

The Need for Electric and Natural Gas Infrastructure in New England

Forum on the Future
*“The Looming Electricity Dilemma in New
England”*

Friday, September 29, 2006
Bedford, New Hampshire



New England Energy Alliance

- ❑ Energy companies, associations, business organizations, labor, interested stakeholders
- ❑ Created in 2005
- ❑ Issues white papers and surveys, writes op-eds, reaching out to campaigns, serve as a resource
- ❑ Agree on one issue – need for infrastructure development
- ❑ Web site – www.newenglandenergyalliance.org



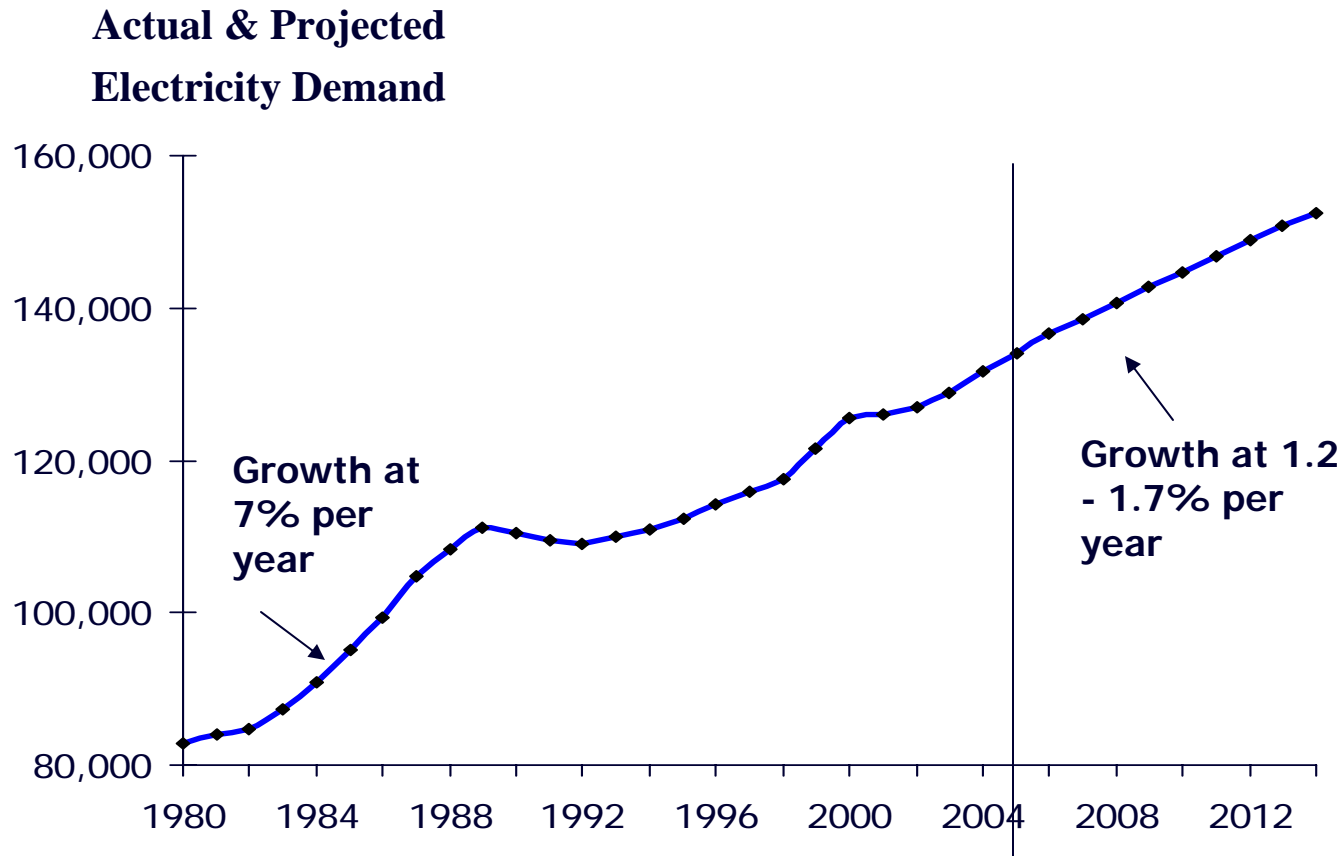
Basic Message: A “Sense of Urgency” for New Infrastructure Construction is Warranted

- **Tenuous balance between supply and demand**
 - Applies to both electricity and natural gas
 - Numerous studies (NEEA) are predicting shortfalls this decade

- **“Uncertainties” chilling supply investments**
 - Electricity market signals
 - Public/Political reaction to projects before regulatory review
 - Climate change policy requirements (RGGI)
 - Conflicting regulations between and within states

