Drivers for State Action on Energy Policy

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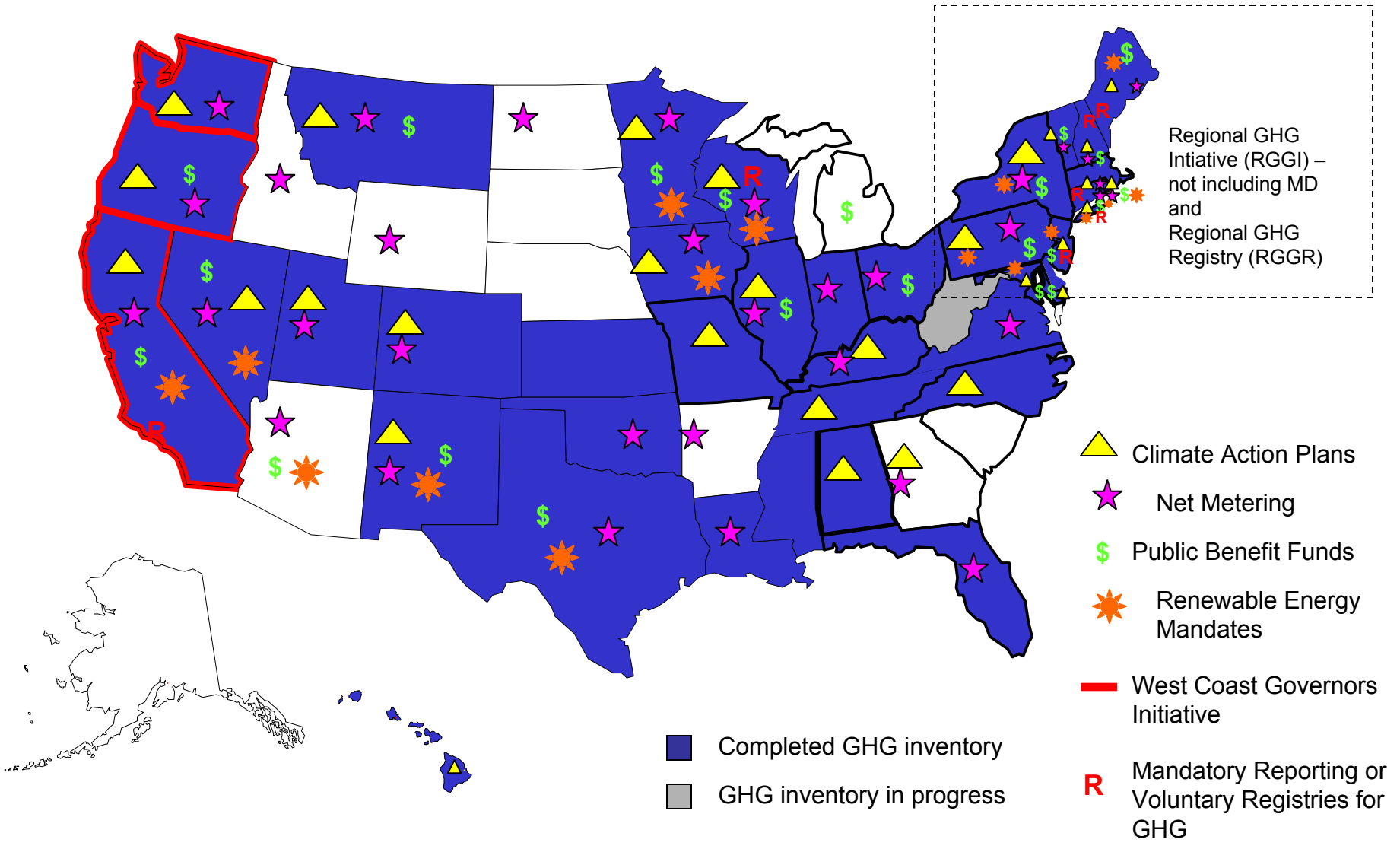
Ozone Transport Commission
Annual North American Conference of the USAEE/IAEE

July 9, 2004

What's going on in the states?



