

Northeast Energy Infrastructure Assessment

**Division of Market Development
Federal Energy Regulatory Commission**

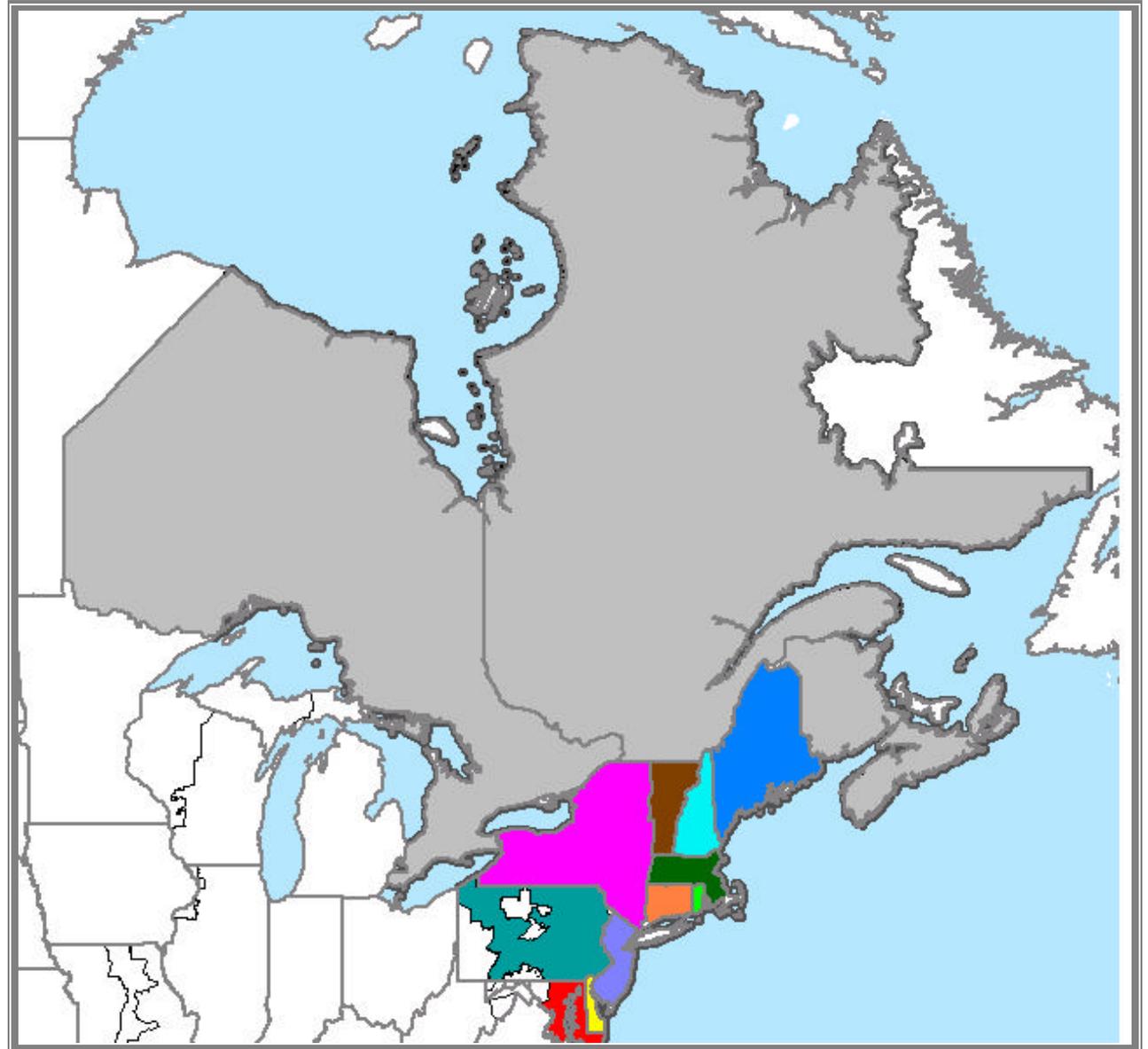
January 30, 2002

Docket No. AD-02-6-000

Purpose

- **We provide an overview of the current electric, gas, and oil infrastructure in the Northeastern U.S.**
- **These data will allow us to examine the adequacy of the current electric, gas, and oil infrastructures for meeting energy demand in the Northeastern U.S.**

