

The Fight for our Future

The Debate Over the Need for Natural Gas Pipelines and How it will Shape New England's Grid

Massachusetts Rivers Alliance Annual Meeting, December 4, 2014
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This Didn't Happen Overnight

Meeting New England's
Future Natural Gas Demands:
Nine Scenarios and Their Impacts

A Report to the
New England Governors

By
The Power Planning Committee
of
The New England Governors' Conference, Inc.

March 1, 2005

- In the late 1990s and early 2000s, 10,000 MW of new NG was added (1)
- Concerns over coincident peak with heating and electric spurred study
- “Expanded investments in gas energy efficiency programs may yield even greater reliability enhancements and even lower overall costs than most other scenarios” (vii)

Trend Has Continued as Economics and Efficiency Increased Retirements

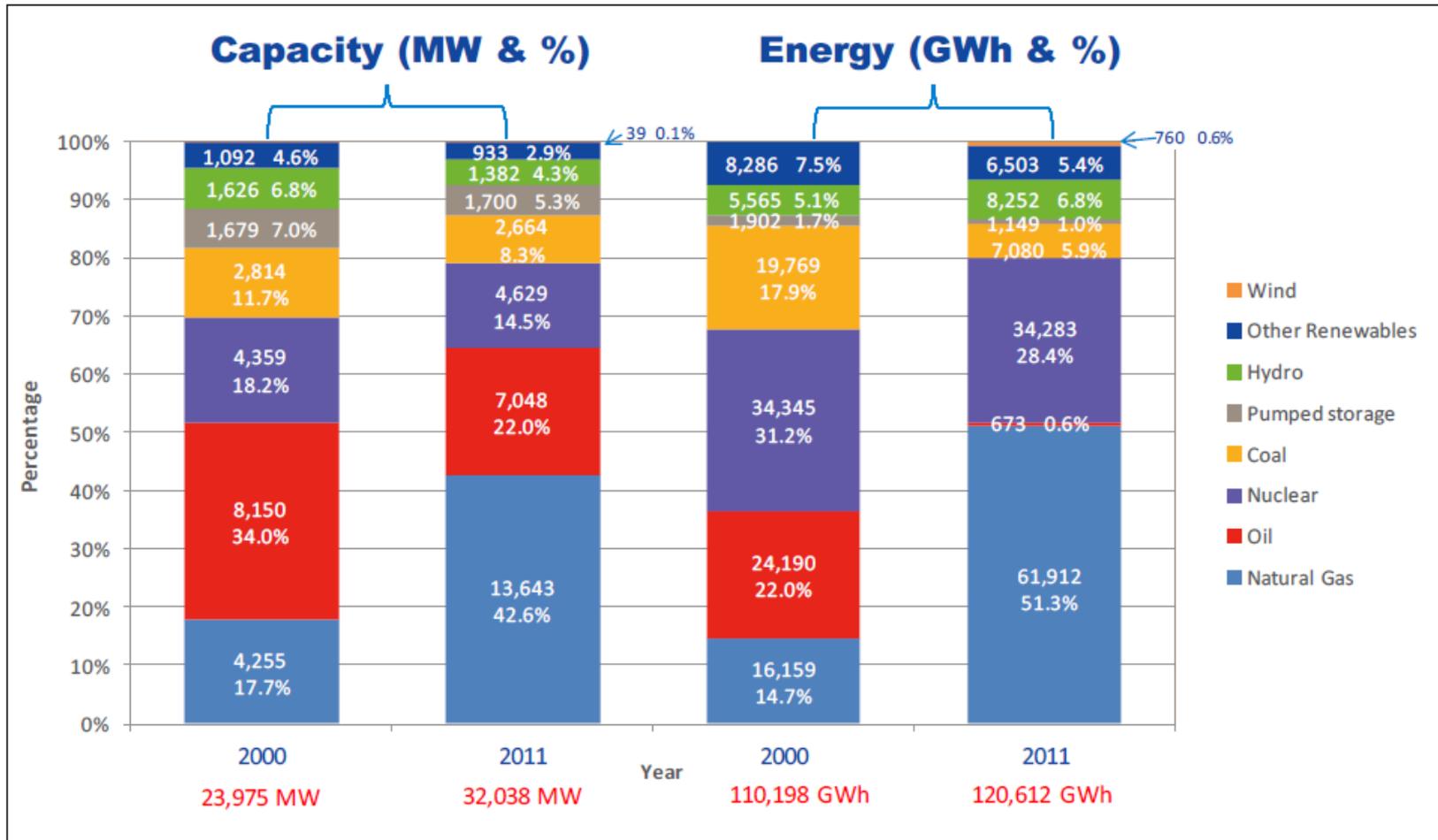
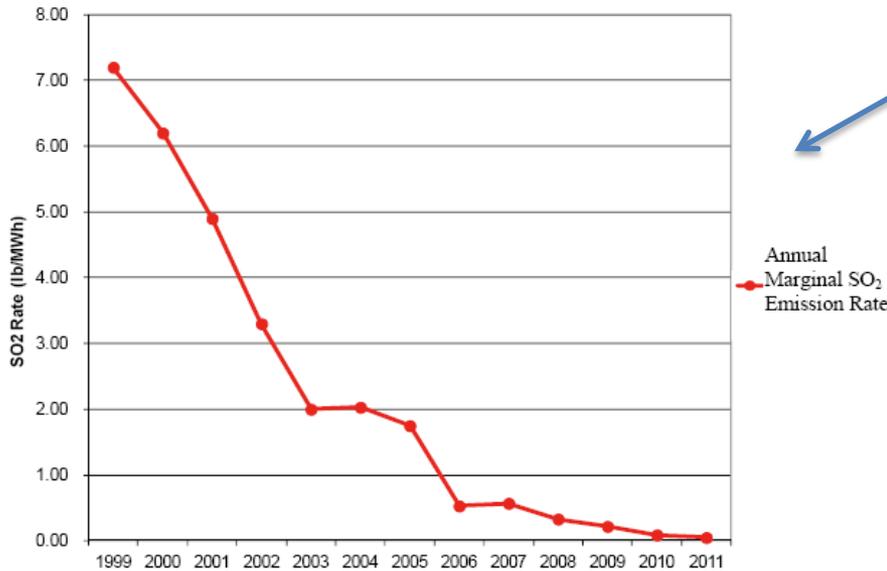


