NEW ENGLAND NATURAL GAS INFRASTRUCTURE

Docket No. PL04-01-000

Item A-3

Staff Report of the Federal Energy Regulatory Commission

December 17, 2003

Figure 2.

Pipeline Safety Improvement Act of 2002

- Evaluate the ability of New England's natural gas infrastructure to meet demands of electric power generation.
- Evaluate the ability of the natural gas system to meet current and projected demand.

Figure 3.

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Figure 4.

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Figure 5.

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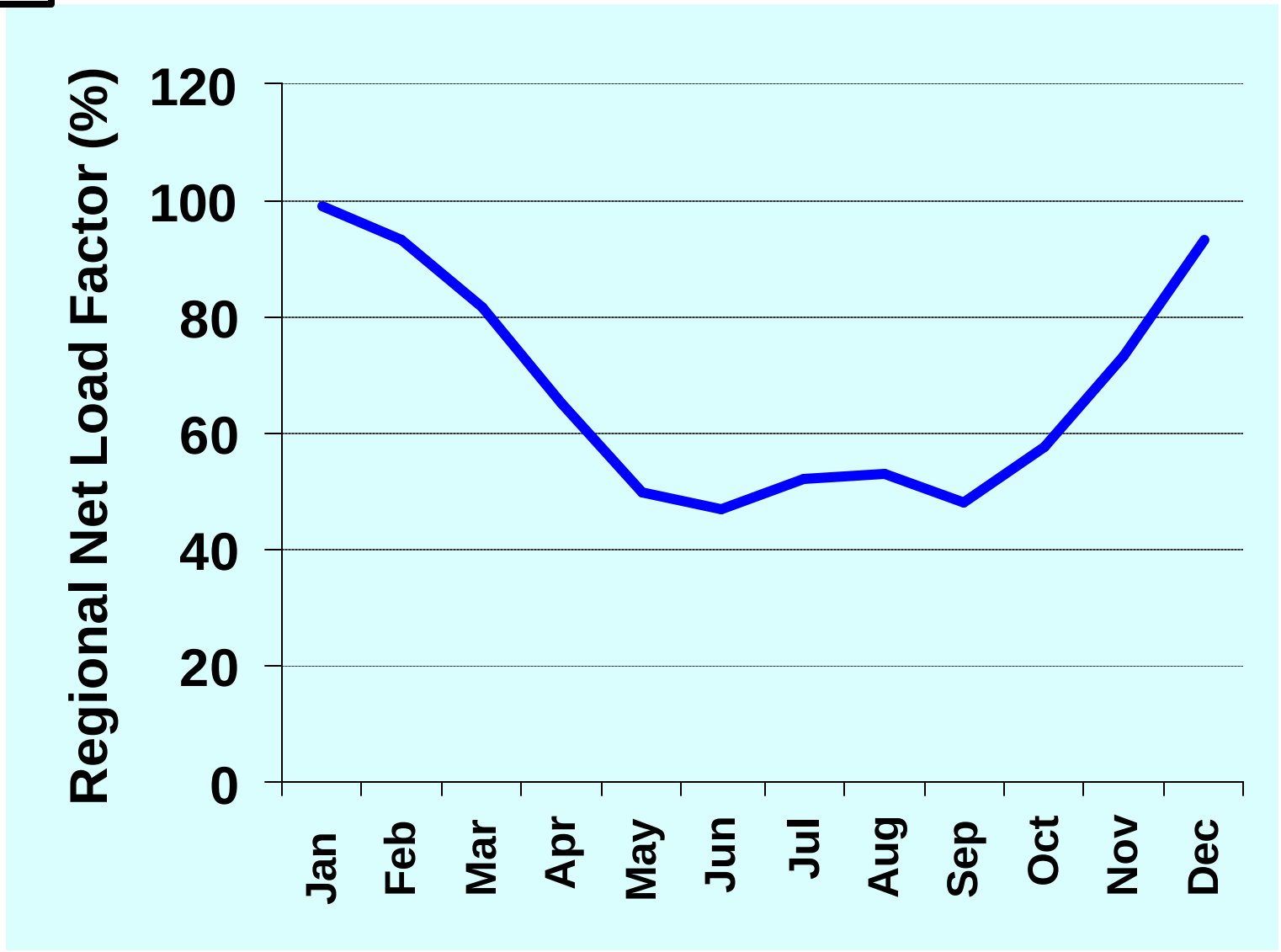
In 2004, New England monthly pipeline load factor is expected to exceed 90% three months of the year. This indicates the pipelines are running full and have little excess capacity.