Northeastern Region Including Canada



Electric Infrastructure

Trends in the NE

From 1995 to 2000 -

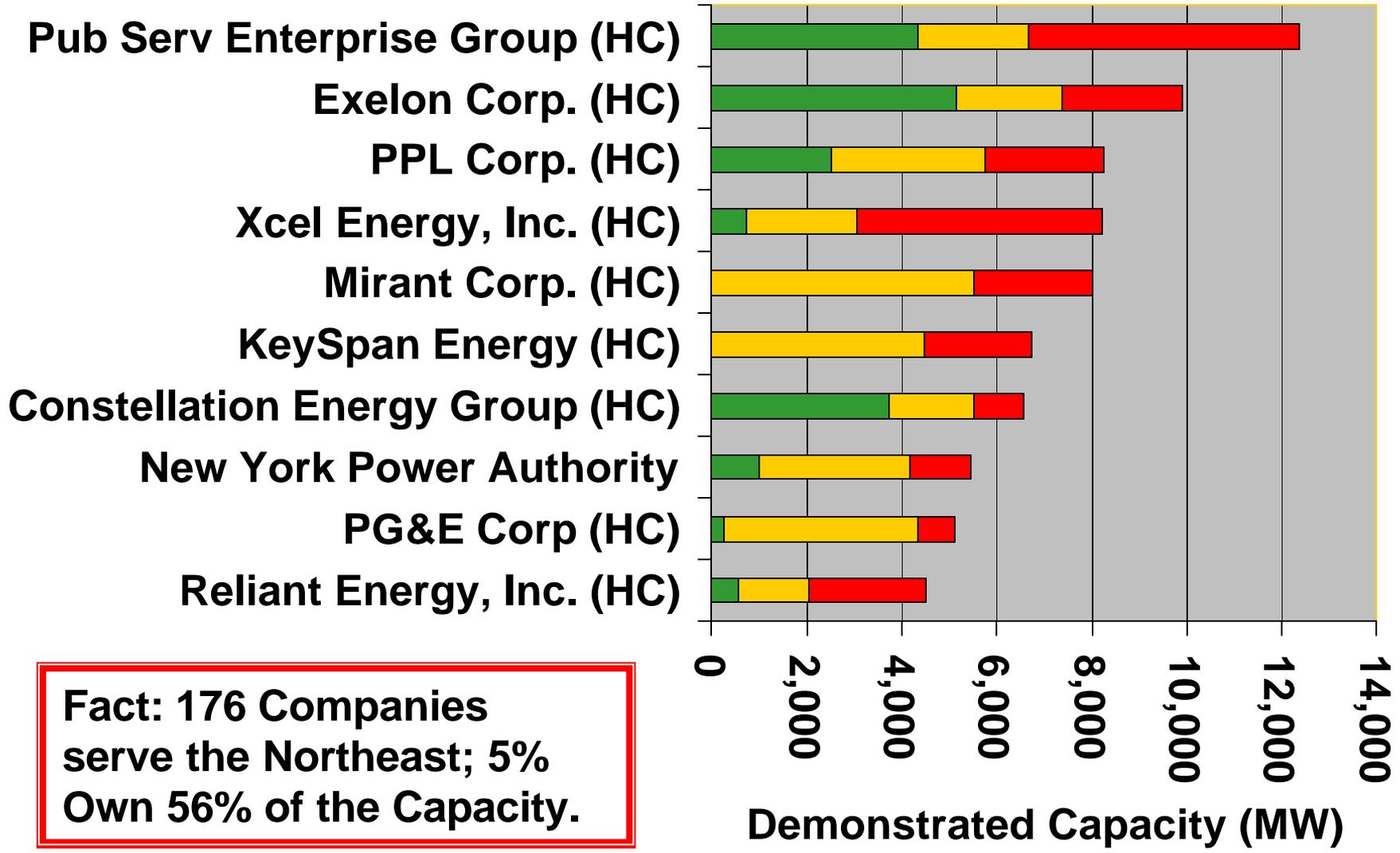
- population increased by 4.3% to 60.6 million.
- electricity consumption increased by 8.1% to 547.5 TWh.
- generation capacity increased 15% (to 127,000 MW).

Projects Proposed for completion by 2004 -

- 34,570 MW of new generation capacity.
- 6,105 MW (1,894 miles) of new HVDC transmission capacity.

