



**Energy and Environmental Analysis, Inc.**  
an ICF International Company



# New York Gas Market Overview

**Based on NYSERDA Case 1 (n0908)  
March 2009**

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# Summary of Assumptions For Case 1

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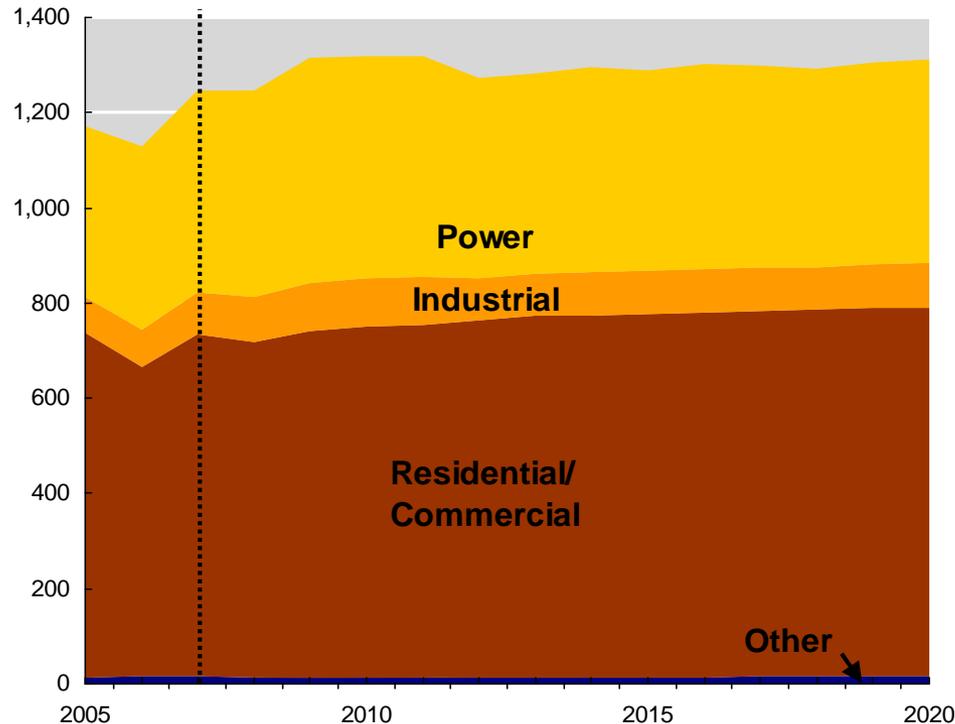
- 3P Case – No GHG regulations at the Federal level (existing regional and state regulations are in effect).
  - The lack of a Federal GHG regulations reduces growth in demand for natural gas in the power sector at the national level.
- Projected U.S. GDP growth is constant at 3% per year.
  - No recession assumed in 2009.
- Oil prices drop from 2008 peak to average \$65/bbl (WTI 2006\$) in 2009.
  - From 2010 through 2020, WTI projection is flat at \$72/bbl (2006\$).

# New York Gas Demand Outlook

- New York State annual gas consumption is expected to grow by 66 Bcf (5 percent) by 2020 to about 1.3 Tcf.
- Gas consumption in the power sector remains relatively flat through 2020.
  - Slow growth in electricity demand combined with increasing renewables generation leads to flat demand for gas-fired power generation.
- The industrial sector is also essentially flat.
- Modest and steady growth in R/C gas consumption, which increases at a rate of 0.6% per year, mostly due to oil to gas unit conversion.

