

Views on Gas-Based Power Generation

Committee on ERE
NARUC Summer Meeting
July 13, 2004



Joel Bluestein
Energy and Environmental Analysis, Inc.
www.eea-inc.com

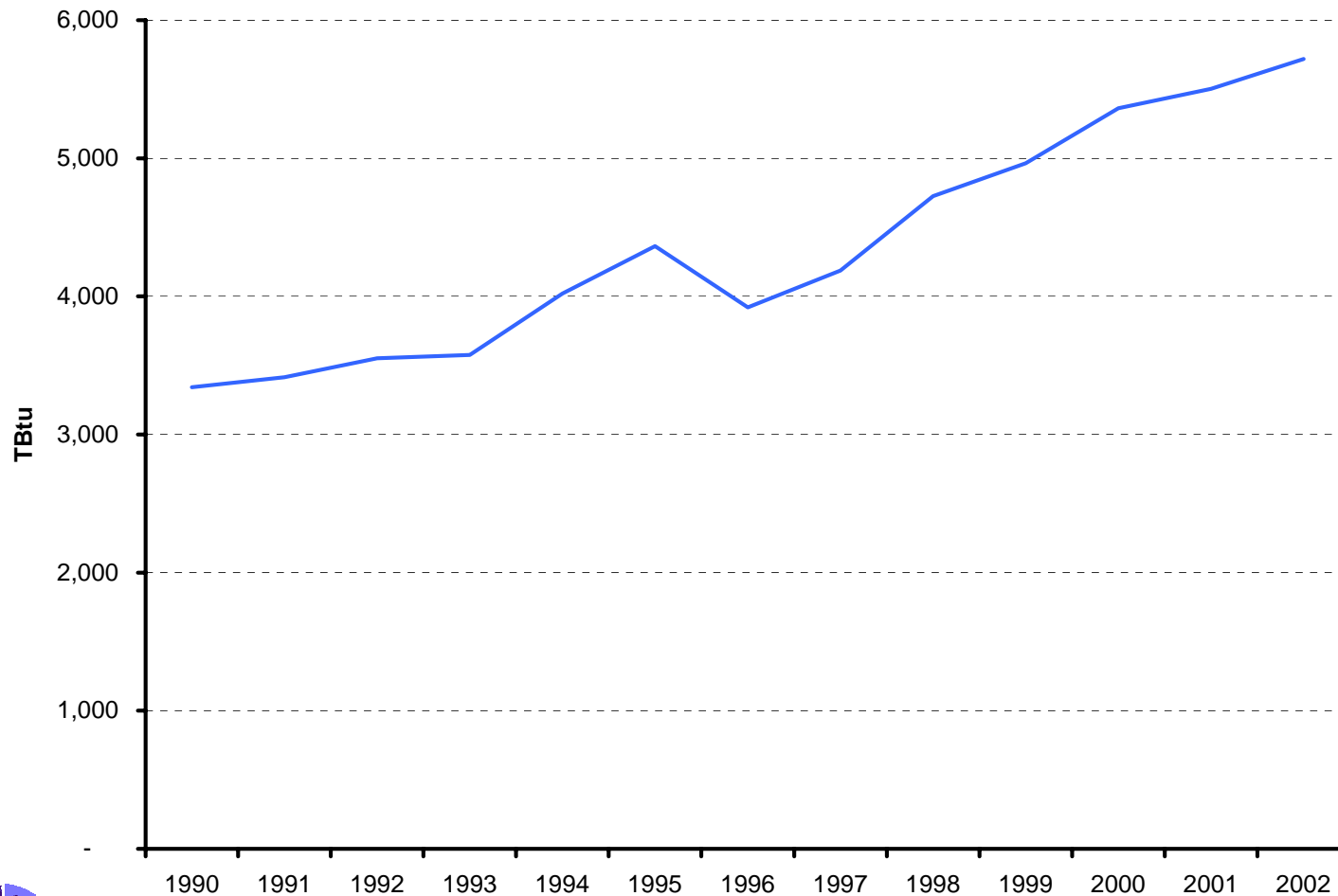
Overview

- Recent growth of gas generation
- Why did it happen?
- What does it mean?
- Where is it headed?