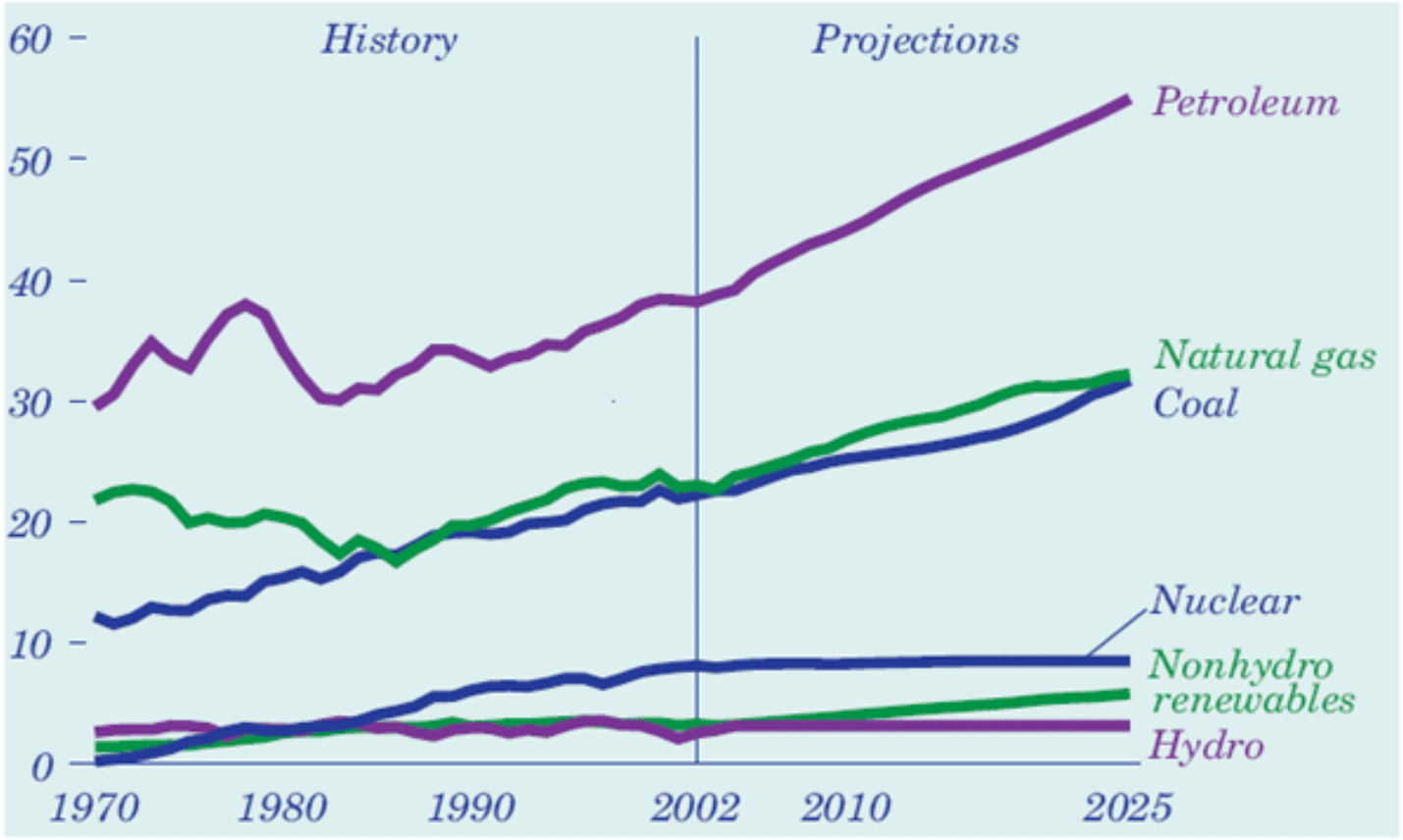
Note: Data from Pew Center, www.pewclimate.org/what_s_being_done/in_the_states

Drivers behind the trend…

- Increasing energy demand
- Energy security concerns
- Electricity reliability/transmission concerns
- More stringent environmental requirements