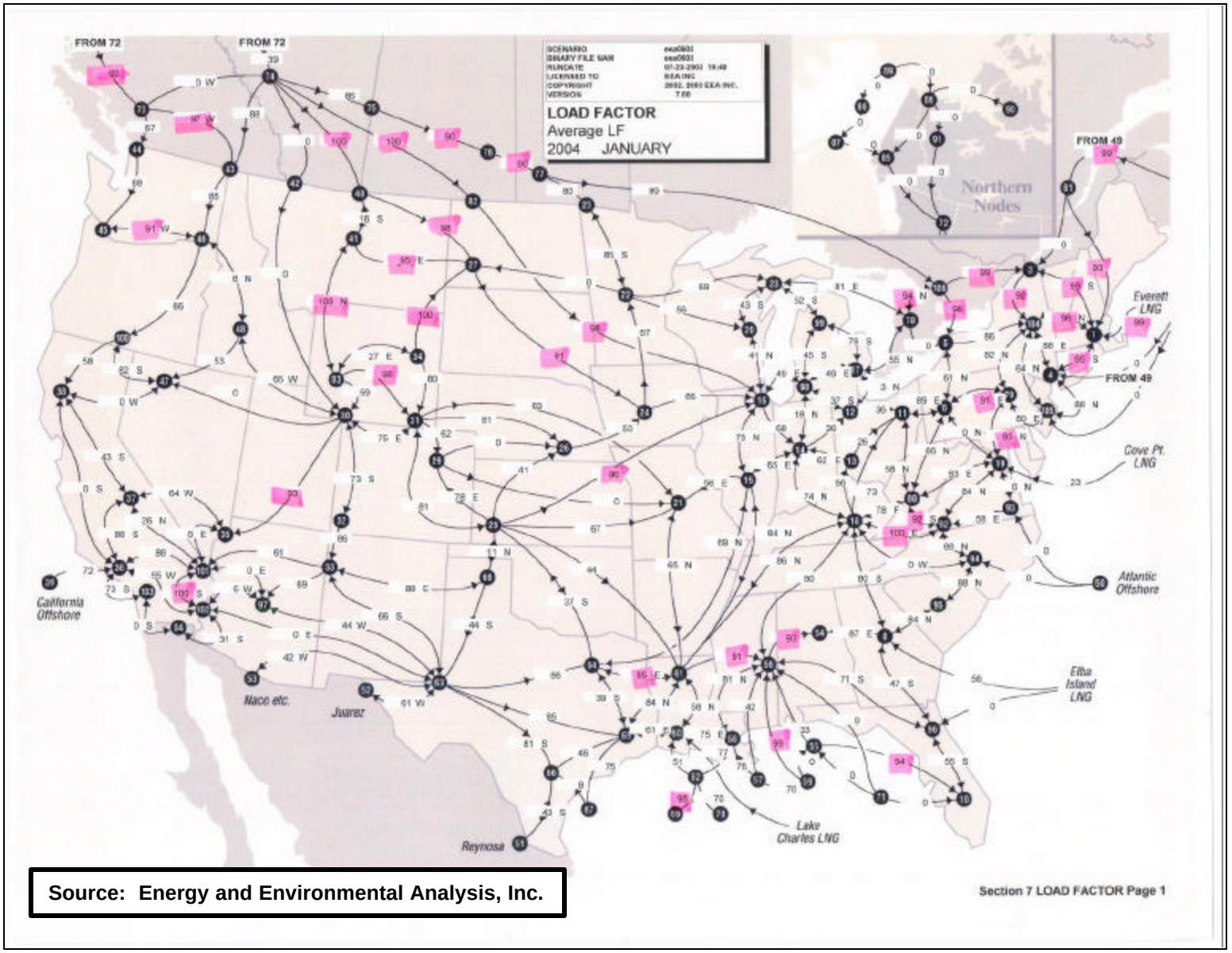
Figure 6.