- **Politics not favorable toward development**
 - Candidates generally not addressing infrastructure issue
 - Academics and Federal Officials warn about “indifference” and “intolerance” -- history of “muddling through”

Increasing Demand for Electricity Requires New Infrastructure Projects



NH growth rates highest in region

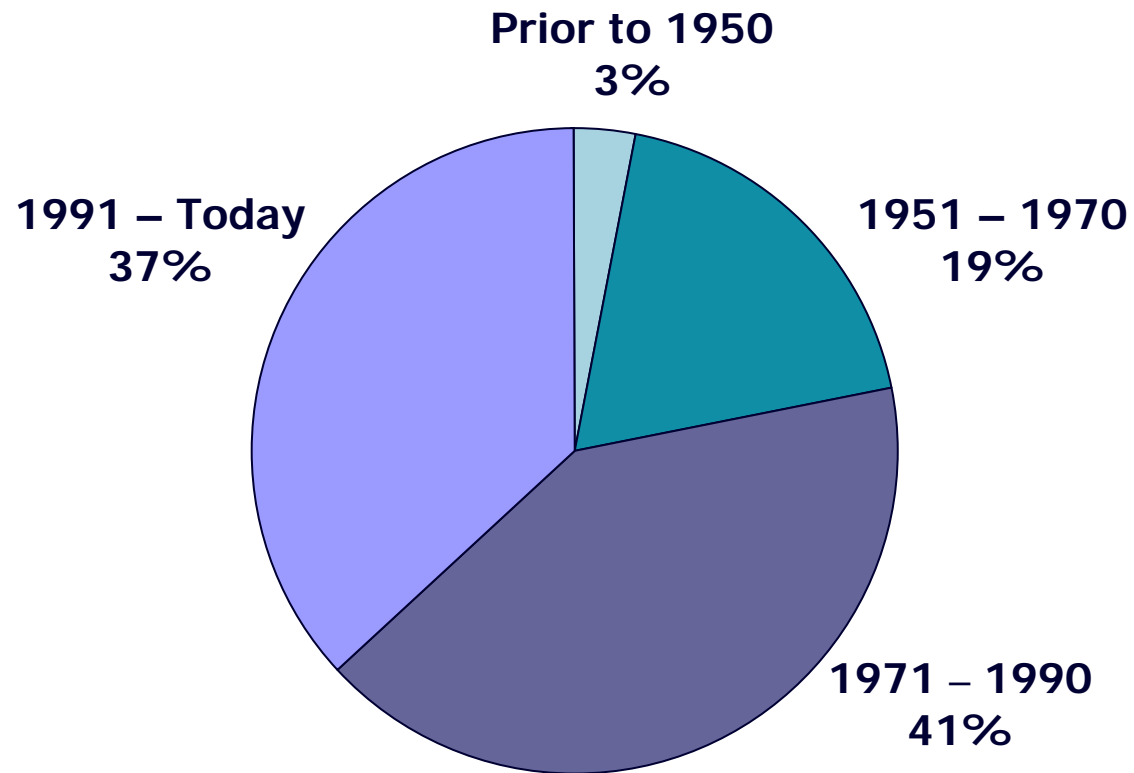
(ISO Projected Compound Annual Growth Rates through 2014*)

	Energy (MWh)	Summer Peak (MW)	Winter Peak (MW)
New England	1.4	1.5	1.5
New Hampshire	1.9	1.9	1.9

*RSP05 - 2006 summer peak of 28,021 MWs topped 2008 projection of 27,750 MWs

Generating Infrastructure Must be Upgraded or Replaced

Electricity Generating Infrastructure Vintage





Keeping Pace Means Substantial Facility Construction & Relicensing

- **At least one new generating plant every 18-mos.**
 - After accounting for conservation programs (defer ~3 new plants)
 - Consider fuels other than natural gas to maintain diversity --- must be inclusive and not exclusive
 - Avoids potential for peak demand period shortfall or reliability decline
- **Vermont Yankee and Pilgrim gain license renewal:**
 - Critical base load capacity
 - Prematurely closing akin to increasing the rate of electricity growth by 30%
- **Keeping pace also means continuing/expanding energy efficiency programs and actions consistent with policies that support renewables.**



Maintaining the “Status Quo” in CO₂ Emissions is *Very Difficult**

- **Rough calculations show that either:**
 - A Cape Wind sized project would have to be built every year, *or*
 - Two nuclear plants would have to be built before 2014, *or*
 - Existing useful and reliable coal facilities shutdown, with 8 natural gas plants built --- increasing the region’s demand for this commodity by 13%, *or*
 - End use efficiency breaking the historic energy/economy link with no increase in electricity demand for years on end.