Energy Consumption Increases 40 Percent by 2025

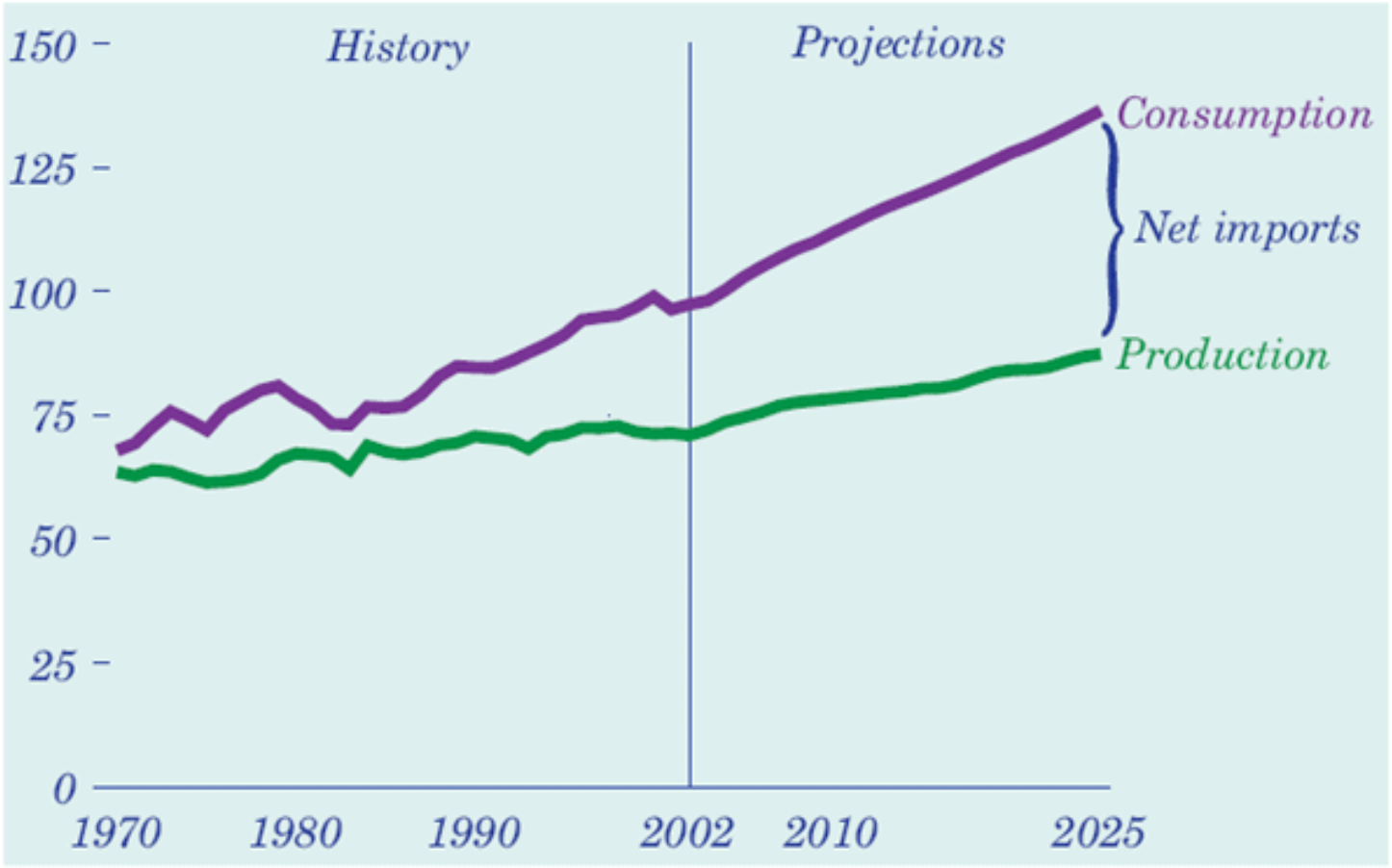
Energy Production by Fuel, 1970 - 2025



Energy Information Administration, Annual Energy Review 2002, DOE/EIA-0384(2002) (Washington, DC, October 2003).