## New York Gas Consumption

(Billion Cubic Feet, Bcf)

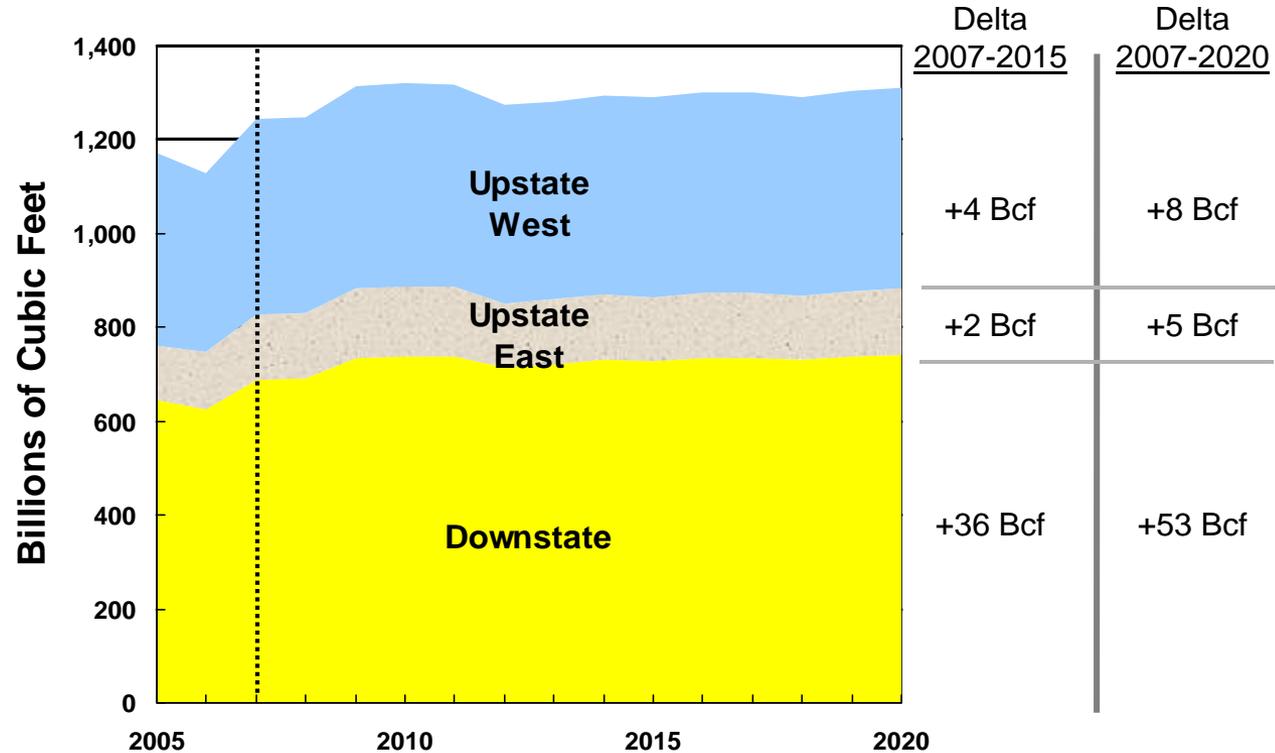


	Delta 2007-2015	Delta 2007-2020
Power	-4 Bcf	+4 Bcf
Industrial	+1 Bcf	+3 Bcf
Residential/ Commercial	+46 Bcf	+57 Bcf
Other	-1 Bcf	+2 Bcf
<b>Totals</b>	<b>+42 Bcf</b>	<b>+66 Bcf</b>

