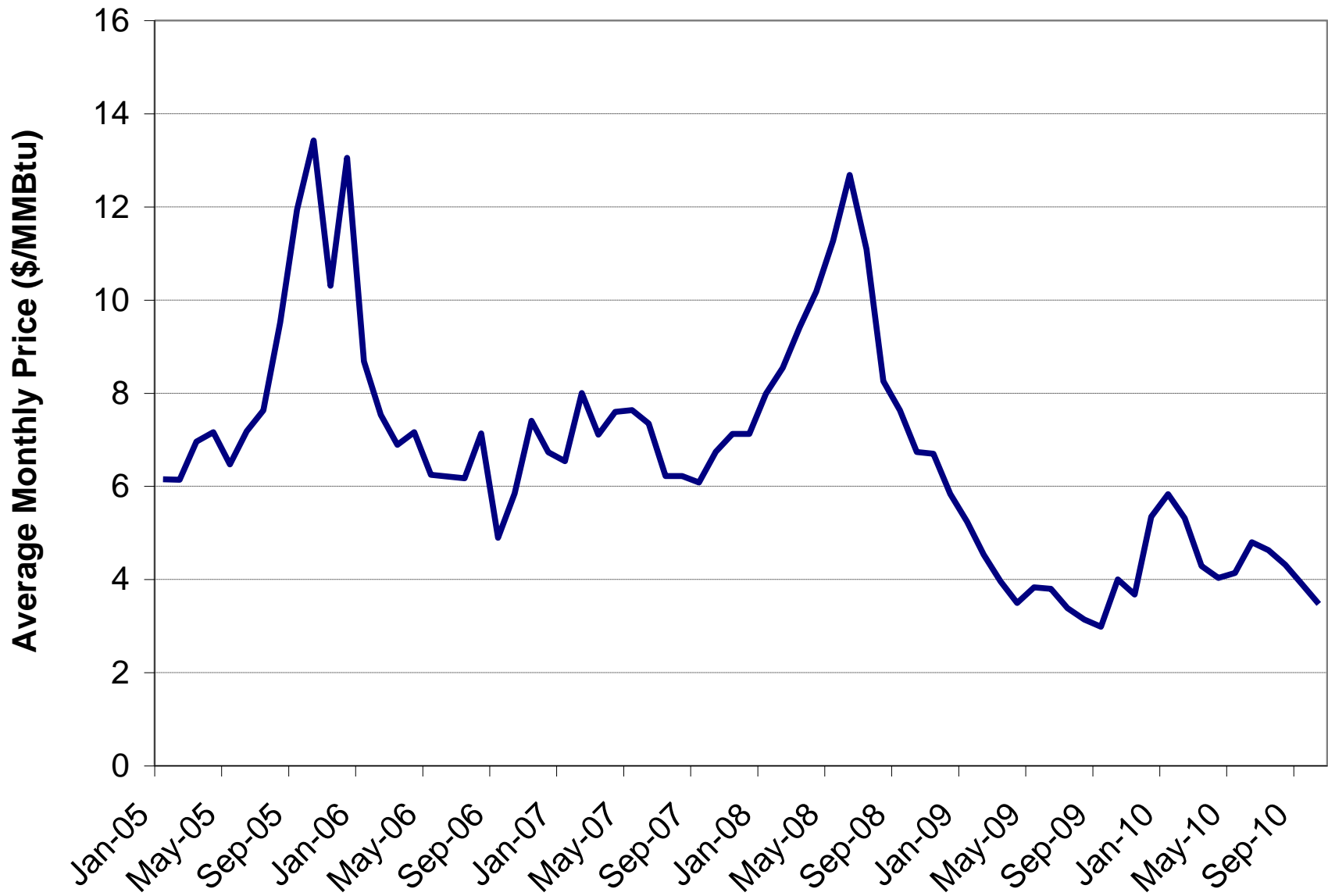
Source: PJM

Wind resource growth in PJM

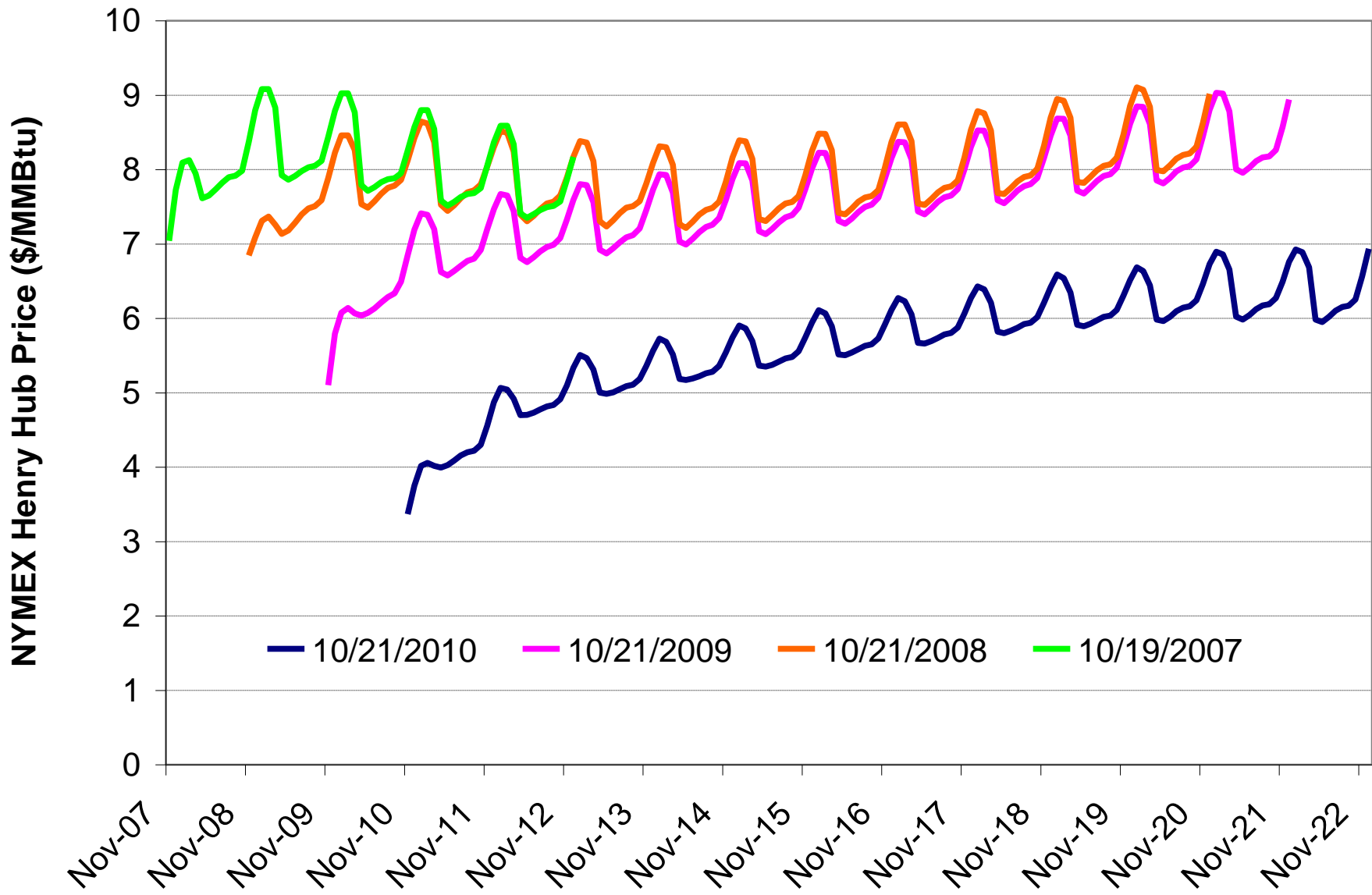


Source: PJM

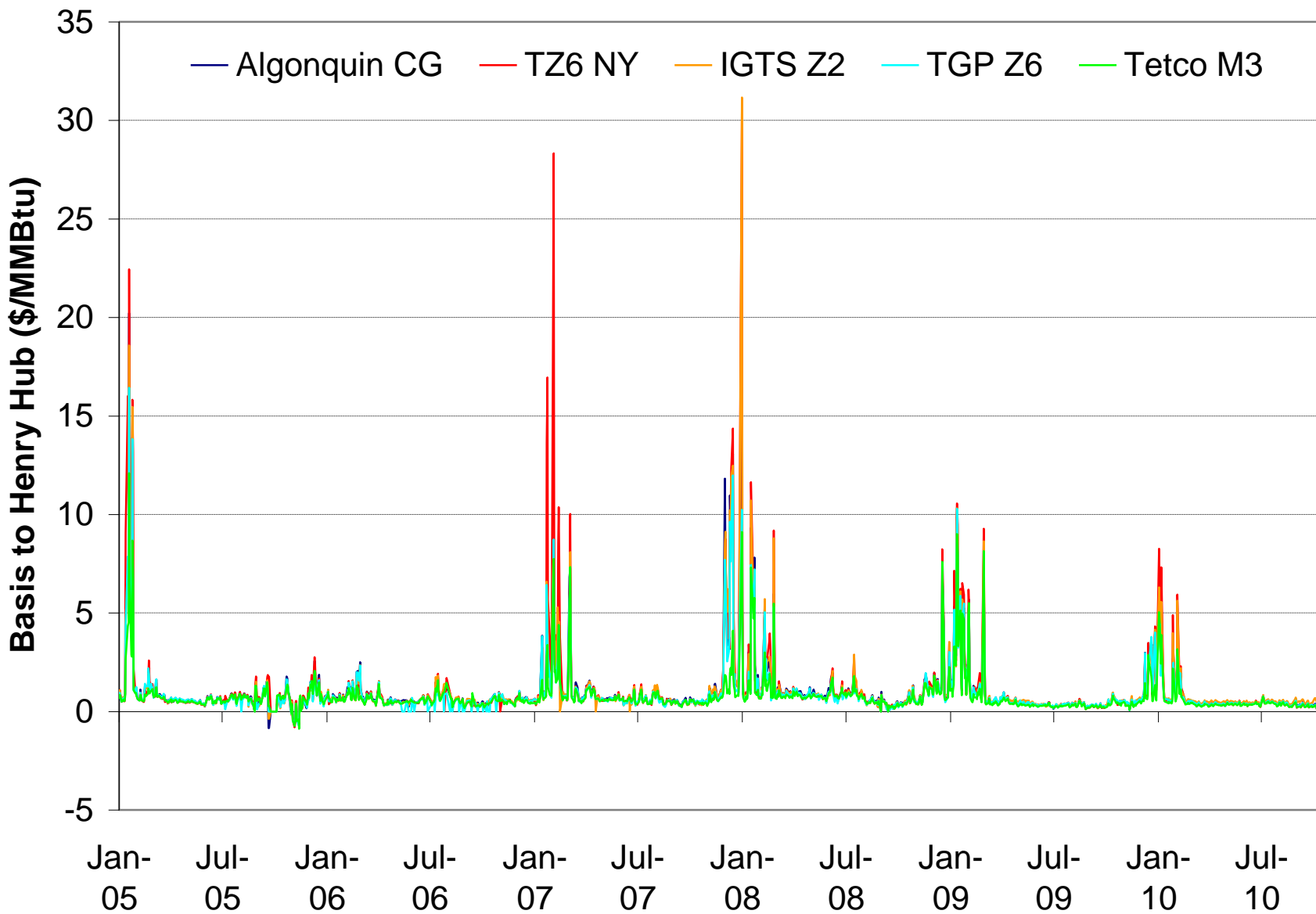
Commodity Prices at Henry Hub have pulled way back



NYMEX futures



Daily basis at key pricing points in 3 market areas



Gas basis is low and converging

- Ten-fold increase in shale gas production + CBM portends continued downward pressure
- Expansions/upgrades on TN, Dominion, Tetco, IGTS and Transco
- Marcellus Shale a game changer in the Northeast
 - Displacement of Gulf Coast gas, WCSB
 - Destination flexible LNG cargoes marginalized

Environmental issues affecting STGs

- Regional Haze Rule
 - Plants that contribute to haze in federal protected areas may need to retrofit or fuel switch
- Transport Rule (proposed)
 - Replaces CAIR, imposes more stringent NO_x and SO₂ emission limits
- New Ambient Air Quality Standards for ground-level ozone (postponed)
- Clean Water Act Section 316(b) Phase II
- Oil STGs face retirement or heavy CapEx