Energy Security

Total Energy Production and Consumption, 1970-2025



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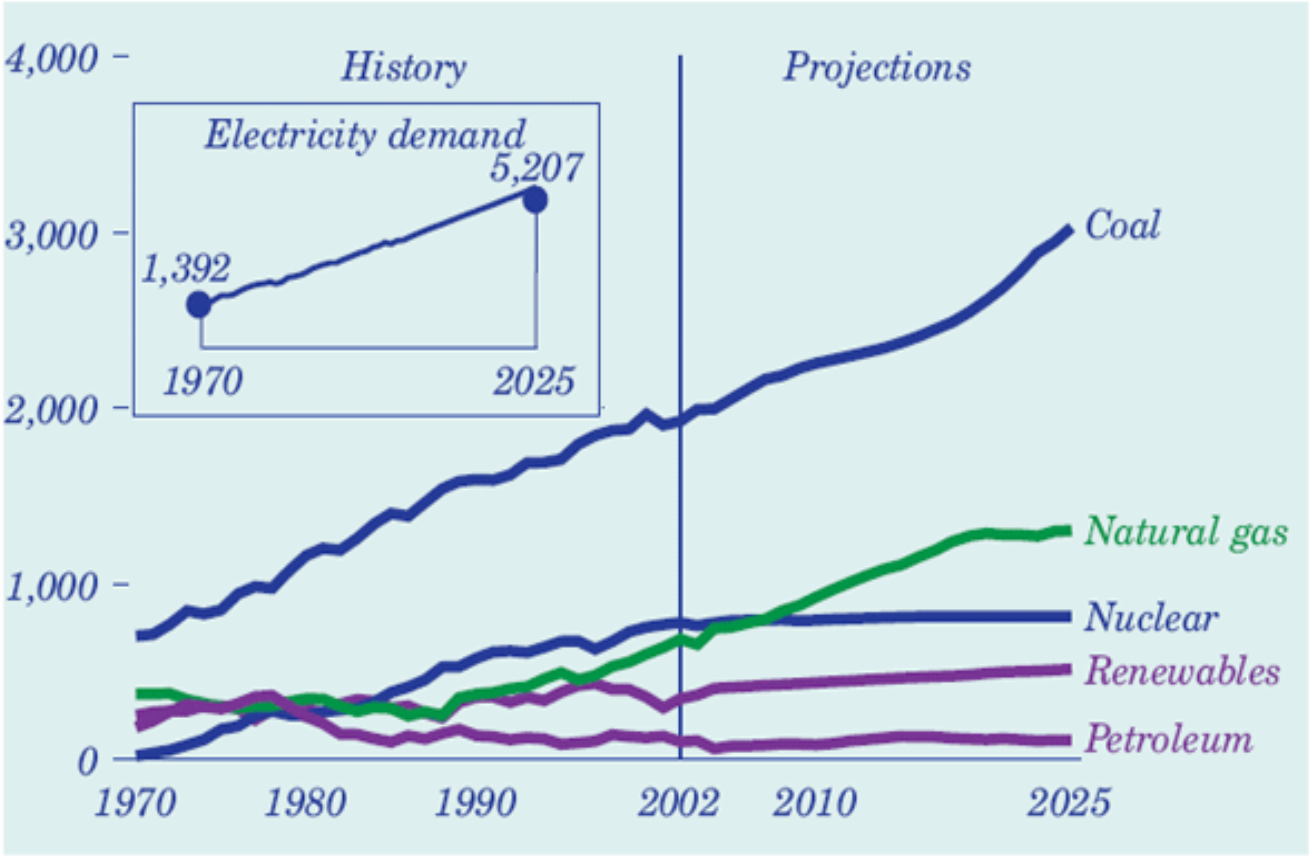
Electricity reliability & transmission