# New York Regional Gas Demand Outlook

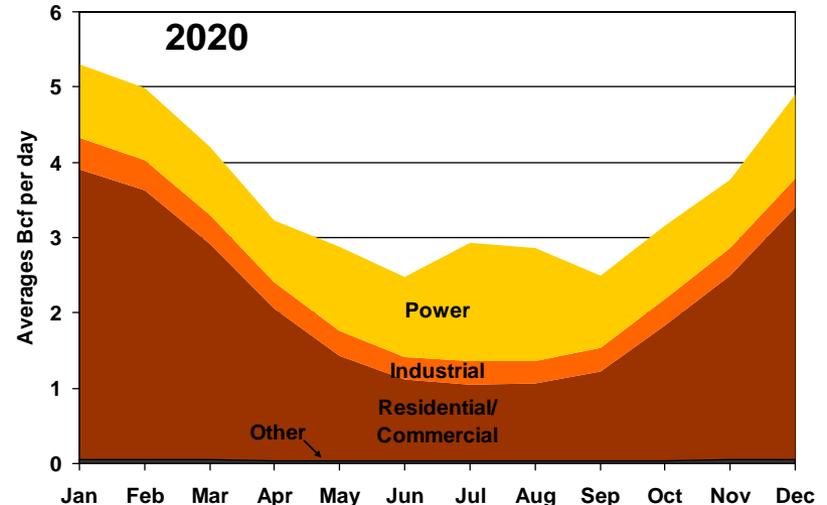
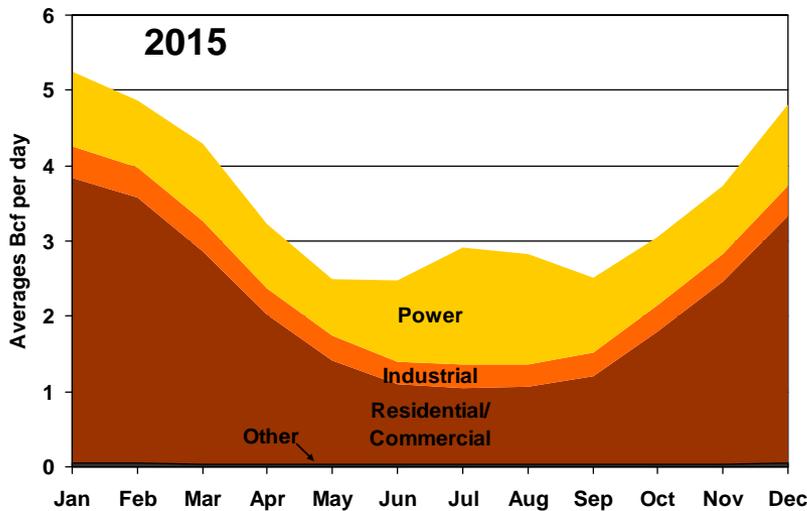
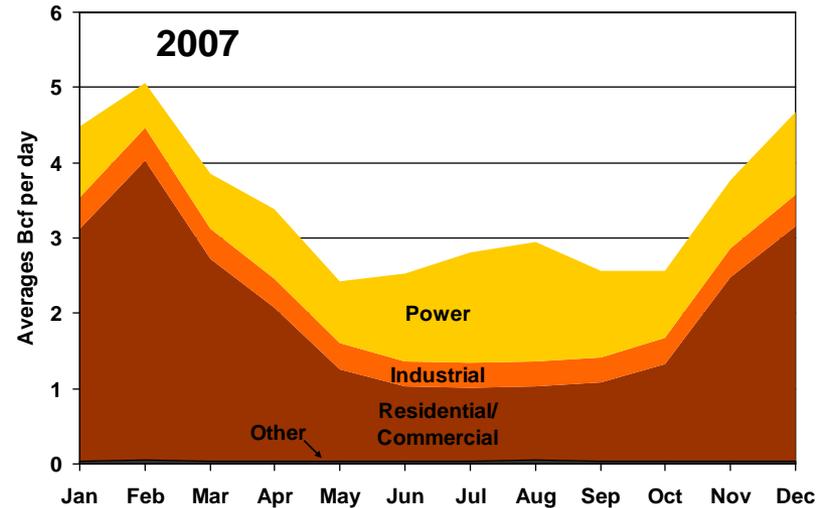


- Through 2020, over 80 percent of the growth in gas consumption for New York State is concentrated in the Downstate area.
- Annual gas consumption in both Upstate East and Upstate West remain relatively flat through 2020.