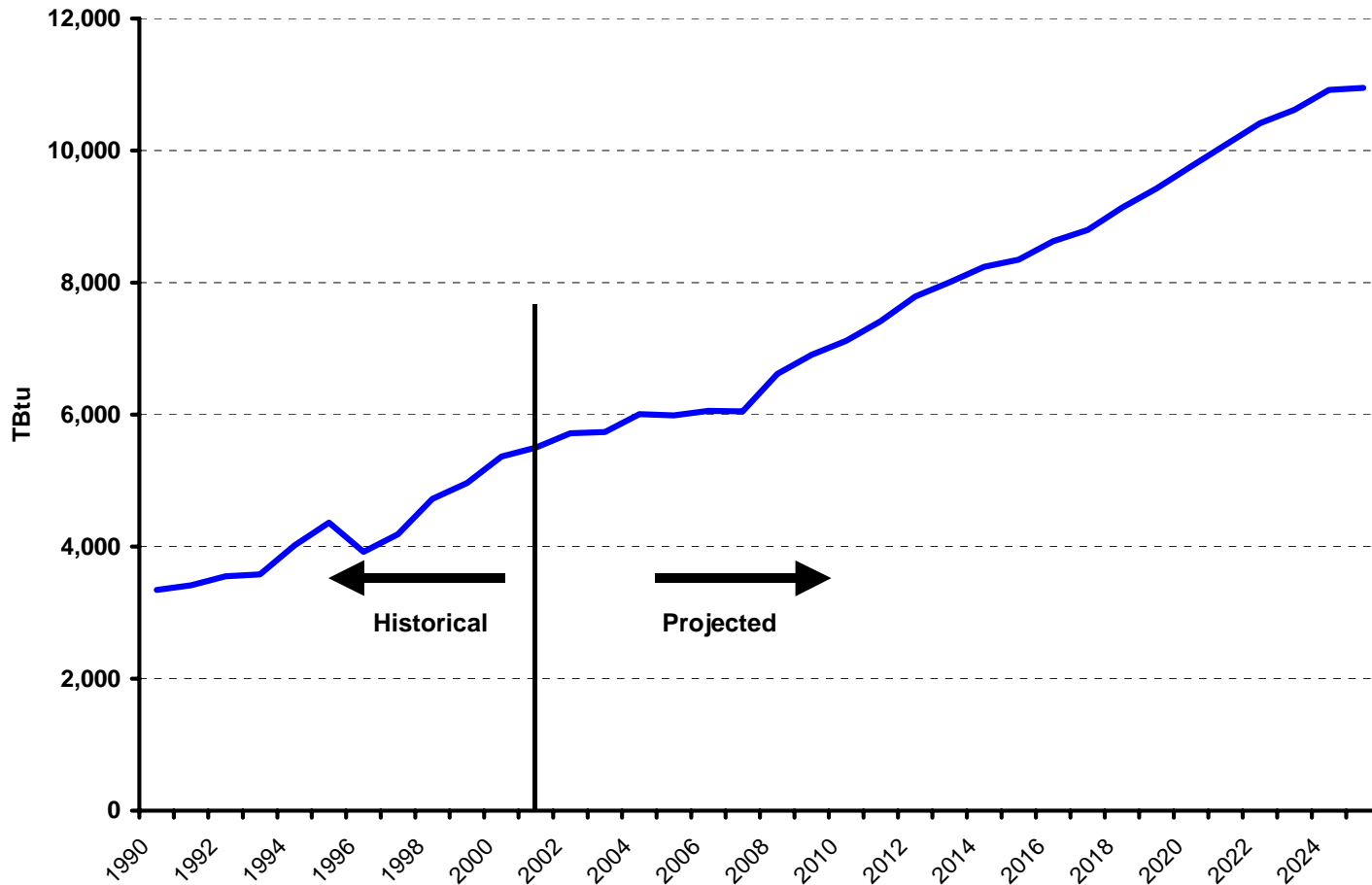
Gas Consumption for Power Gen Has Almost Doubled

U.S. Gas Consumption for Power Generation 1990-2002- (TBtu)



Gas Generation Growth Expected to Continue

Historical and Projected Gas Consumption for Power Generation - (TBtu)



Data Source: EIA

Energy and Environmental Analysis, Inc.