Source: EEA

Pipelines with load factors greater than 90% are not unique to New England

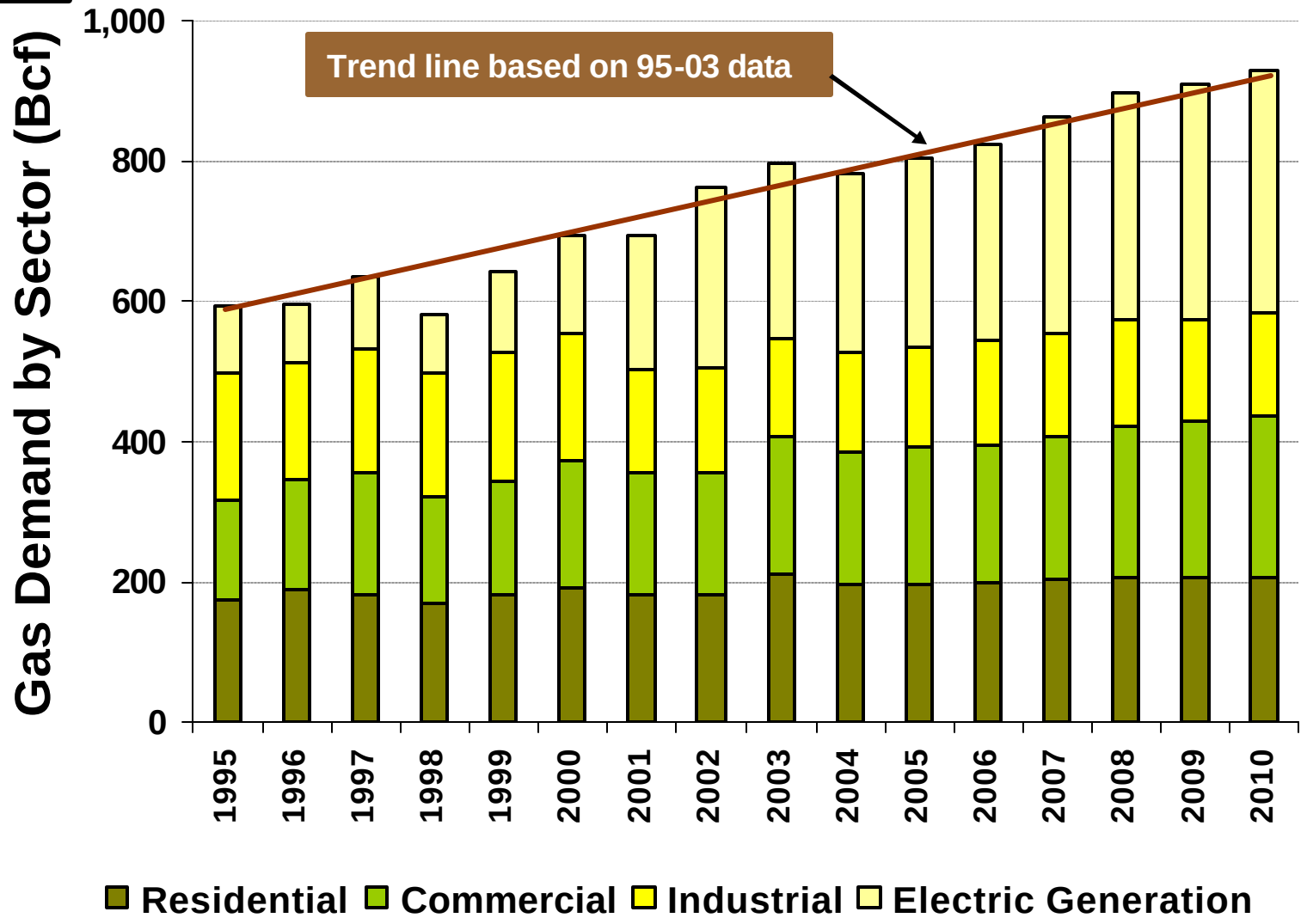
Figure 7.