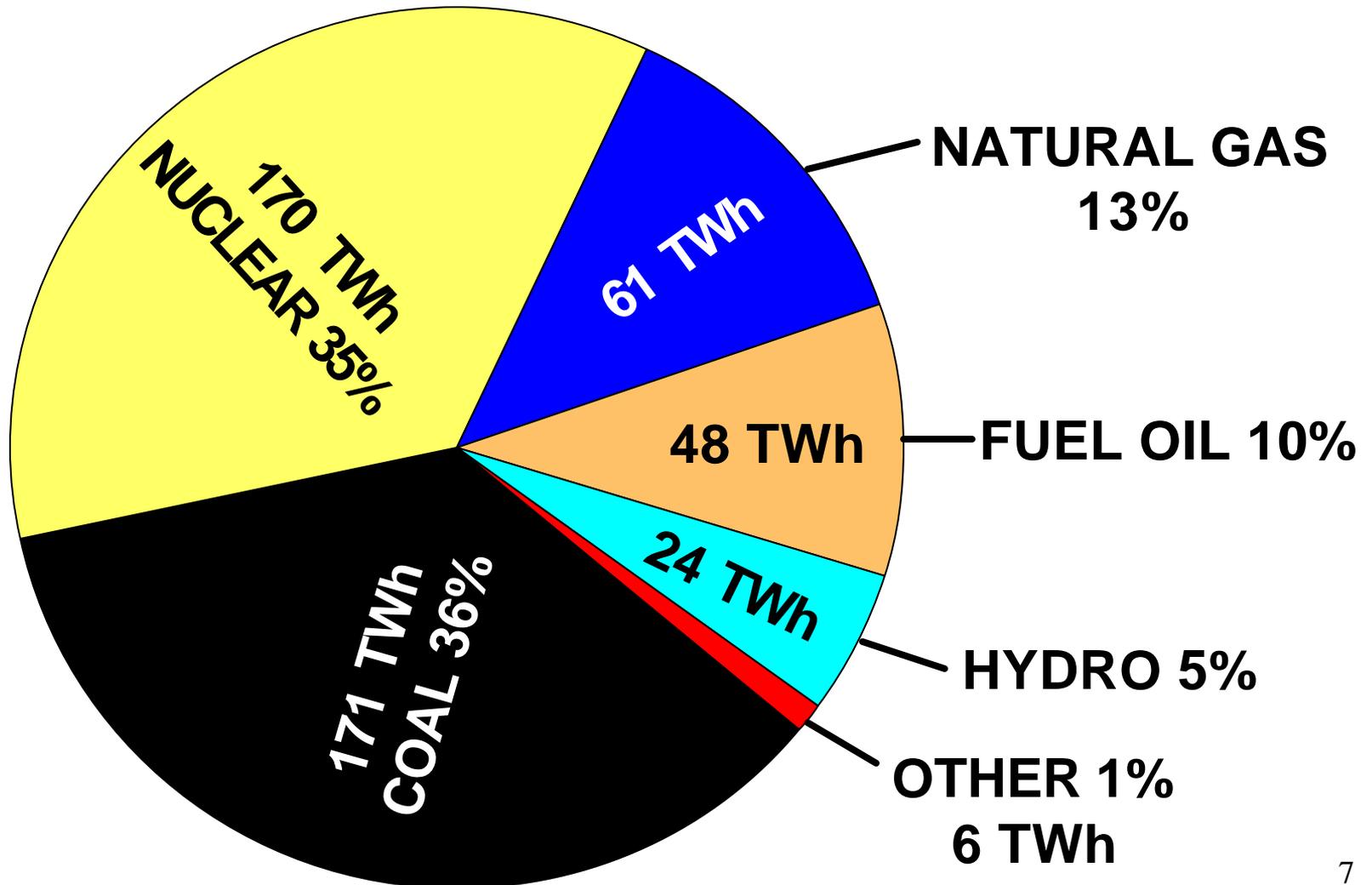
Top Ten Northeastern Companies Based on Demonstrated Capacity (As of 9/15/2001, U.S. Only)

■ Base Load ■ Intermediate ■ Peak



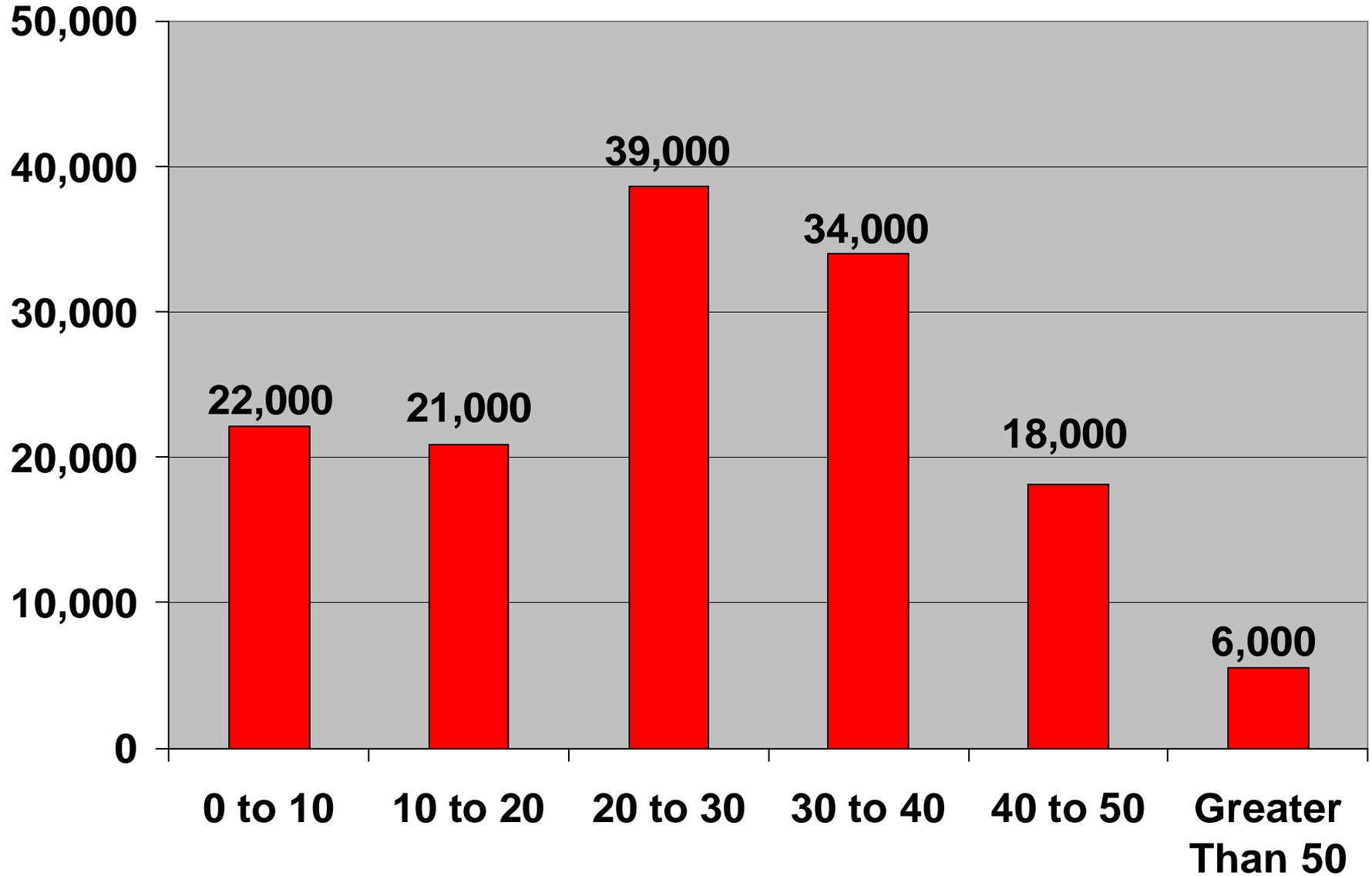
Fact: 176 Companies serve the Northeast; 5% Own 56% of the Capacity.