Figure 7-4: New England's generating capacity and electric energy by fuel type, 2000 and 2011.

Yes, The Rise of Gas Has Had Benefits

Figure 5.3: Historically Calculated New England SO₂ Marginal Emission Rates

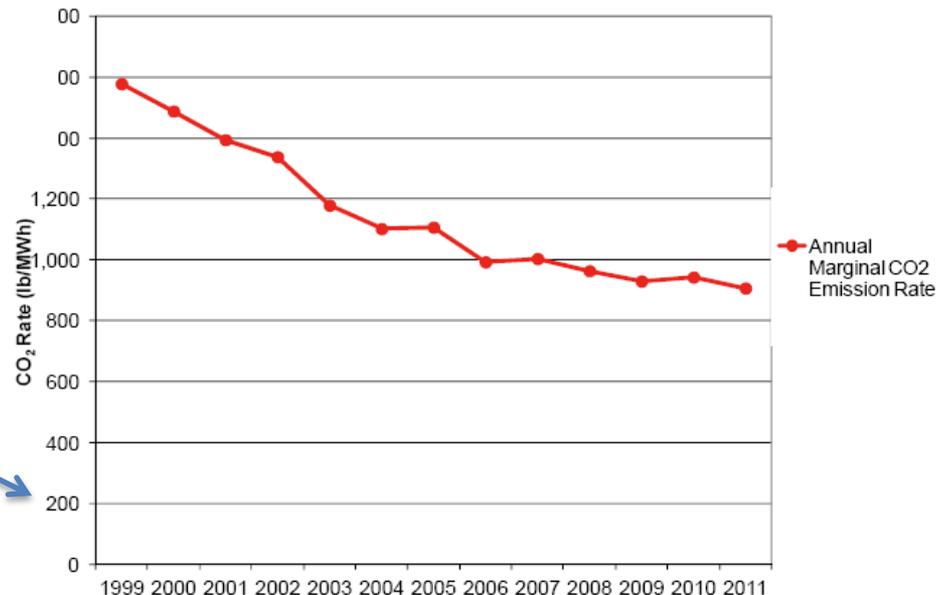


In New England, and increasingly elsewhere, emissions threatening the Public Health, like SO₂, have been slashed very close to zero

... But CO₂ has been reduced on a far more gradual slope to the level of an efficient gas plant. That means more gas coming onto the system won't reduce emissions ...