# New York Seasonal Gas Demand

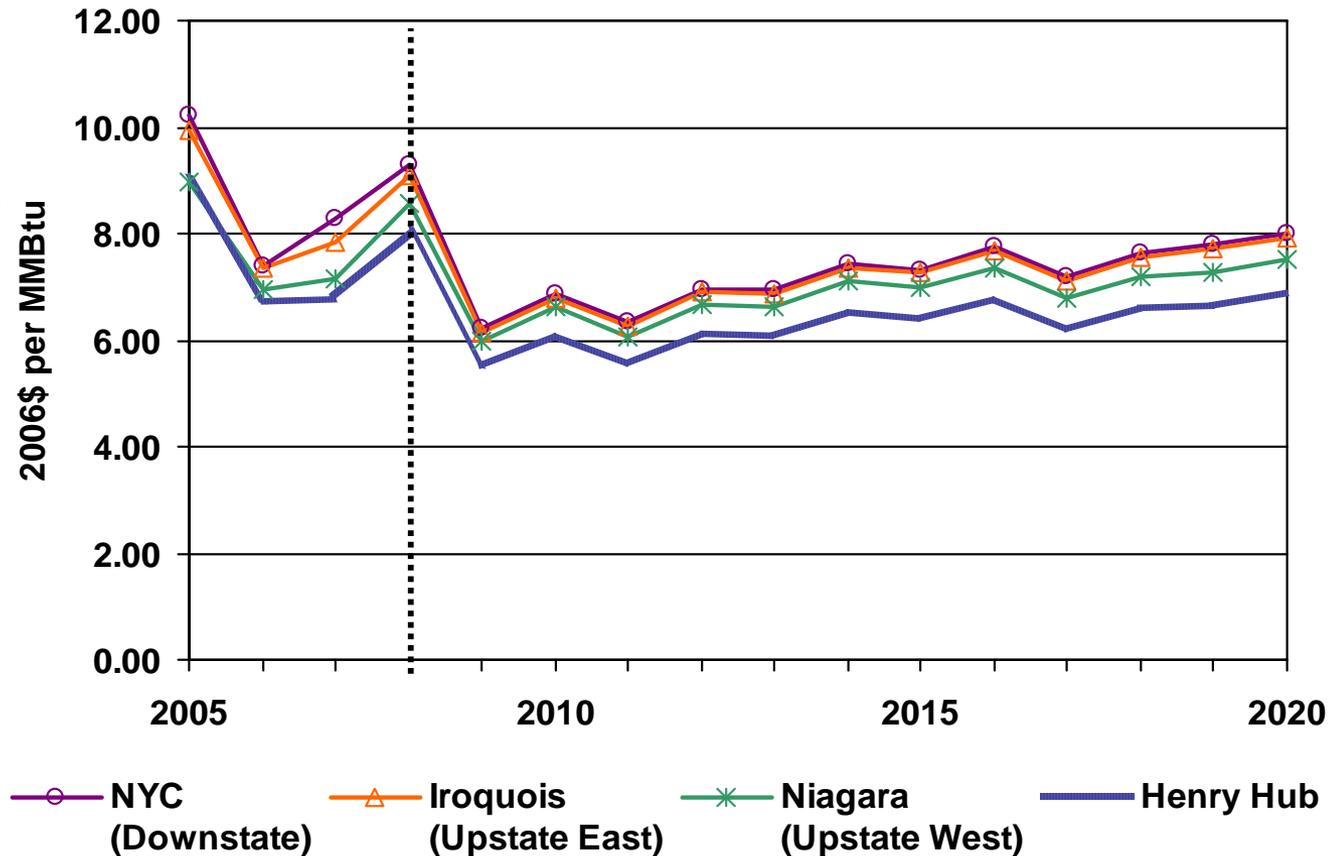
- New York is projected to remain a winter peaking gas market.
- The ratio of peak winter consumption (January) to peak summer consumption (July) stays between 1.6 and 1.8 throughout the forecast.
- Demand in the three peak winter months grows from about 4.7 Bcfd in 2007 to about 5.1 Bcfd in 2020.
- Demand in the two peak summer months stays fairly constant at about 2.9 Bcfd.



# New York Gas Prices (2006\$ per MMBtu)

- All natural gas prices in New York will follow national trends, reflected by the Henry Hub price.
  - Because this case assumes no Federal carbon policy, there is little upward pressure on national gas prices from recent levels.
- New York prices range between \$6 to \$8 per MMBtu from 2009 forward.
- On average, New York State prices trade at a premium to Henry Hub of about \$0.77 per MMBtu (see next slide).
- Prices are very sensitive to weather conditions.
  - This projection assumes normal (30-year average) weather.