Northeast U.S. Generation by Fuel Year 2000



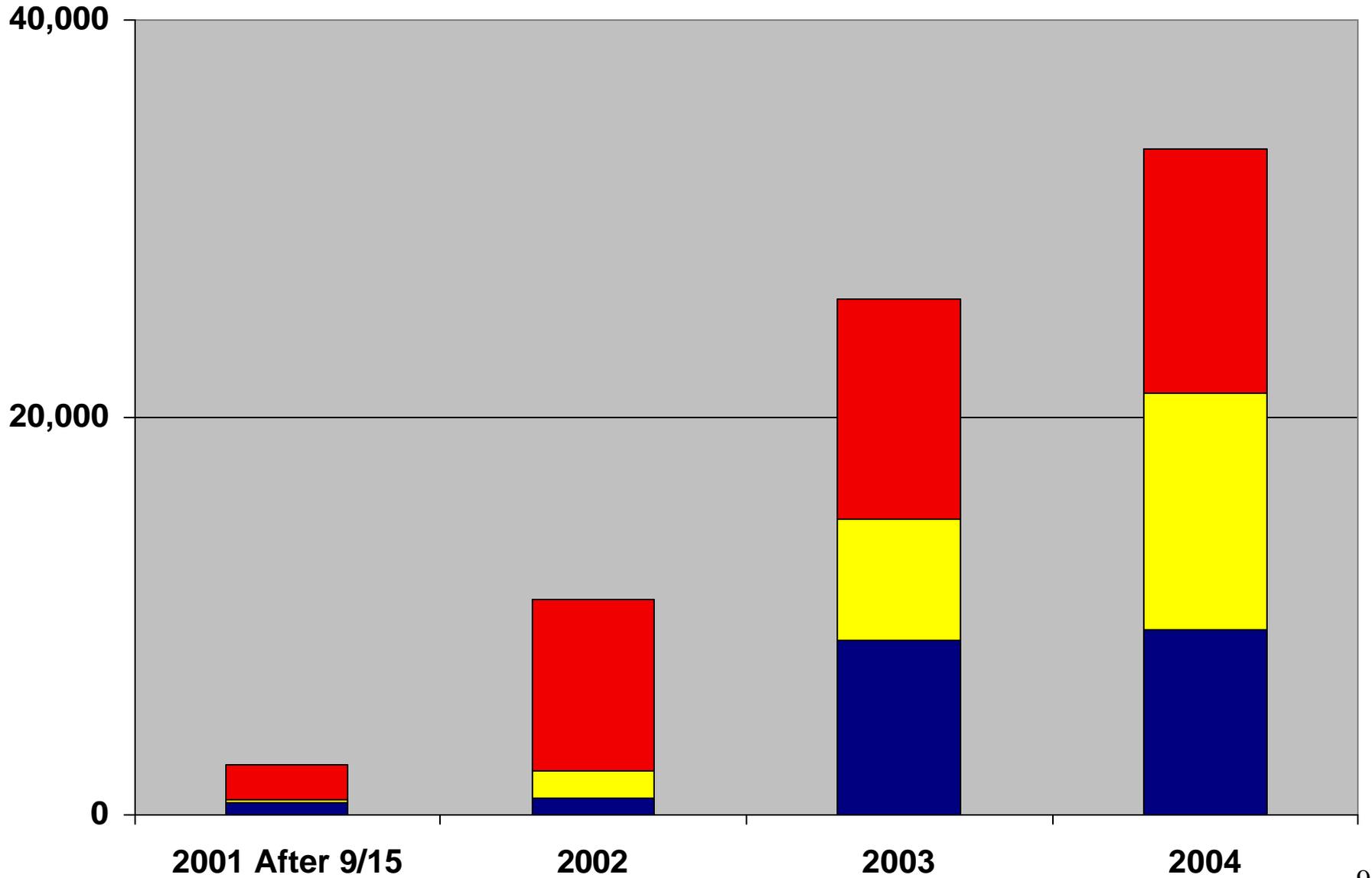
Average Age of Northeastern Generating Units