Source: Energy and Environmental Analysis, Inc.

Gas for electric generation is the only sector projected to have an appreciable increase in demand through 2010. Projected gas use is generally consistent with a linear regression of 1995 through 2003 data.

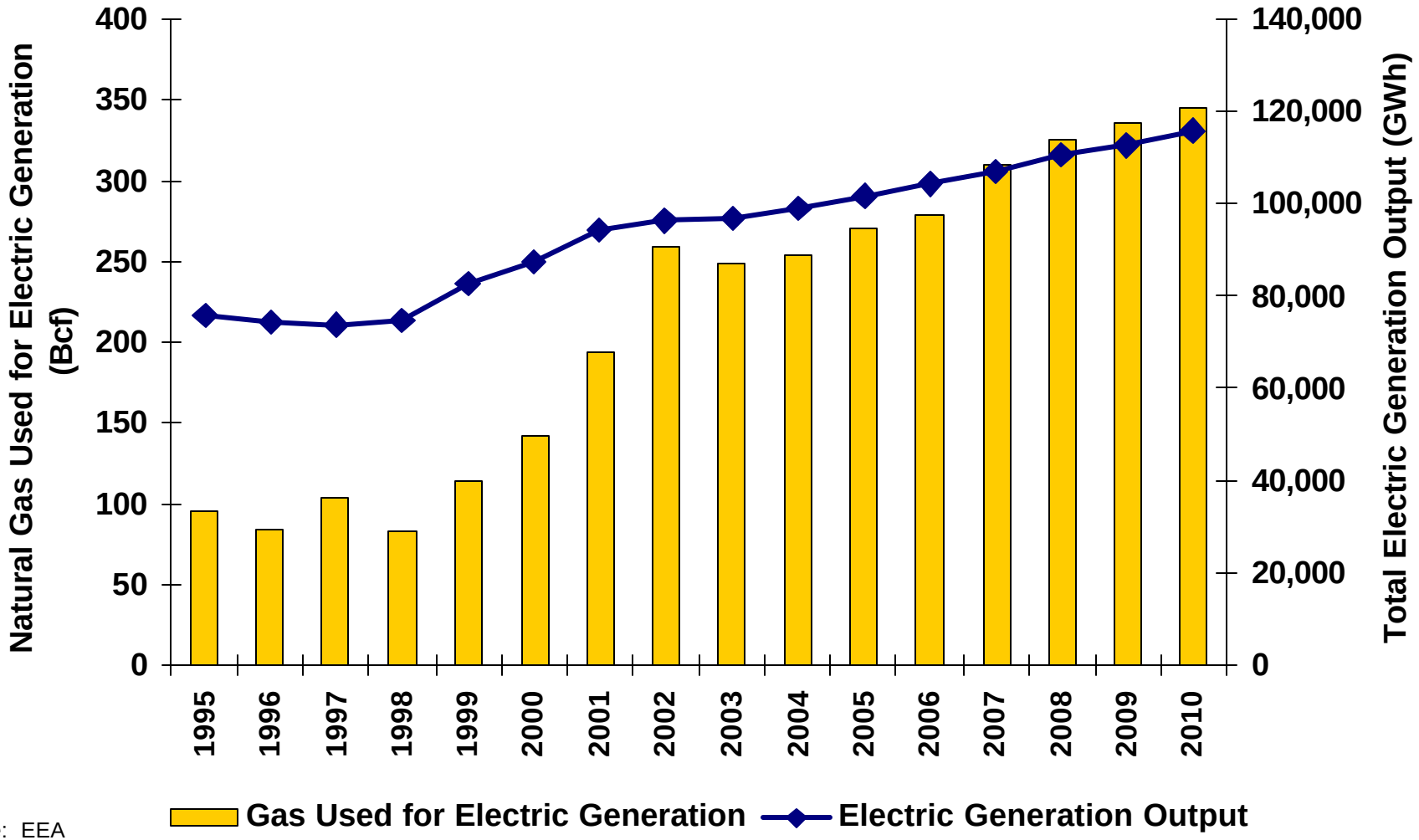
Figure 8.