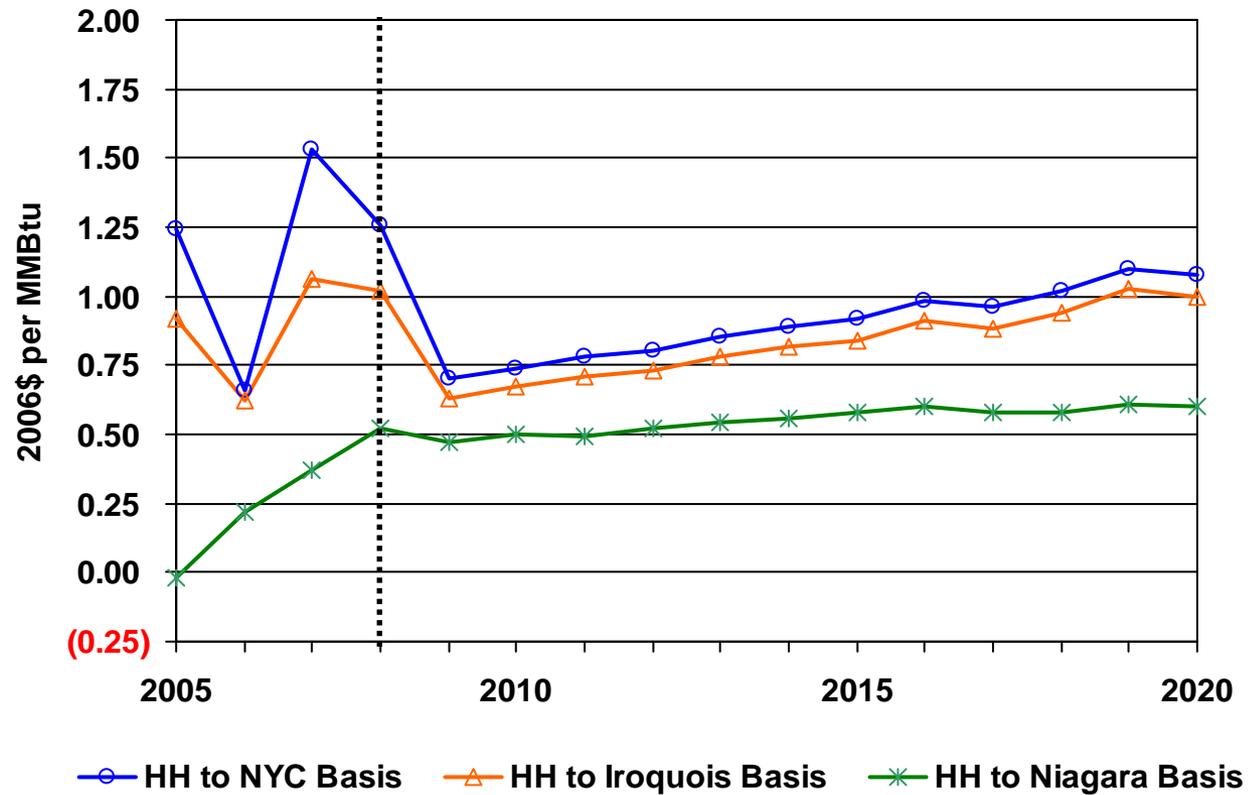
## Average Annual Spot Prices



# New York Basis (2006\$ per MMBtu)

- New York gas prices are projected to remain at a significant premium to Henry Hub prices.
- Basis into New York City, which averaged \$1.14 per MMBtu between 2005 and 2007, will average \$0.90 per MMBtu throughout the projection.
  - Basis projections are based on normal weather. Colder-than-normal winter weather can create significant price volatility and much higher basis.
  - Basis into New York City is also highly dependant on additional pipeline and / or added LNG infrastructure.
- Basis to Niagara, which averaged \$0.19 per MMBtu between 2005 and 2007, will average \$0.55 per MMBtu throughout the projection.