All Fuel Types

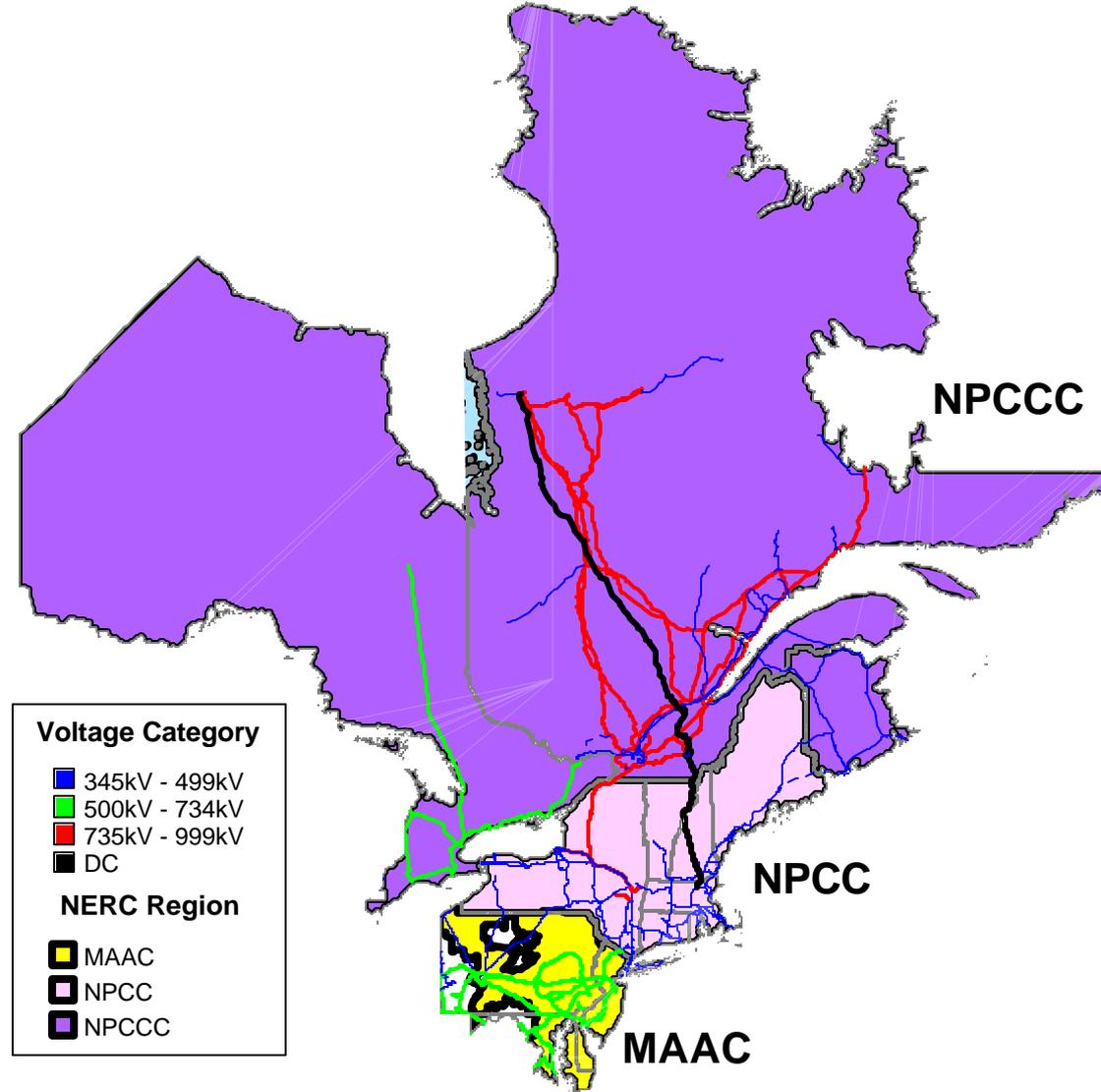


Northeast U.S. – New Capacity (Cumulative)

9/15/2001 – 2004 by Status



345 kV and above Transmission Lines in Northeast



Proposed NE Merchant Transmission Projects

Atlantic Energy Partners, L.L.C., Neptune Regional Transmission System (“Neptune RTS”) Project

- Linking Nova Scotia, New Brunswick and Maine generation to Boston, MA and New York City, NY - 4800 MW DC