Source: EIA , EEA , and FERC Staff

Between 1998 and 2003 gas-fired generation replaced some existing electric generation and met new demand. Projected gas use to meet increased electric demand is tempered by increased efficiencies in new gas-fired generation, yet gas-fired generation will continue to replace other types of electric generation.

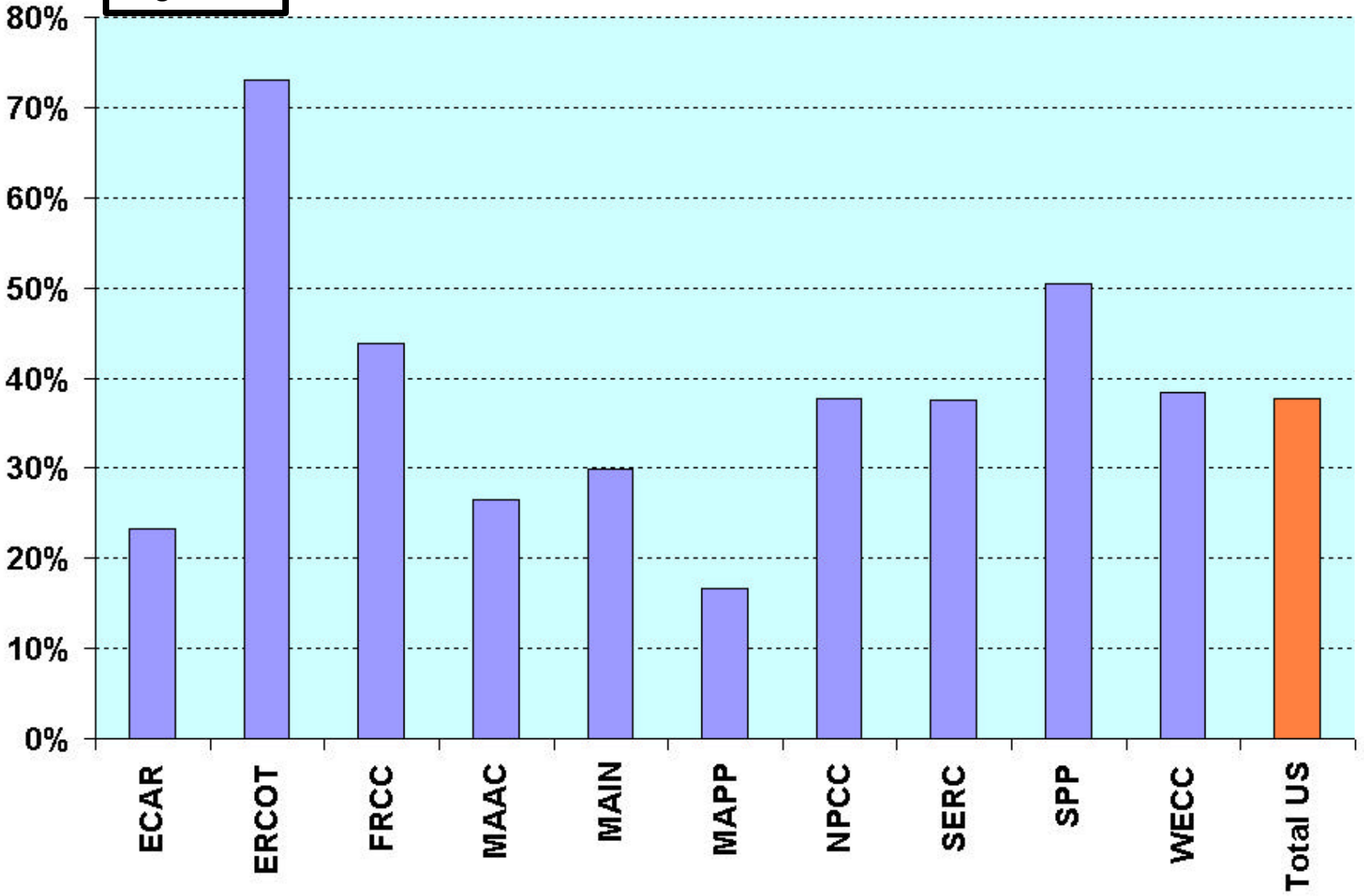
Figure 9.