Electricity Generation by Fuel, 1970-2025



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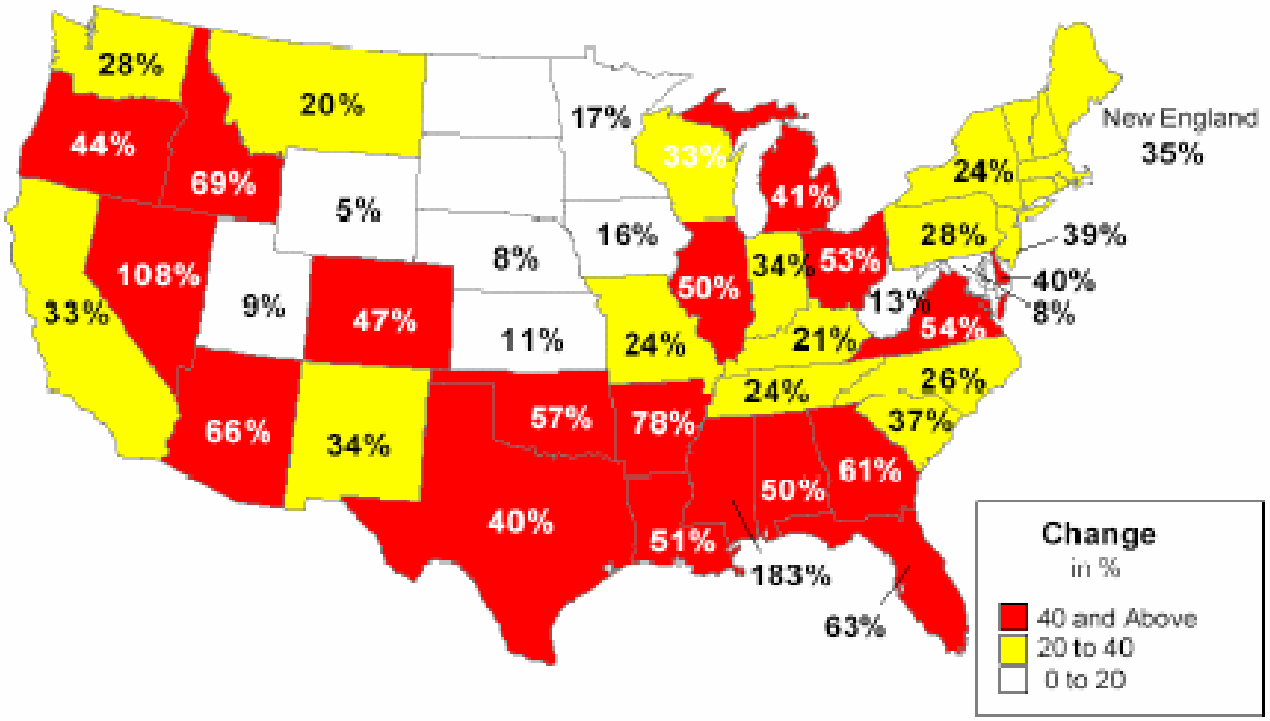
By 2011, generating capacity anticipated to increase 30%...