*The Role of Nuclear Energy in Reducing CO₂ Emissions in the Northeast, May 2005

Impressive Burst of Electricity Infrastructure After Restructuring

□ **Transmission:**

- 6 major 345 kV projects are underway --- ~ \$3B investment
- 272 additional upgrade projects on the drawing boards

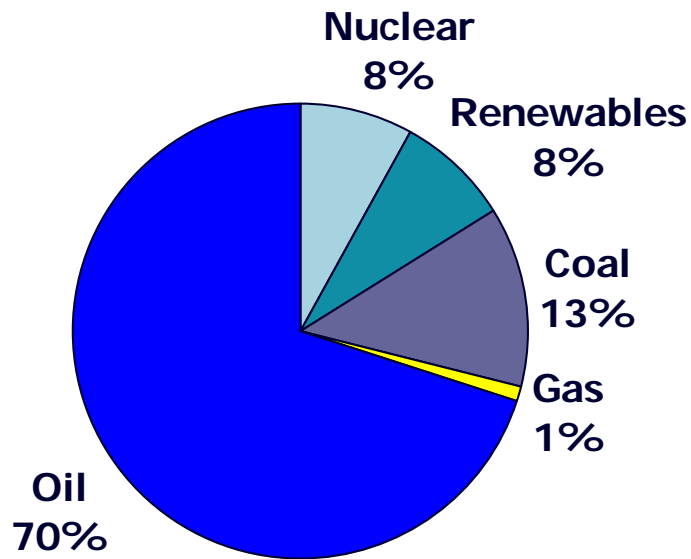
□ **Generating Facilities:**

- 9,000 MW of capacity since '99, \$6 billion in investment before development slowed over market uncertainties/cost recovery
- Nuclear power plant license renewal/uprates
- Improved facility performance in competitive markets
- Early result from '06 market changes is growing pipeline of projects – 35 totaling 4,000 MWs but no shovels in the ground