Source: EEA

Percentage of Gas-fired to Total Electric Generation Capacity, by NERC Regions

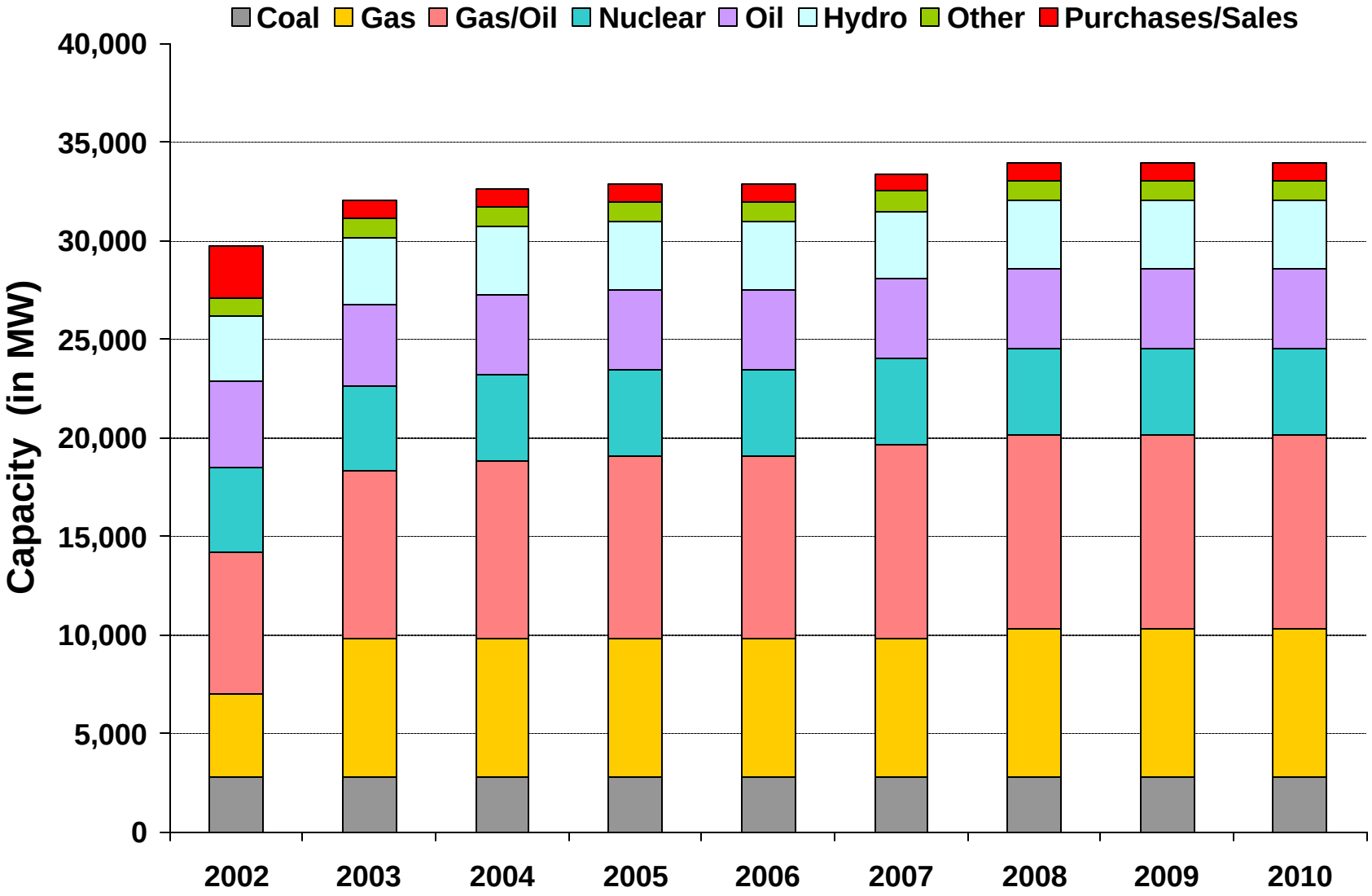
Figure 10.