## Average Annual Henry Hub to New York Basis



# New York Infrastructure Additions



- NYSERDA Case 1 assumes that four pipeline projects are completed within the State of New York through 2009.
  - Pipeline Capacity Added Bringing Gas to Eastern New York:
    - Millennium Pipeline & Empire Connector – Niagara to Eastern New York
      - 534 MMcfd 2008
  - Pipeline Capacity Added Bringing Supply Into New York City and Long Island:
    - Transco Leidy to Long Island
      - 100 MMcfd 2008
    - Ramapo Expansion – Eastern New York to New York City
      - 325 MMcfd 2008
    - Iroquois 08/09 Expansion – Connecticut to Long Island
      - 200 MMcfd 2009
- NYSERDA Case 1 assumes 6 Bcfd of Storage Capacity Added in 2009.
  - 5.5 Bcf Thomas Corners – Western New York 2009
- Besides these planned projects, there are no other infrastructure expansions assumed within New York State.

# Other Northeast Regional Infrastructure Additions Through 2020

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## ➤ Pipeline Capacity Expansions

### – New England

- Martimes & Northeast Phase 4 – Eastern Canada Offshore to New England
  - 418 MMcfd 2008

### – Pennsylvania and New Jersey

- Texas Eastern TIME II – Lebanon to Leidy
  - 150 MMcfd 2008

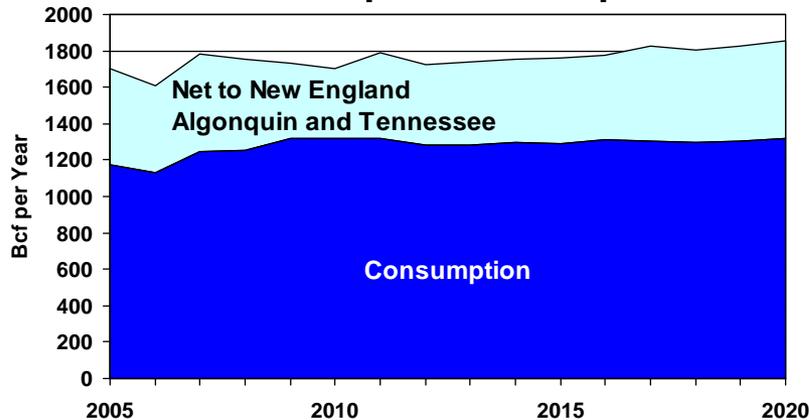
## ➤ Storage Capacity Expansions

### – Pennsylvania

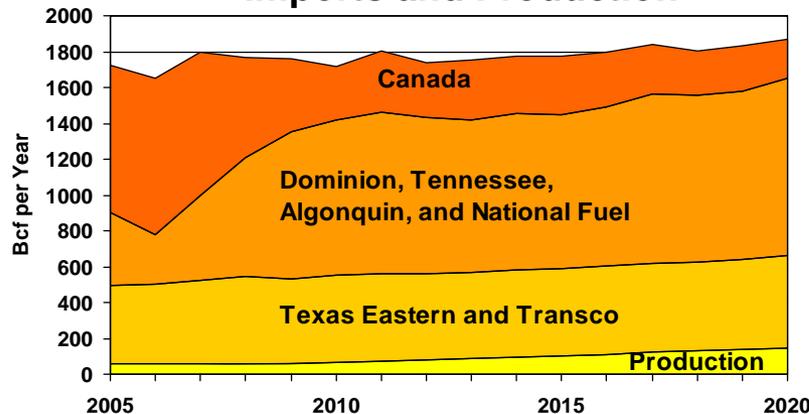
- 12 Bcf - Steckman Ridge – Spectra 2009
- 11.2 Bcf - Storage Factory – Dominion 2014