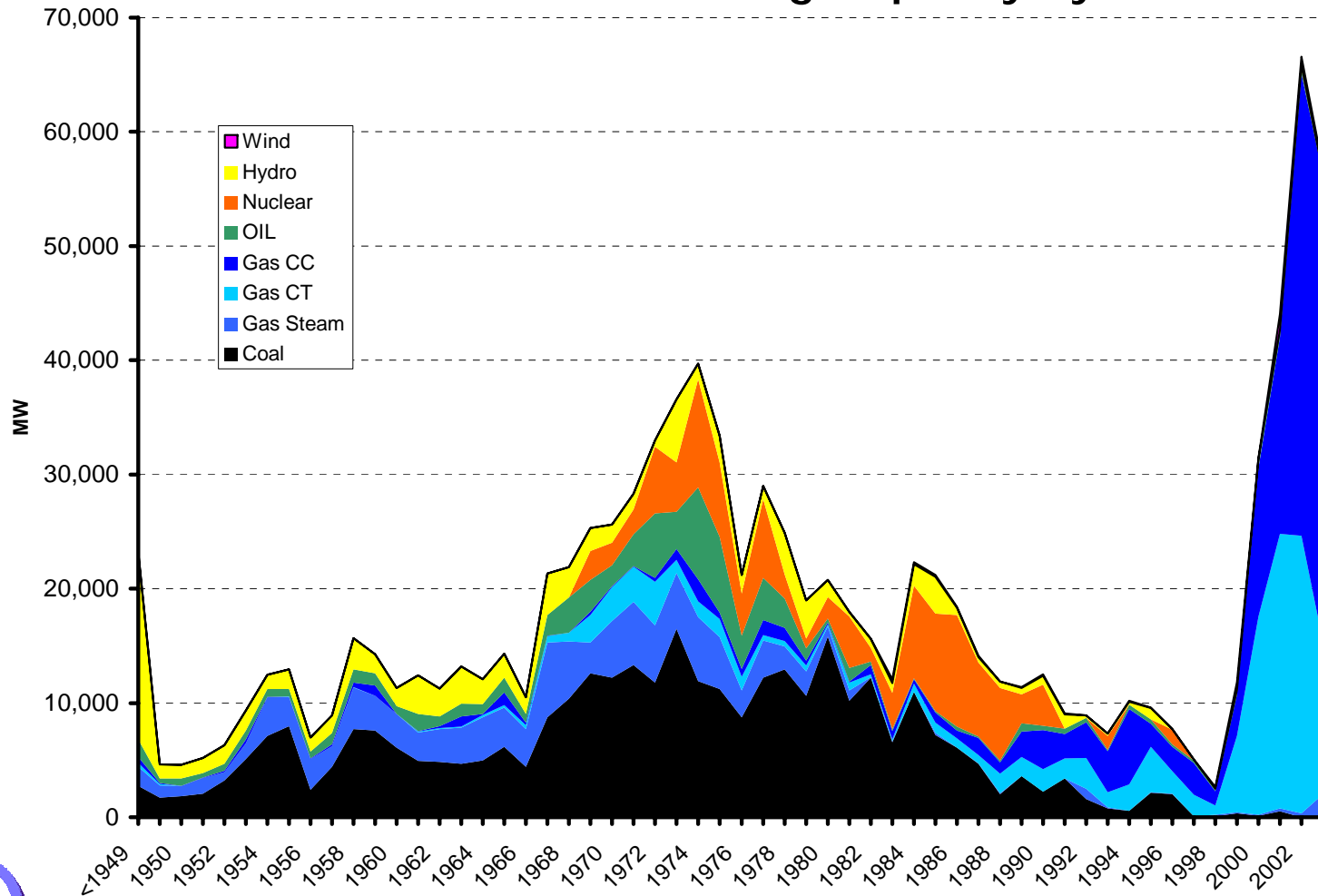
Conventional Wisdom on Gas Growth

- Growth driven by recent construction boom.
- Boom driven by environmental regulatory limitations.
- Creating lack of fuel diversity.
- Creating too much demand for gas.