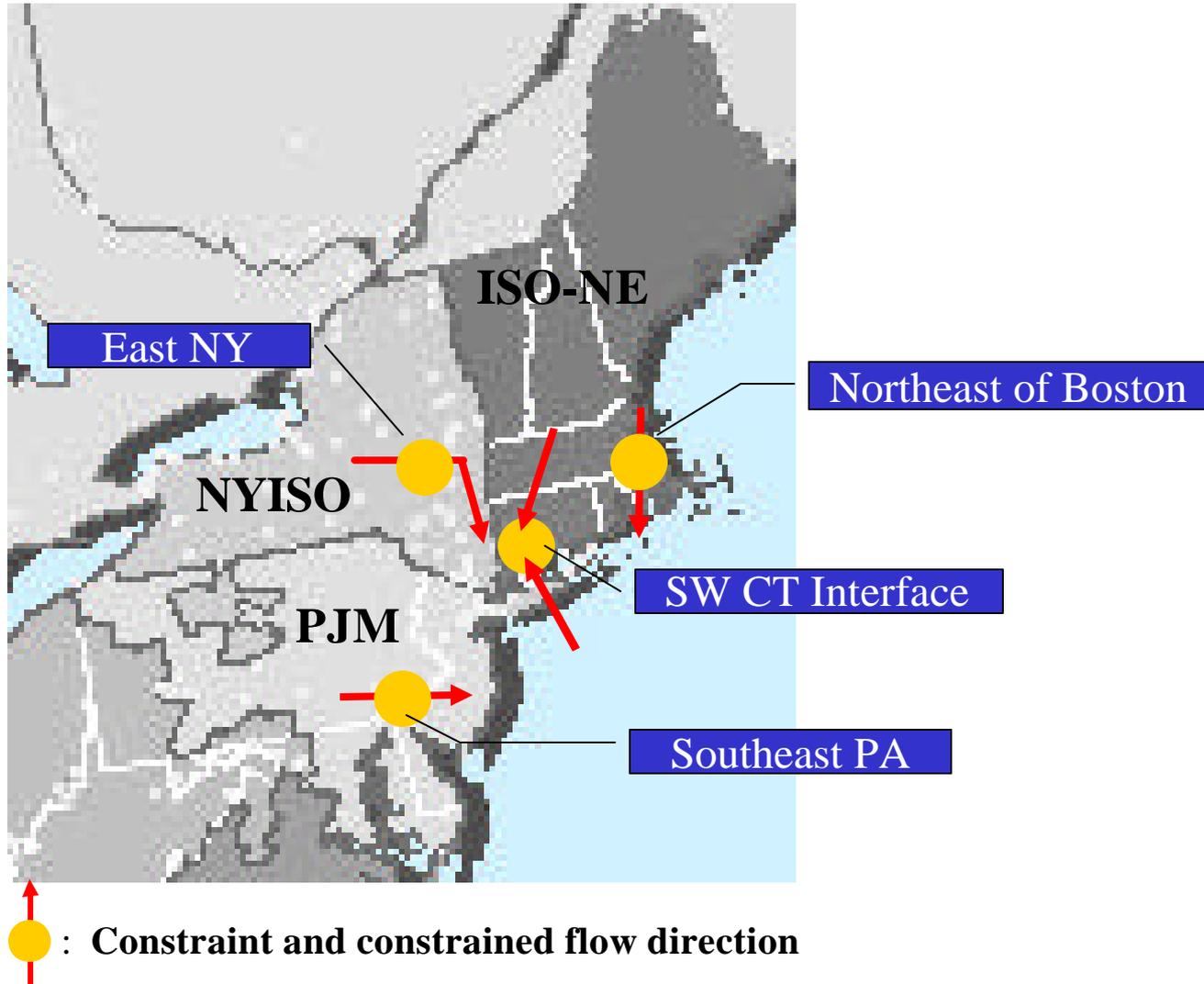
TransEnergie & Cross - Sound Cable Co. Project

- Linking New Haven, CT generation to Shoreham, NY - 330 MW DC

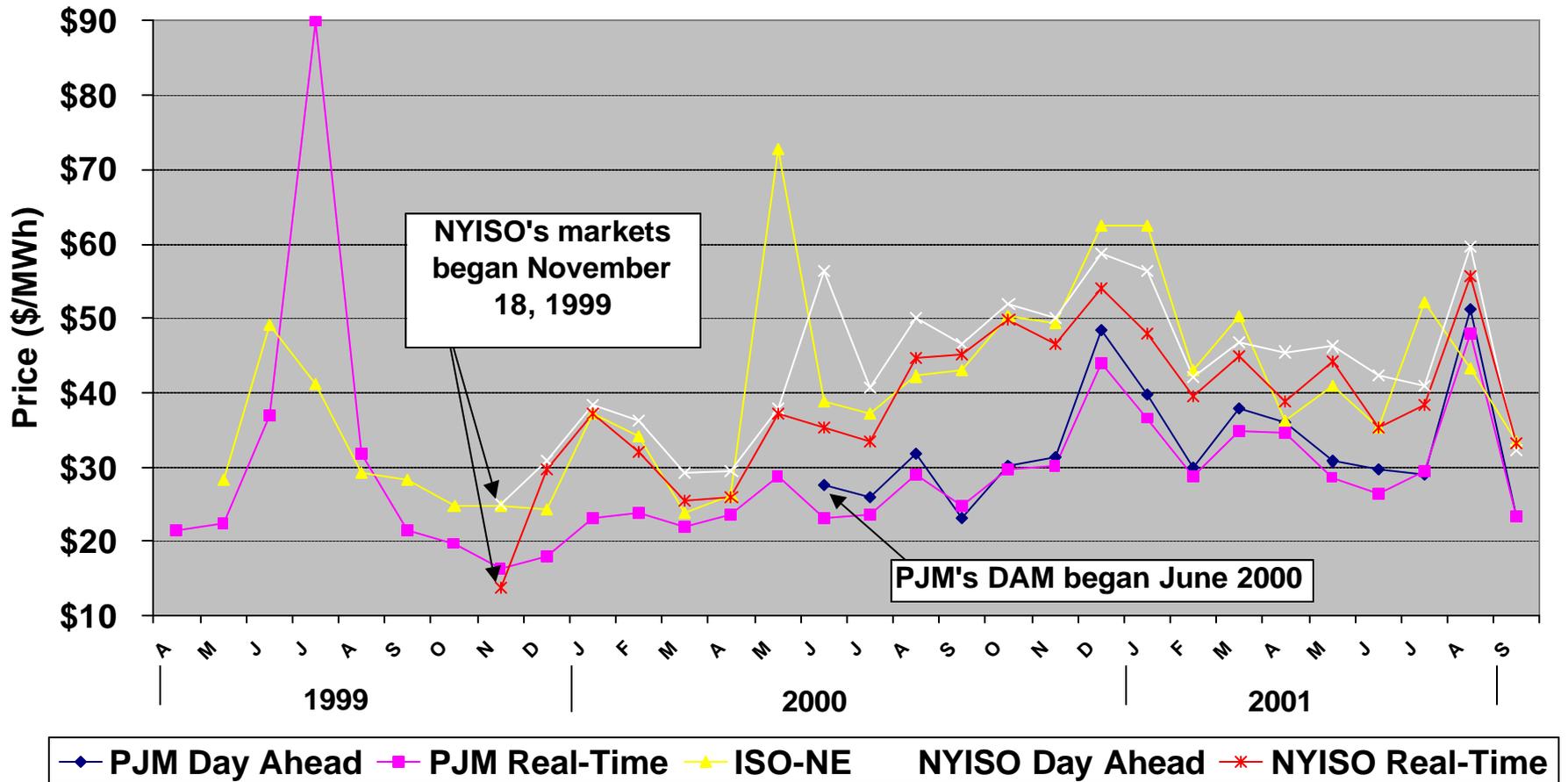
Hydro One, Inc. & TransEnergie Lake Erie - Western PJM Project