# New York Gas Balance

## Consumption and Exports



## Imports and Production

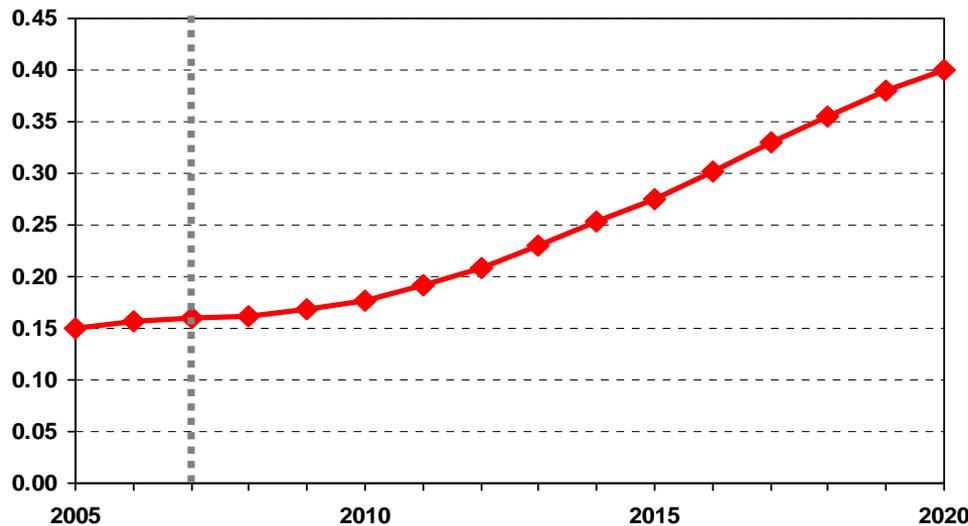


- Annual net exports to New England, which have averaged about 500 Bcf/y, decline through 2010 but then gradually rebound back to about 540 Bcf/y by 2020.
- Total annual pipeline imports into New York will remain relatively stable, but the sources of gas change over time .
  - Canadian imports decrease by about 590 Bcf/y, as production in Western Canada decreases and Canadian consumption increases.
  - Imports are projected to increase from the south and the west, as production from shales near the Gulf Coast and Rocky Mountain production replaces declining imports from Canada.
- Production in Western New York is projected to grow to about 150 Bcf/y per year by 2020, accounting for about 8 percent of New York’s natural gas supply.

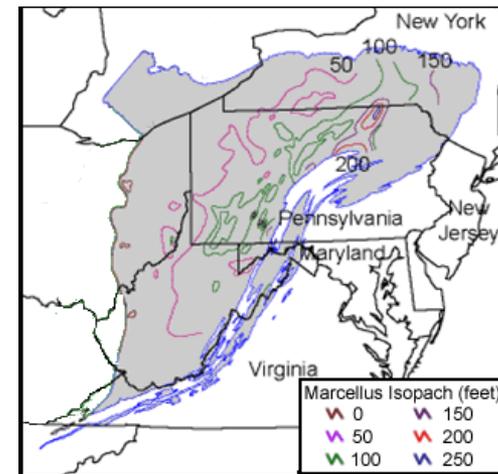
# New York Gas Production

- Historically, natural gas production in New York has been a relatively small part of the State's total gas supply.
  - In 2007, production accounted for about 3% of New York's supply.
- Development of the Marcellus Shale, which extends into western and central New York, is projected to increase production significantly over the next 10 years.
  - By 2020, production is expected to account for almost 8% of the State's total gas supply.

**New York State Gas Production, in Bcf per Day**



**Marcellus Shale**



# NYSERDA Case 1 Key Findings

- New York annual gas consumption is anticipated to grow by 66 Bcf (5 percent) by 2020, with nearly all of the growth coming from the Residential and Commercial sectors.
  - Slow growth in electricity demand combined with increasing renewables generation leads to flat demand for gas-fired power generation.
- Over 80 percent of the State's total growth is projected to be downstate in the New York City / Long Island area.
- New York will remain a significant winter peaking market.
- New York natural gas prices average between \$6 and \$8 per MMBtu.
  - However, weather alone can significantly swing prices, especially in downstate markets.
- Basis to New York from Henry Hub is projected to average around \$0.77 per MMBtu under normal weather conditions.
- There are four planned pipeline projects with a total capacity of 1.1 Bcfd for the State.
  - Over 600 MMcfd of additional capacity directed towards downstate New York.
- Supply sources shift as declining imports from Canada are replaced with new supplies from the south and west, as production increases in the shales near the Gulf Coast and in the Rocky Mountains.
  - In-state production is also up due to development of the Marcellus Shale.



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