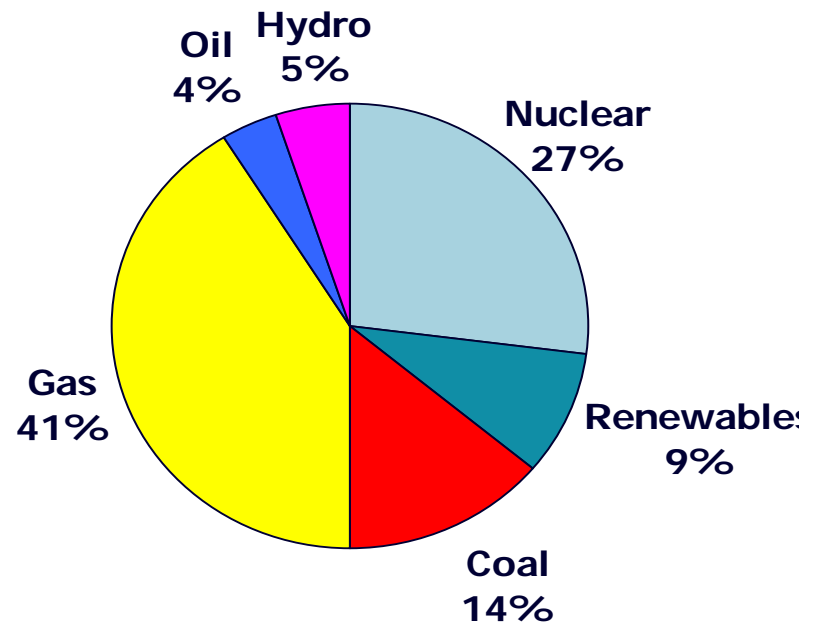
Generation Fuel Mix Has Changed

Electric Generation Fuel Mix Comparison

1970

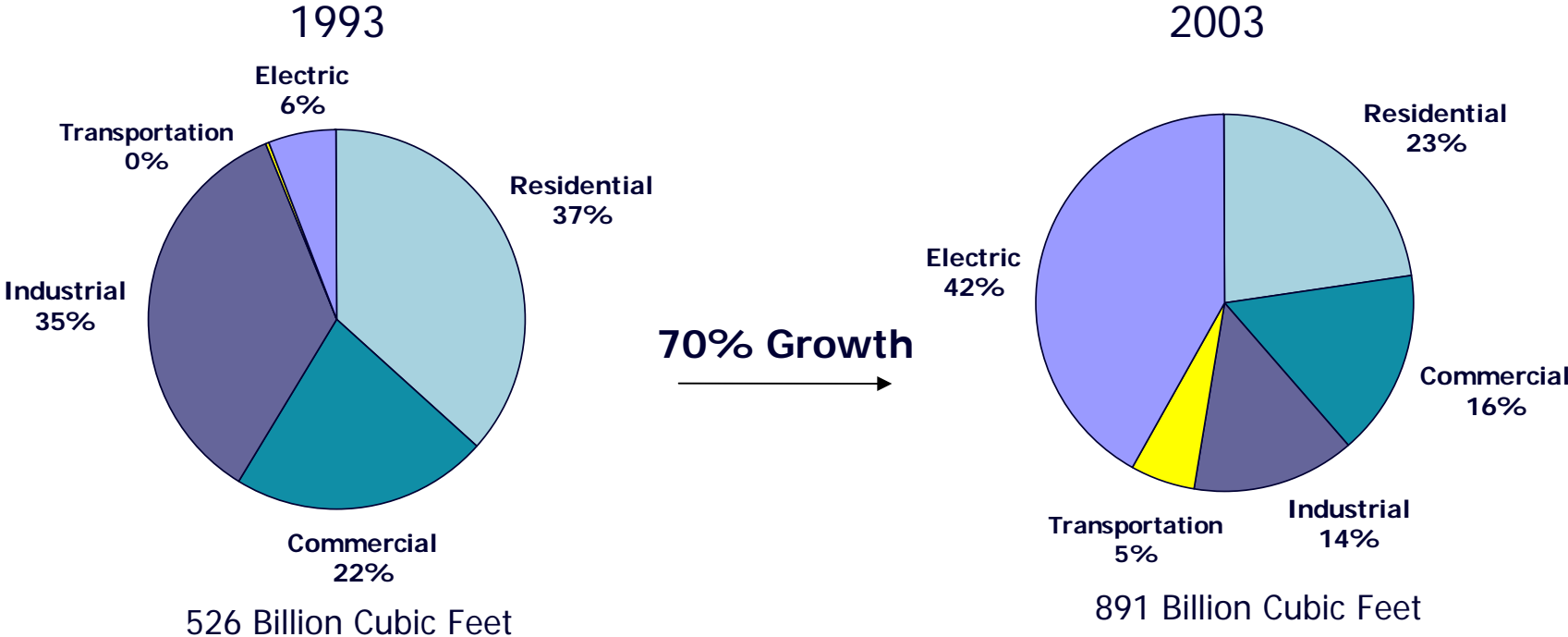


2004



Natural Gas Powers Electricity Plants, Fuels Business and Warms Homes

Natural Gas Consumption Trends





Demand for Natural Gas

Closing in on Delivery Capacity

- **Substantial consumption growth:**
 - 70% from '93 to '03 (rivals electricity in the '80s)
 - Electricity generation a key driver : 20 new gas fired plants built since '98

- **Delivery capacity margins are shrinking:**
 - '03 FERC report cited looming capacity shortages
 - Pipeline load is now >90% for 3-months per year
 - Peak demand in '04 exceeded prediction for '06



LNG a Major Source of Supply in Region

- **Vital to supply reliability:**
 - Equal to 20% of year round gas supply
 - During peak periods provides 30% of demand
 - Shortens the supply pipeline
 - Provides in-region storage capability

- **A 2-year delay in closing the natural gas supply gap could cost consumers up to \$3 billion by 2010** (INGAA Foundation)



Where do we go from here?

- First answer a few questions:
 - Can we overcome reputation as hostile to development?
 - Can we resolve market issues?
 - Can we improve regional cooperation on issues that are not defined by geographic or political boundaries?
 - Can we make the siting process predictable and reasonable?
- Many observers believe that the answers are all “no”
- How do we prove them wrong?



A First Step – Agree on basic principles to guide energy planning and decision making

- **Proactive Decision-making.** Siting processes on long lead-time, capital-intensive projects must be adhered to and streamlined and new investment must be supported.
- **Policy Balancing and Coordination.** Balancing energy, environmental and economic policies will reduce costs, increase reliability and encourage new investment.
- **Supply Resource Diversity.** The most reliable/ affordable energy supply is built on diversity – *no silver bullet*.
- **Recognition of Costs.** The industry is among the most capital-intensive -- new investment should be encouraged and the costs recognized.



A First Step – Agree on basic principles to guide energy planning and decision making

- **Demand Resource Expansion.** Additional implementation of economical energy efficiency and demand response mechanisms should be encouraged.
- **Market Improvement.** Restructuring of electricity markets is progressing --- adjustments are to be expected and must be addressed.
- **Interconnection Enhancement.** Interconnections with neighboring regions should be strengthened – along with indigenous supply facilities.



Our Mission

- Help ensure that energy supply decisions are made with full and balanced consideration of the region's energy and economic needs; and
- Advocate timely development of environmentally sound energy supply projects and supporting public policies across all fuel sources and market segments.