Source: RDI PowerDat, October 2003 release.

New England (NEPOOL) Summer Electric Generation Capacity by Fuel Type, August 2002- 2012

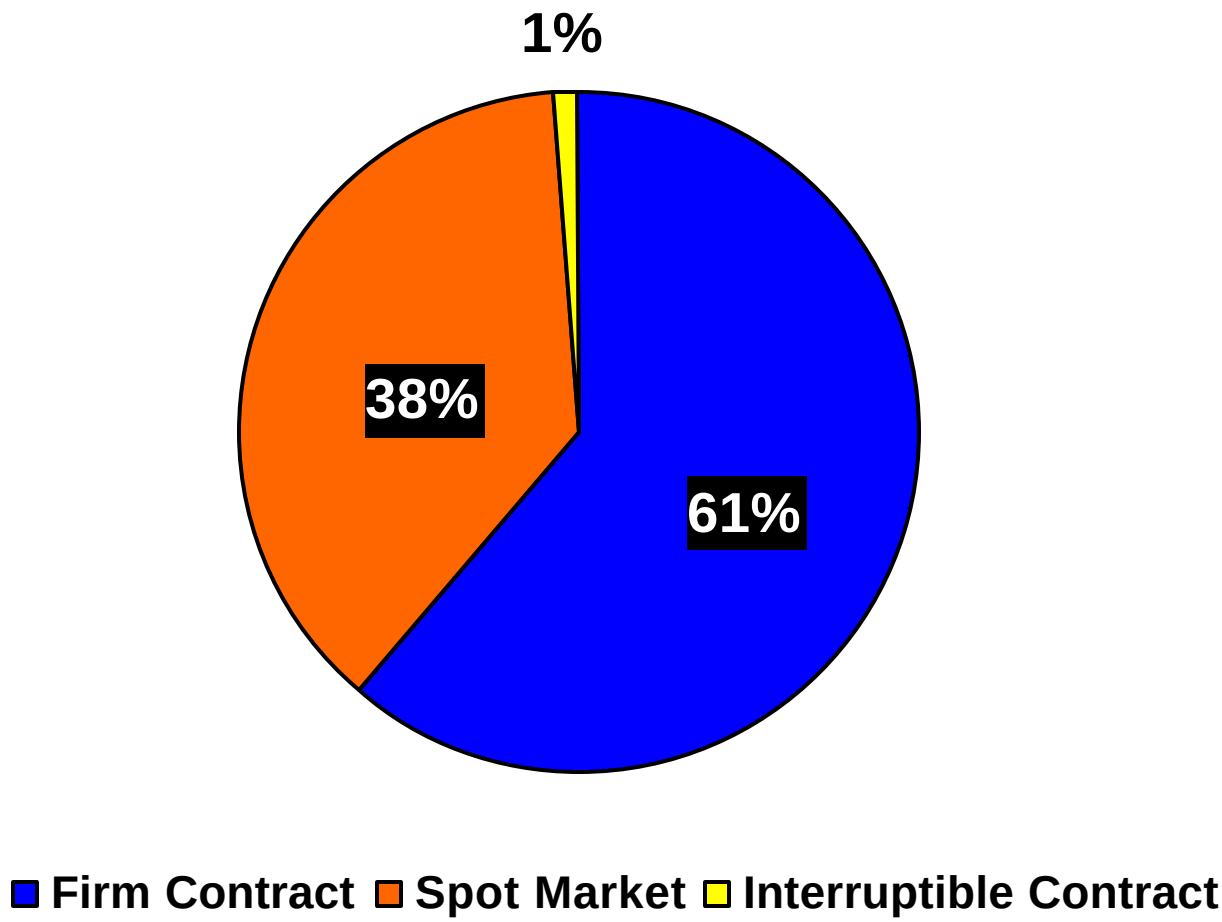
Figure 11.



Source: NEPOOL CELT Report, April 2003, ISO-NE.

Figure 12.