Growth prospect: Repowering the old fleet of STGs

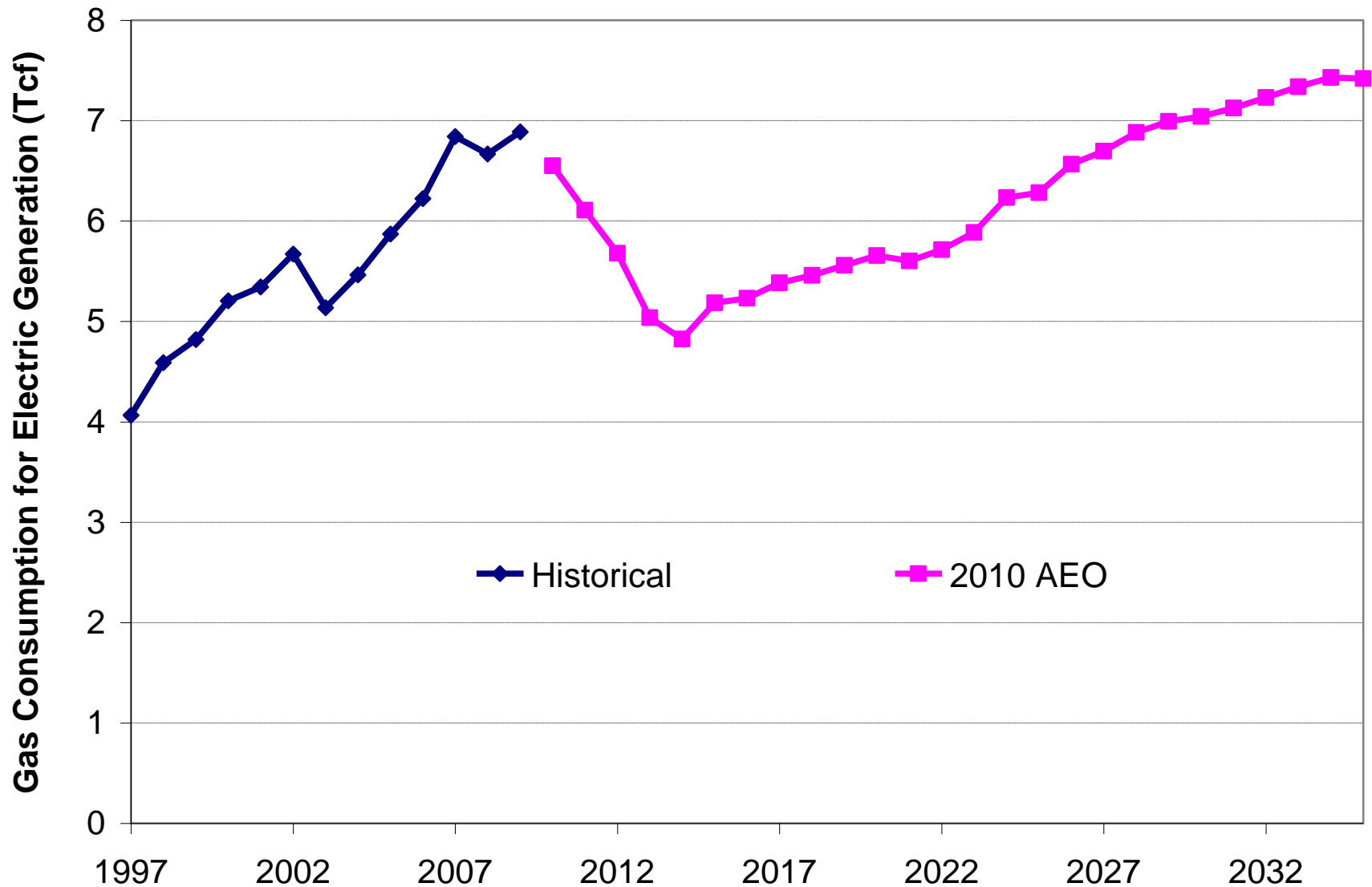
- Broad spectrum of technology
- Potential regulatory support for long term contract support
- Moderate impact re increased gas use
- Potential regulatory support through contract mechanism
 - Price signals through RPM, FCM, Demand Curve not bankable for technology conversion
 - Regulatory / financial incentives to promote real options

MW overhang in the greater Northeast

Market	Delivery Period	Excess (%)
PJM	2013/14	30,854 MW (20.3%)
ISO-NE	2013/14	4,620 MW (14.4%)
NYISO	Oct 2010 (summer)	4,023 MW (11.5%)

- GTs / CCs under Long Term Contracts
- RPS supports renewables under LTCs
- Accelerated penetration rate of DR / EE

Likely reduction in gas use for power generation



Source: EIA