Especially if you factor in fugitive emissions

Figure 5.4: Historically Calculated New England CO₂ Marginal Emission Rates



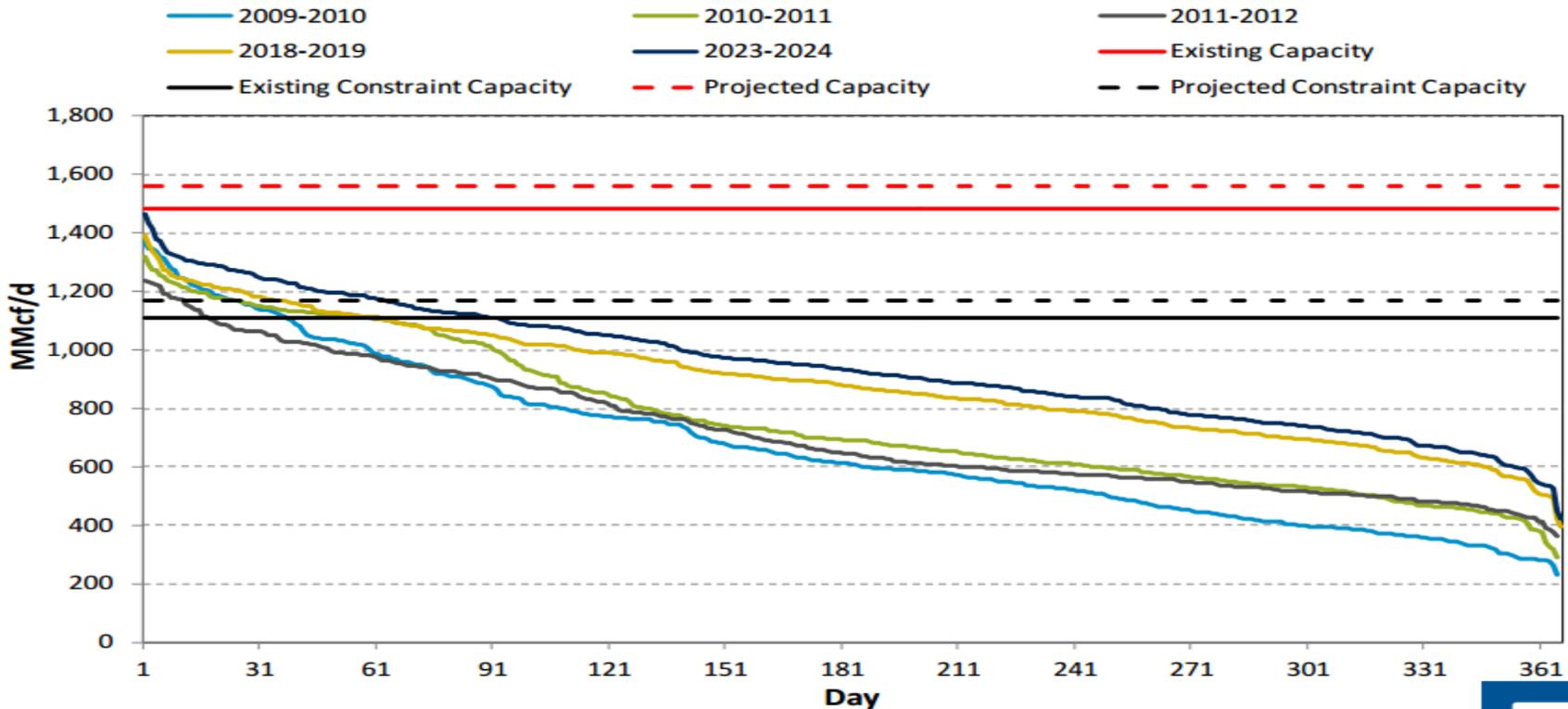
But, unconstrained NG Increase isn't Compatible with a Livable Future

- According to World Resources Institute global emissions of GHGs must peak in 2020 followed by steep reductions by 2050 to limit warming to 2° Celsius.
- Most recent IPCC report says that $\frac{3}{4}$ of the recoverable fossil fuels must remain in the ground.
- Yet, current plans for new pipelines are based on cont'd cheap gas prices and abundant flow.

Is there a Natural Gas Crisis? No.

Eastern Massachusetts Load Duration Curve

Historical and Projected Load Duration Curves
Eastern Massachusetts



Source: Black & Veatch Analysis, Electronic Pipeline Bulletin Board



Important Takeaways from Black & Veatch Study

- “The consumer consequences of New England’s increasing dependence on natural gas as an electric fuel source are difficult to quantify precisely and predict accurately.” Internal NESCOE Memo
- “In the Low Demand Scenario, infrastructure solutions are **not needed or justified**. The Low Demand Scenario is predicated largely on substantial, ongoing gains in natural gas and energy efficiency, and other demand-side management programs, distributed resources and RPS, which result in retreat from natural gas across all sectors.” Phase III, 9
- Black & Veatch only examined 3 long-term solutions: Cross-Regional Pipeline, “Economic Canadian Imports” and “Firm contract Canadian Imports”

Getting Gas Right Means Identifying the Real Problems and Creating Tailored Solutions

Perception

- Pipes are fully utilized
- Capacity release/renomination opportunities are sufficient
- Basis problem = need for more capacity
- Needle peaks cannot be resolved without new pipelines
- New greenfield pipes will resolve the basis problems
- Pipelines were fully maxed out throughout the winter

Reality

- Subscribed but not fully utilized
- More opportunities for intra-day and short term releases
- NO, need greater intraday liquidity/transparency
- On site storage (e.g., LNG), and market based services provide solutions
- New pipes don't help unless the gas gets to the generators
- Even in 2013/2014 only 10 days were pipes at 95% utilization and only 42 days above 90%

Already We're Seeing Results

- Avg October 2014 NG prices and RT Hub LMPs were down 28.5% and 14.9%, respectively from October 2013
- October 2014 NG prices were 16.8% lower than September 2014 NG prices
- Massachusetts is conducting a low-demand scenario analysis
- FERC has accepted comments on better coordinating electric and gas markets

Consequences of Overbuilding NG Pipelines

- If subsidized by ratepayers, skews price formation, makes gas seem cheaper than alternatives
- More pipelines, more NG power plants
- Crowds new renewable generation out of the market
- More of the old, centralized grid with all its weaknesses

Battle is Over What Our Grid Will Look Like in 2050

SMART GRID

A vision for the future — a network of integrated microgrids that can monitor and heal itself.