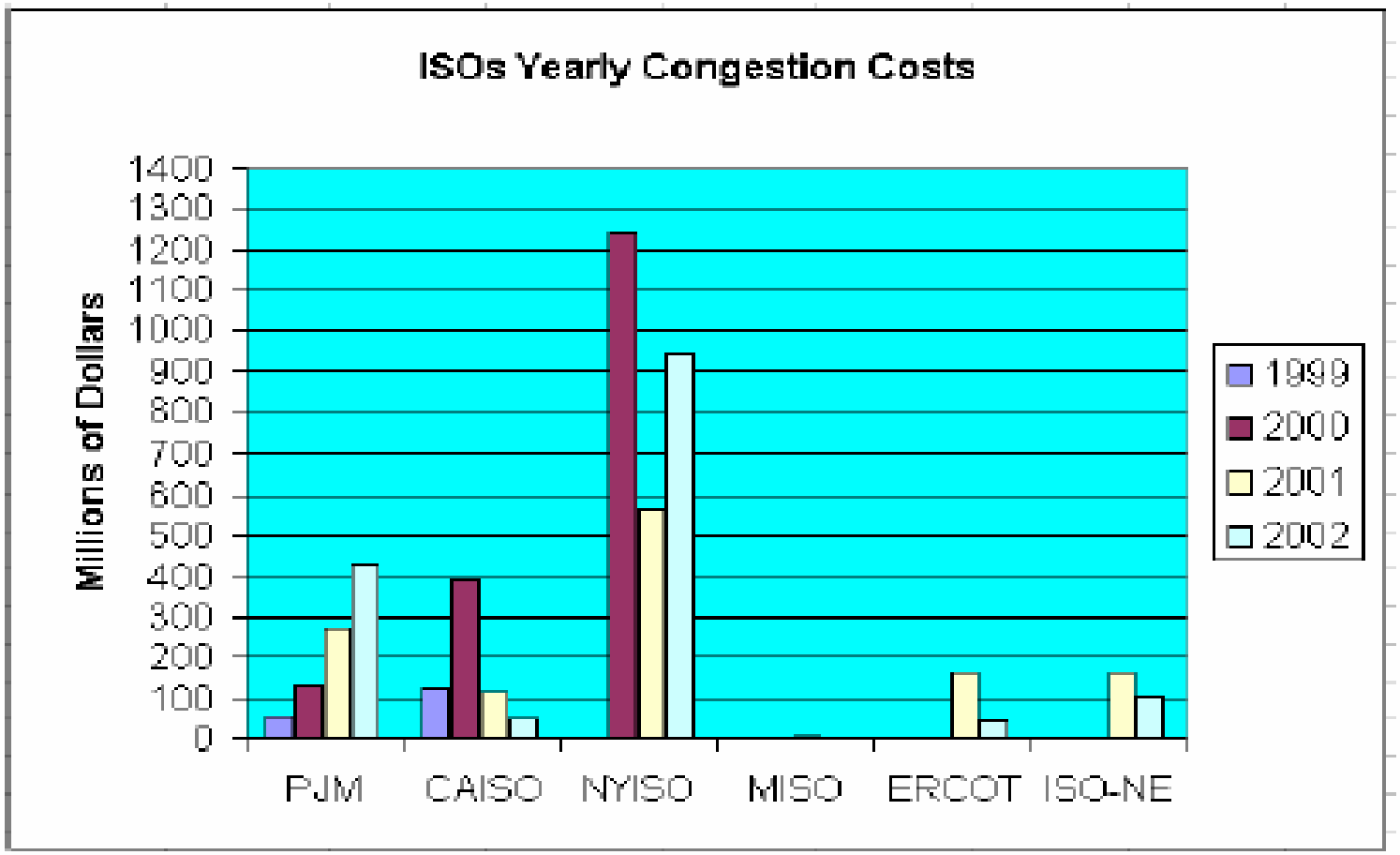
Percentage of Projected New Generator Additions 1998–2007 as a Percentage of 1998 Total Installed Generation (source: Energy Ventures Analysis, Inc.)