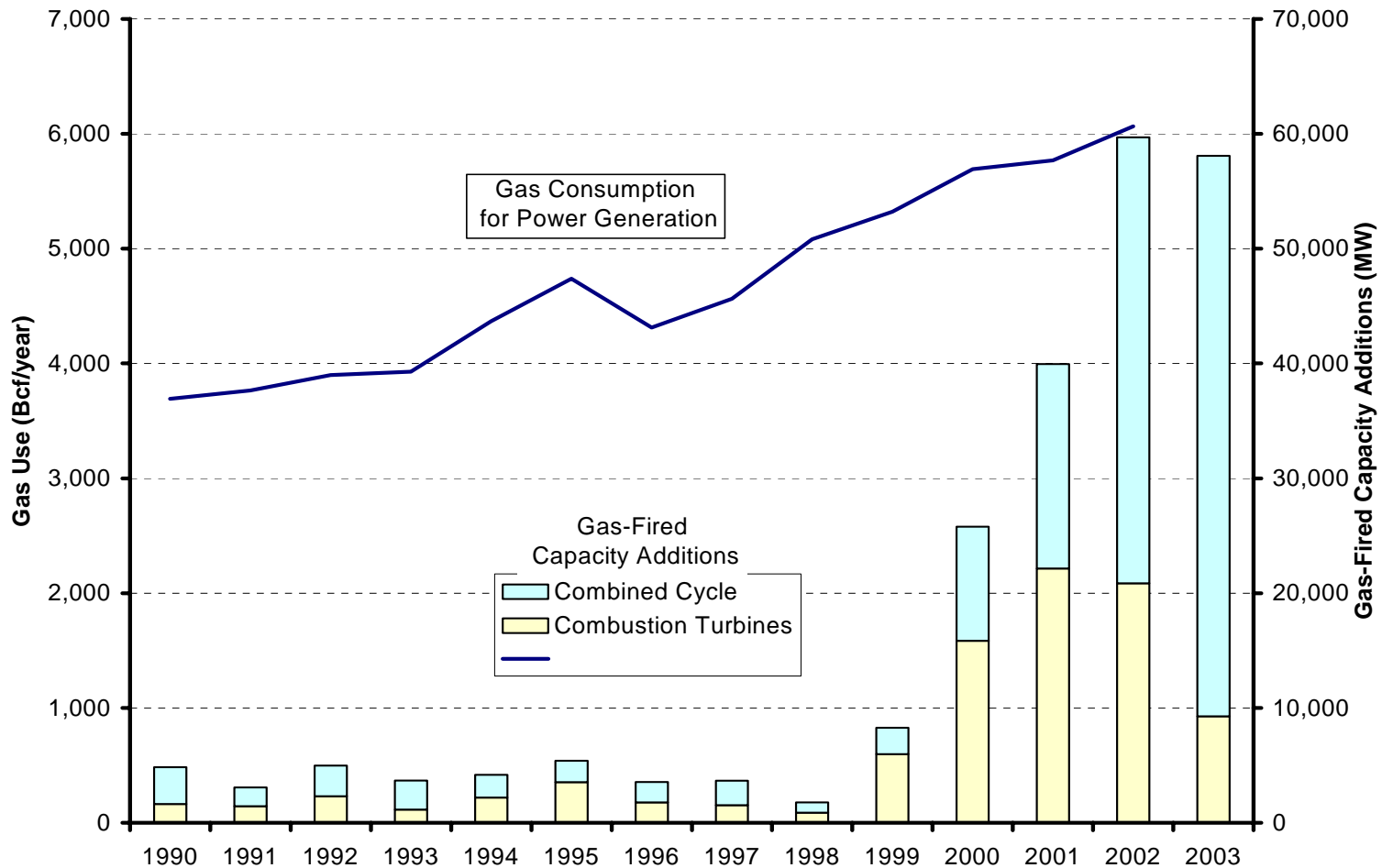
Gas Construction Has Soared Recently

Additions to U.S. Electric Generating