- Linking Simcoe, Ontario generation to Ashtabula, OH or GPU Energy - 975 MW DC

Major Transmission Constraints in the Northeast



Northeast Markets & Prices



Source: Northeast ISO websites

Gas Infrastructure

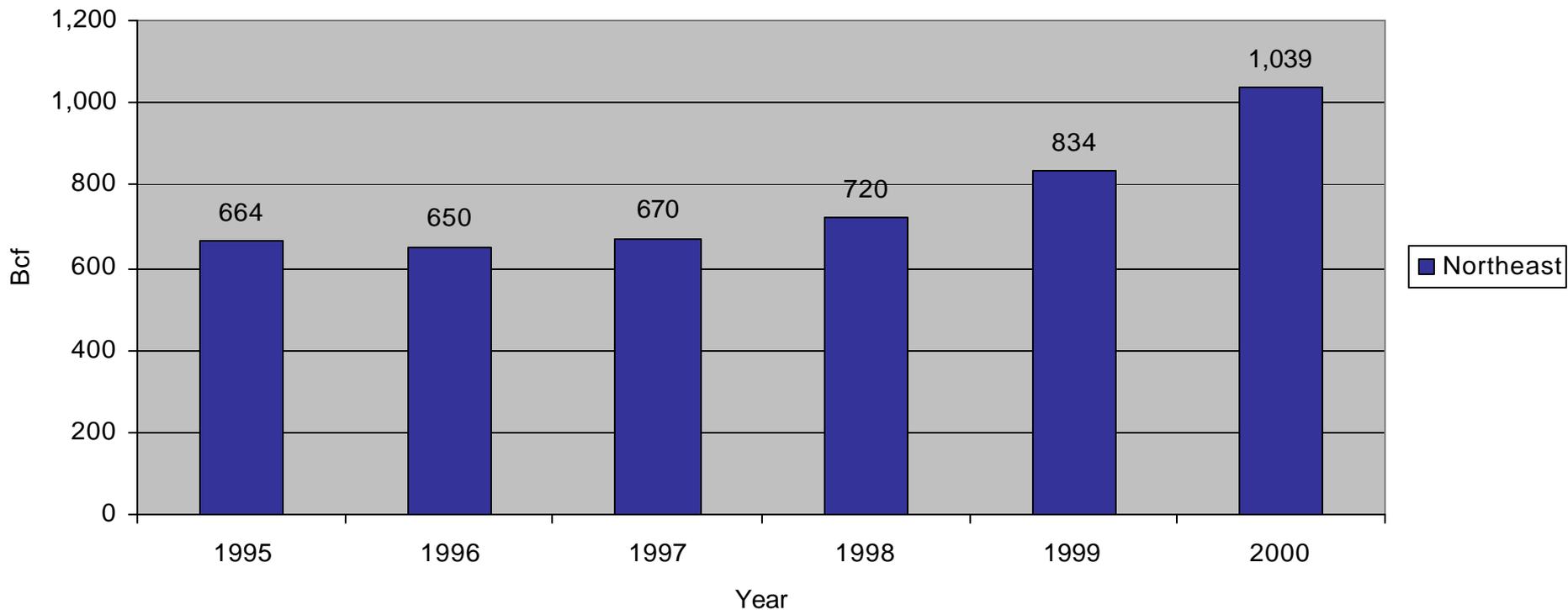
Existing Pipeline Capacity

- Ten major US & Canadian pipelines serve the NE gas market.
- About 75% of the 3,301 MMcf of pipeline capacity growth in the NE between 1990 and 2000 was for increased imports from Canada.

Impacts on Infrastructure

- Northeast gas consumption increased 35% from 2,539 Bcf in 1990 to 3,437 Bcf in 2000.
- Population increased by 6% between 1990 and 2000, from 56.86 million to 60.25 million.
- Natural gas is the fuel of choice for new electric power plants.