Projected New Generation Additions

…compared to a 5% increase in transmission

Congestion Costs a Growing Concern



U.S. Department of Energy Transmission Bottleneck Project Report, March 2003

Environmental Drivers

- New clean air rules
- State programs and cap and trade allocation schemes
- Growth in GHG emissions

EPA's Clean Air Rules of 2004

- *Interstate air rule*
  - Cap and trade system to reduce NOx and SO2 emissions by 70%
  - Sulfur reduced by 5.6 M tons; NOx by 1.8 M tons by 2015
  - Compliance costs estimated at $2.9 B in 2010; $3.7 B in 2015
- *Mercury rule*
  - Permanently caps mercury emissions from power plants to achieve at least a 30 percent reduction and as much as 70 percent
- *Nonroad diesel rule*
  - 90 percent reduction in diesel engine emissions of PM (129,000 tons) and NOx (738,000 tons), and 99 percent reduction in sulfur (3000 ppm to 15 ppm by 2010)
  - Estimated cost is 1-3 percent of purchase price of nonroad equipment
- *Ozone rules*
  - Designation and implementation of more stringent 8-hour standard
- *Fine particle rules*
  - Designation and implementation of more stringent standard

EPA's Clean Air Rules (cont'd)

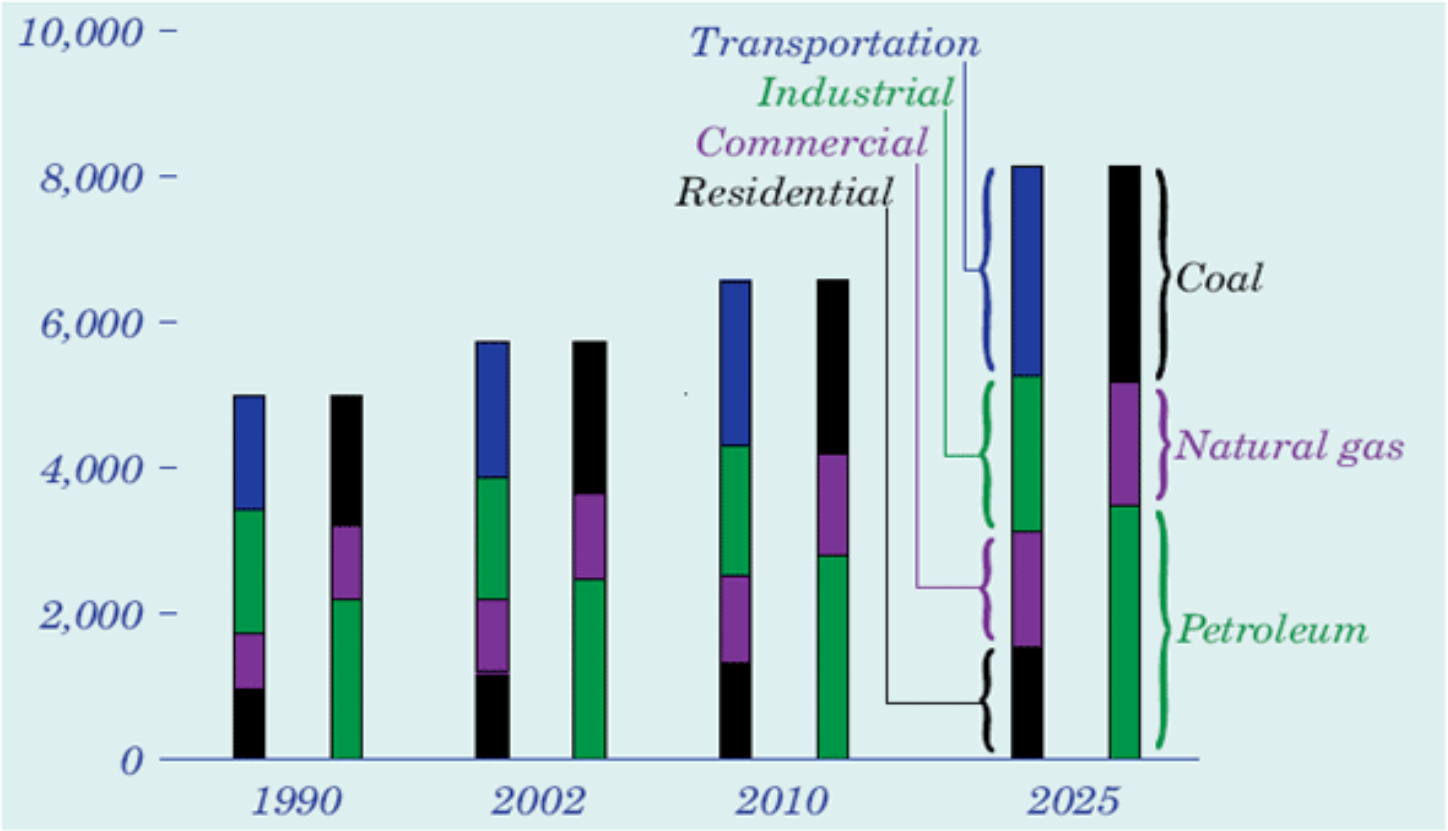
- *Regional Haze Rule*
  - Program to prevent any future and remedy any existing impairment of visibility in Class I areas (national parks and wilderness)
- *Best Available Retrofit Technology Rule*
  - Covers determinations regarding sources that will be subject to BART in context of complying with the regional haze rule
- *Locomotive and Marine Rule*
  - *Proposes new emission standards for new compression-ignition marine and locomotive engines*

Examples of State Rules & Programs

- *CARB regulations*: reduce vehicle GHG emissions by 30 percent
  - Estimated to add ~$1000 to initial cost of vehicle
- NOx SIP Call
  - Some states included EERE set-asides and/or output-based allocation approaches
- MA and NH multi-pollutant programs
  - To reduce SO2, NOx, mercury and CO2 from older and/or existing coal-fired power plants by 2006 (first target date)
  - Both employ output-based limits or approaches that promote energy efficiency and clean technologies

GHG Emissions Increasing 60 Percent by 2025

Projected U.S. carbon emissions by sector and fuel, 1990-2025 (million metric tons)



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More Examples of State Actions

- *CA "Green Wave Environmental Initiative"*
  - State's two largest pension funds to commit $1.5B to invest in cutting-edge technologies at environmentally responsible companies
- *Clean Energy States Alliance (CESA)*
  - 12 states to provide ~$3.5B of public benefit funds to promote renewable and clean energy markets in US
- *TX Emission Reduction Plan (SB 5)*
  - Implement all cost-effective energy efficiency measures – reduce energy consumption by 5 percent each year for 5 years
  - Find credible way to account for emissions reductions from EE and renewables in state implementation plans

States' Perspective

"*We need to protect against energy shortages and price spikes, accommodate the population's growing energy needs, and take advantage of new technologies that will lower the cost of renewable energy and of controlling emissions from the fossil fuel resource base.*"

Western Governors Association, Clean Energy Resolution (June 22, 2004)