Capacity by On-Line Year



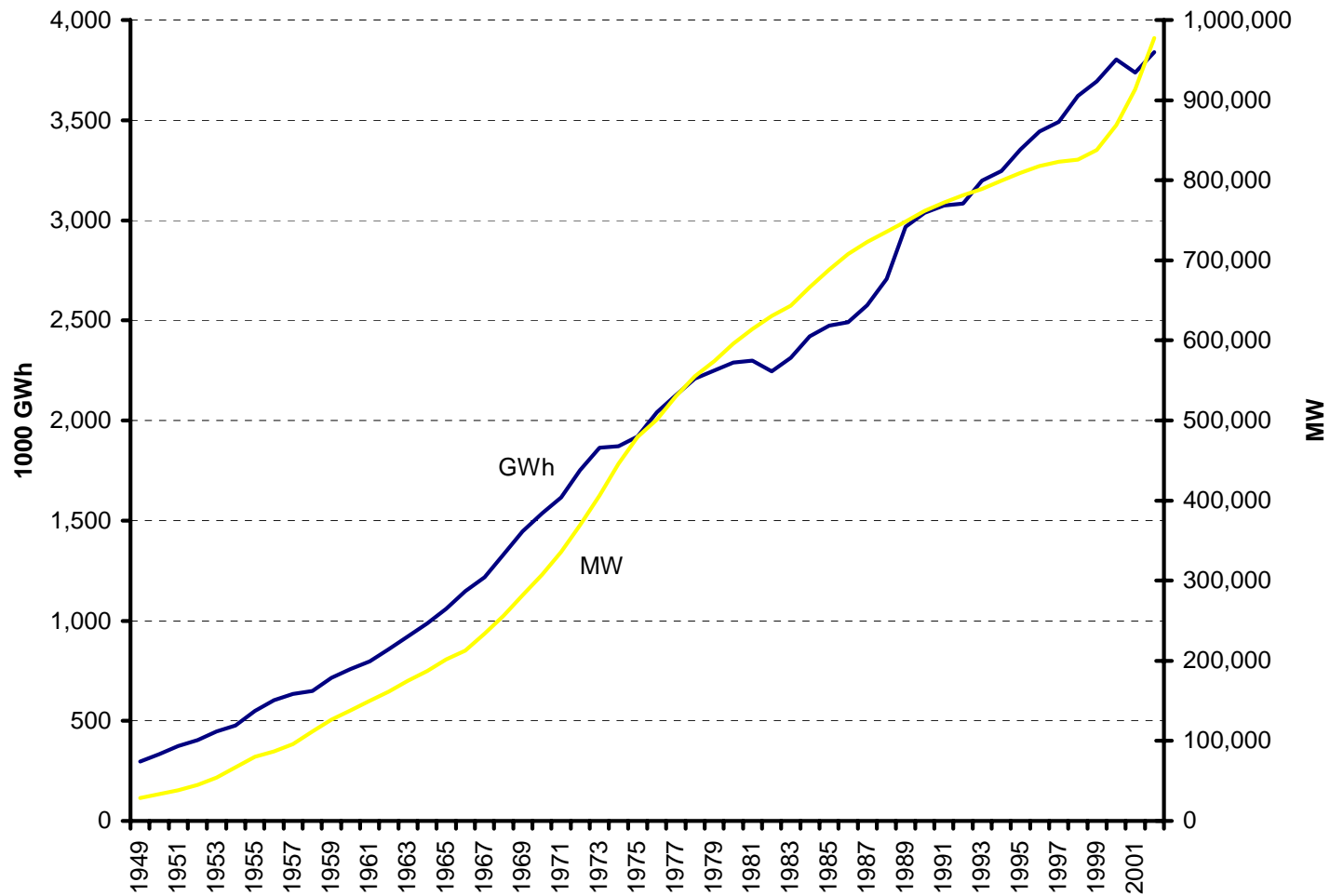
Gas Generation Growth Precedes New Construction