Canadian Natural Gas Import to the Northeast, 1995-2000

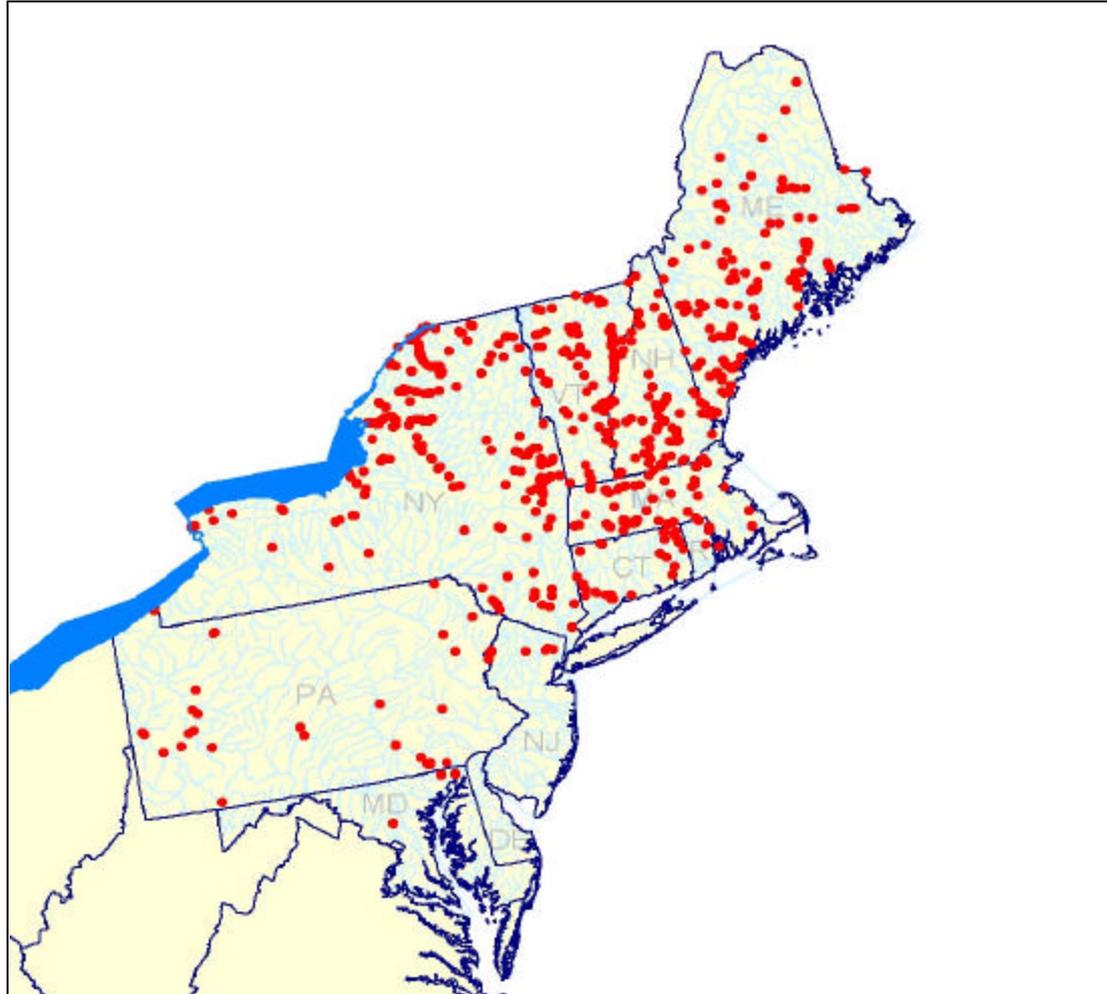


Pipeline Capacity Additions in the Northeast

- Nineteen major projects for 6,580 MMcf/d of capacity have been certificated, are pending before the Commission or are on the horizon.
- Nearly 42% of this capacity is for new Canadian load.

Other Energy Sources

Northeast Hydroelectric Sites



Northeast Hydroelectric

- There are 529 FERC-regulated hydroelectric projects in the Northeast.
- Total capacity of all these projects is 14,343 MW – 22% of total FERC-regulated capacity.
- Preliminary permits have been issued to determine the feasibility of installing 232 MW at 35 Northeast sites.

Northeast Oil Consumption

- Electric utilities are the largest users of residual fuel oil (Nos. 5 & 6) in the Northeast.
- Sales of residual fuel oil will decline as natural gas displaces it in electric generation plants .
- No. 2 fuel oil is used largely by residential and commercial customers.

Refinery Capacity and Oil & Products Deliverability in the Northeast

- Ten refineries in DE, NJ and PA had operating capacity of 1,469,000 bbls/calendar day on January 1, 2001.
- Two crude oil pipelines located in ME, NH and VT delivered 180 million bbls of crude oil in 2000.
- Five pipelines located in CT, MA, NJ, NY, PA and RI delivered 1.5 billion bbls of refined products and 475 million bbls of crude oil in 2000.

Coal

- In the northeast, 36% of the electricity consumed is generated from coal, most of it in PJM.
- In 2001, spot prices increased in all producing regions, primarily due to increased demand.