Gas Consumption and Capacity Growth – 1990-2003



Supply Lagged Demand in 1990s

Growth of U.S. Electricity Generation and Capacity

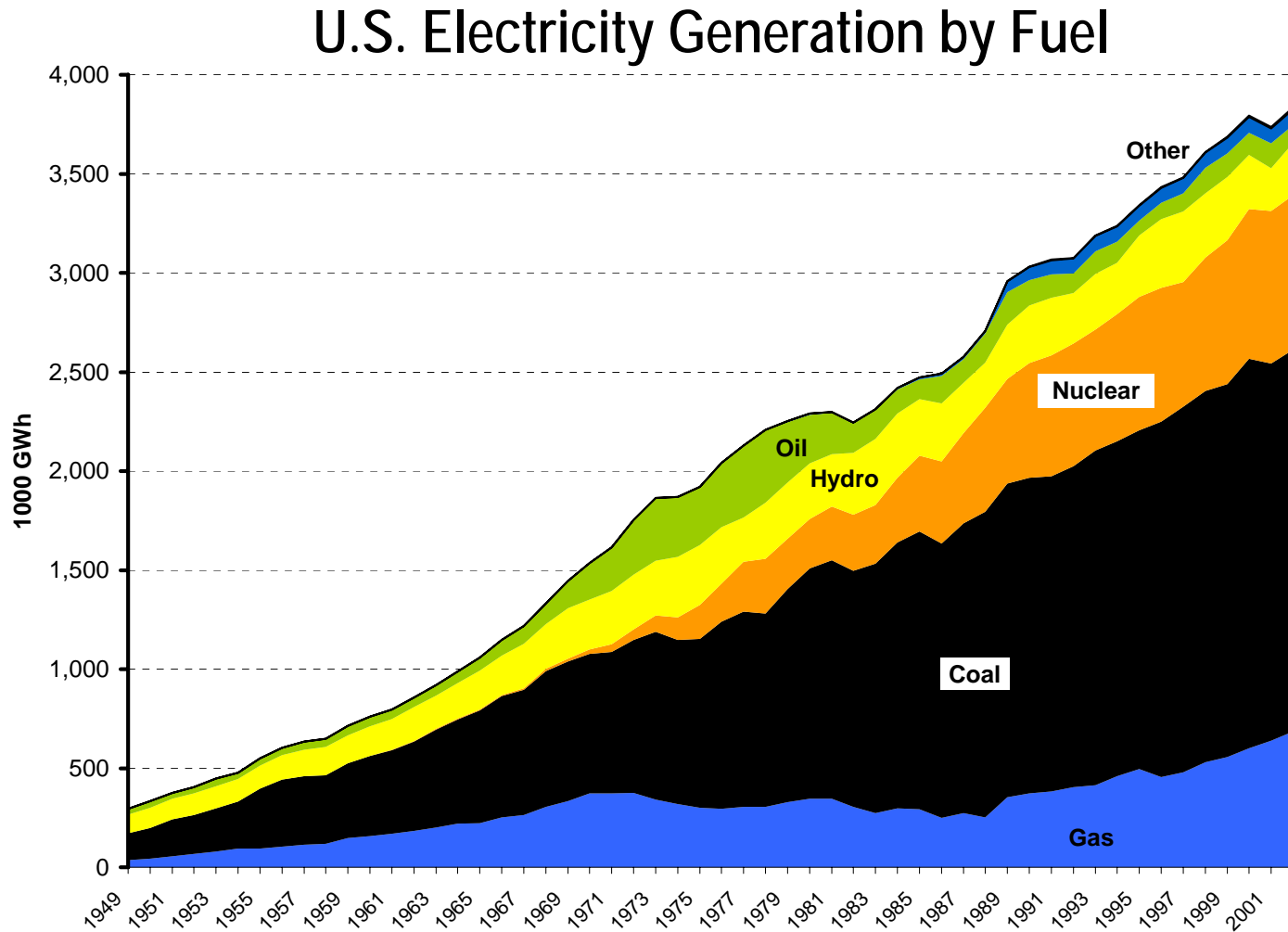


Drivers for Recent Gas Construction

- Yes, it's clean.
- Low capital cost - especially important for non-utility generators.
- Higher efficiency.
- Shorter construction time.
- Smaller footprint, lower water consumption....



Gas Share is Lower Today Than in 1970



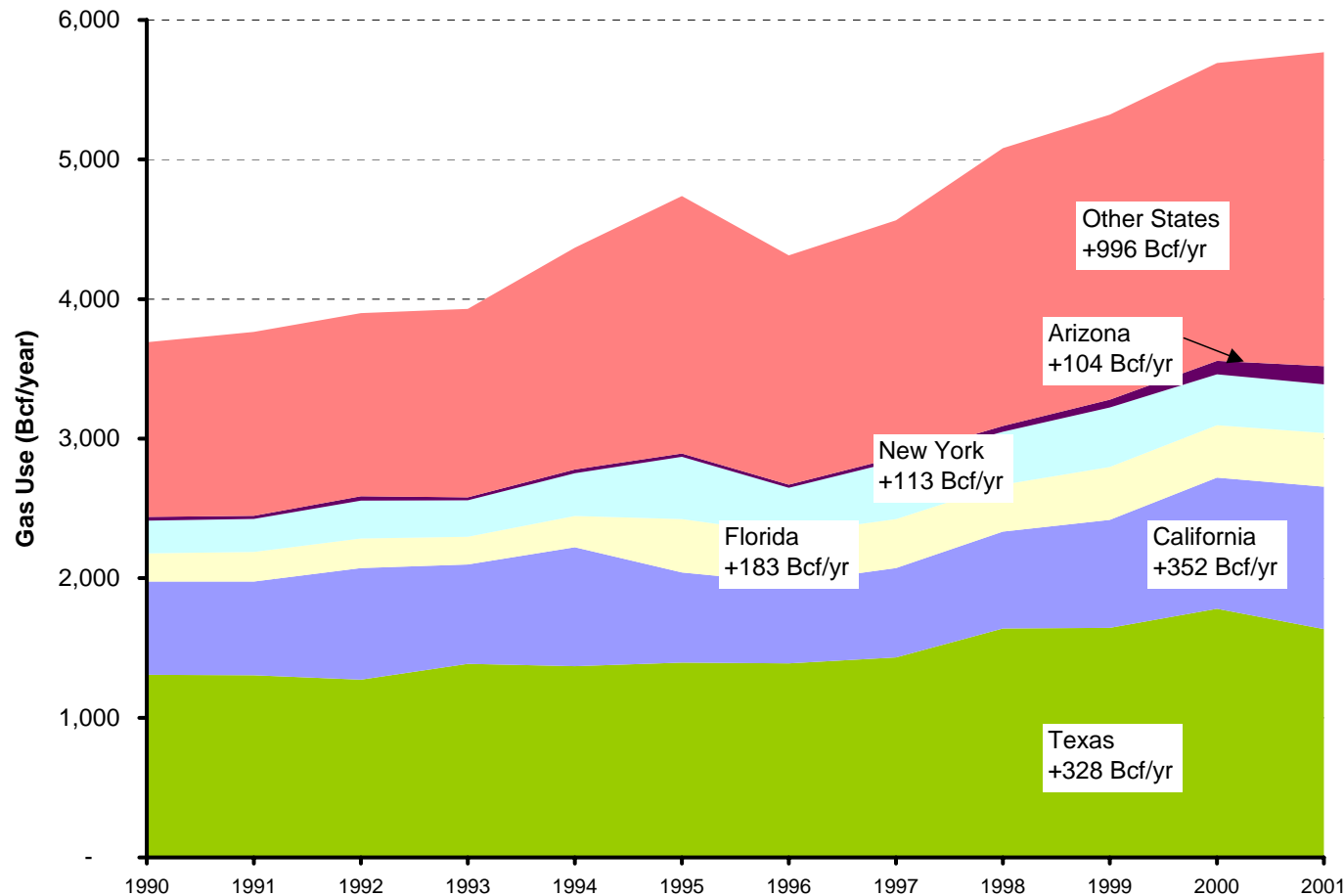
Effect on Gas Demand

- Much of gas demand growth is in historically gas-intensive markets.
- New combined cycle plants are displacing less efficient older plants.
- New plants are slowing growth in gas demand.



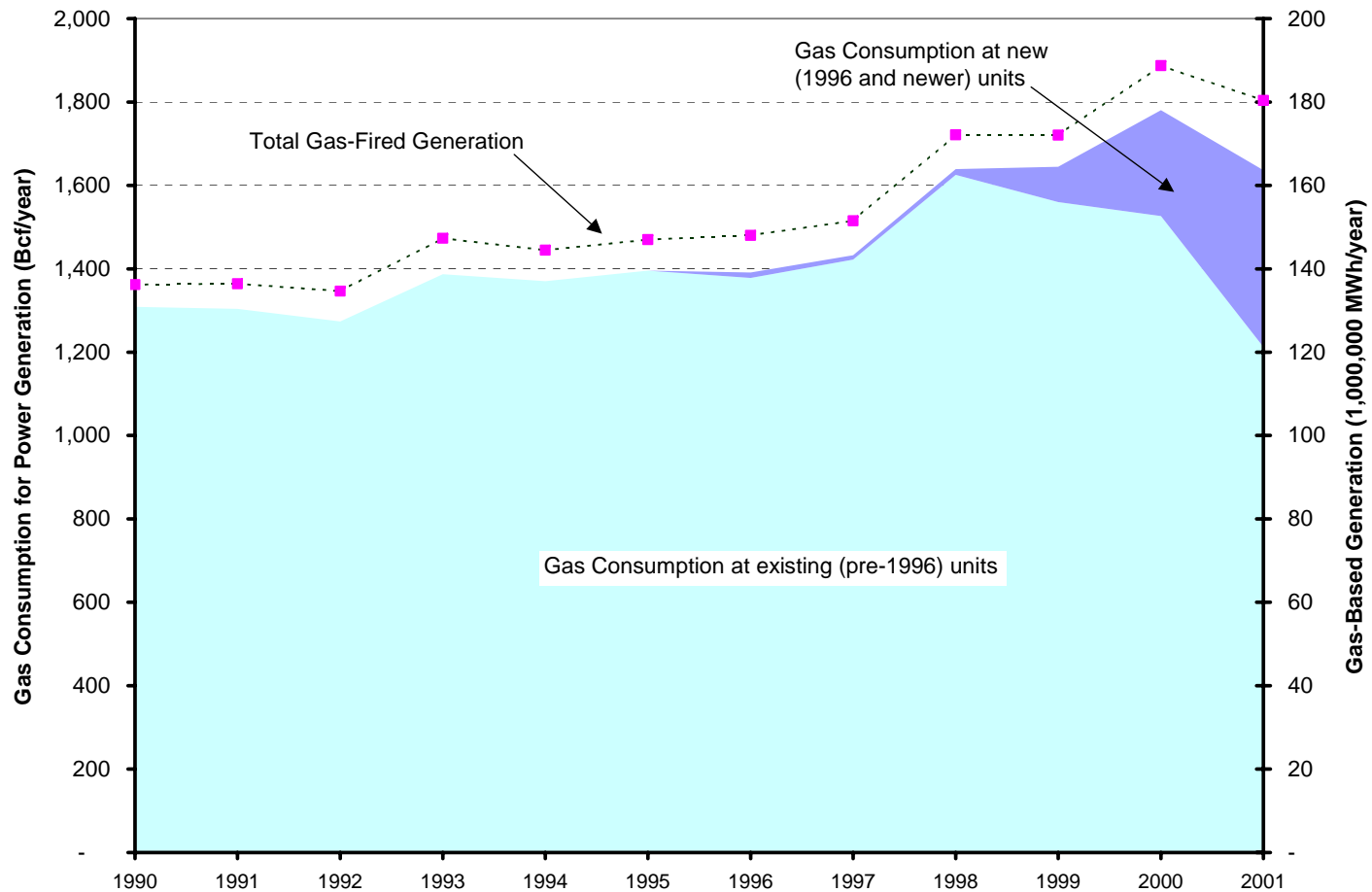
Gas Generation is Concentrated in a Few States

Gas Consumption for Power Generation by State – 1990-2002



New Plants Displace Gas from Older Gas Plants

Texas Capacity Displacement by New Plants



Reviewing Where We Are

- Gas generation grew first due to a lack of other resources.
- Then it grew because it met the needs of the market.
- The gas share is still lower than 30 years ago.
- New plants are slowing the growth of gas consumption.



Going Forward

- Higher gas prices and refocus on regulated utilities make coal seem more palatable.
- Cost and permitting/NIMBY issues will slow construction of new new coal.
- The new gas plants will be much of the growth margin for the immediate future.
- Gas may still be most cost-effective. The outcome depends largely on gas supply issues - especially LNG.