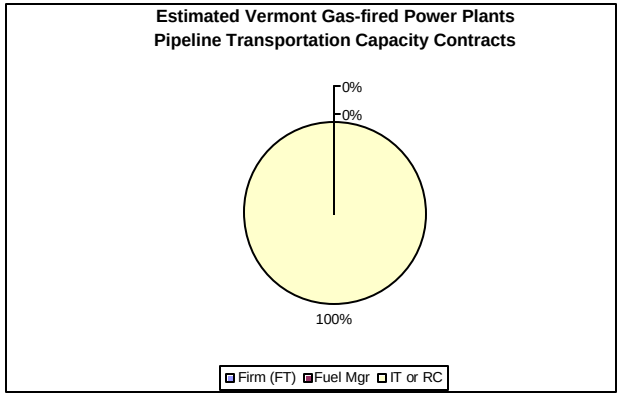
2002 New England Natural Gas Sales for Electric Generation

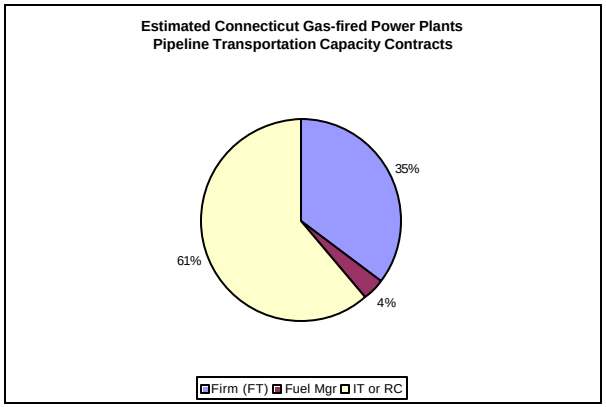


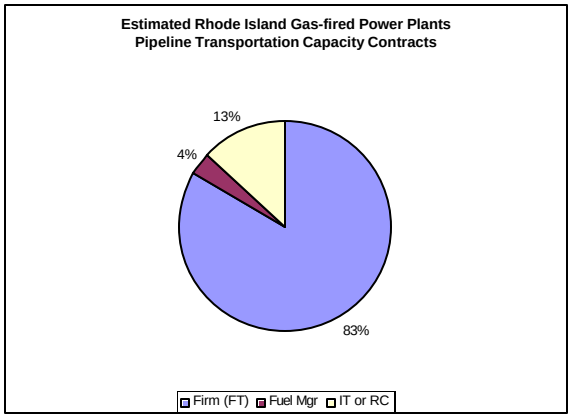
Source: EIA Form 423 and FERC Form 423.

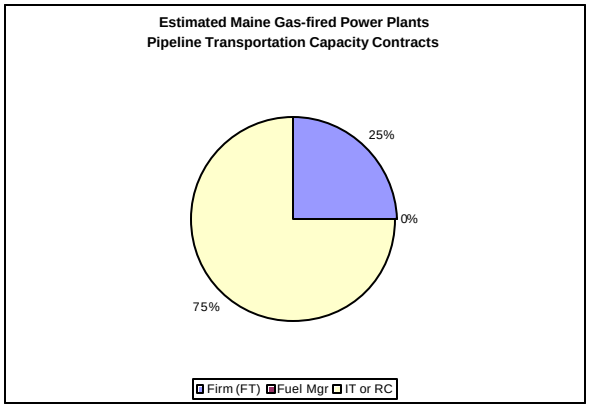
Figure 13.

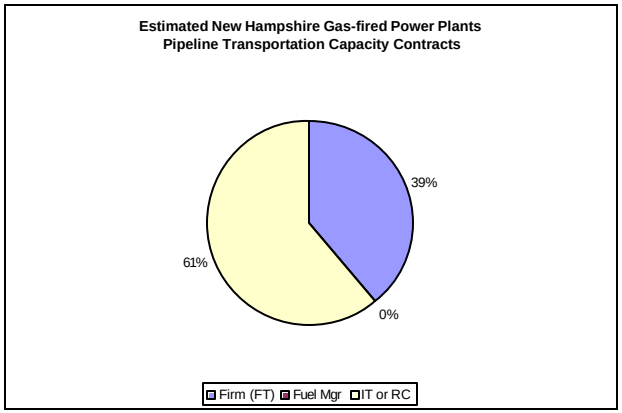
Transportation Contract Type by State and Region

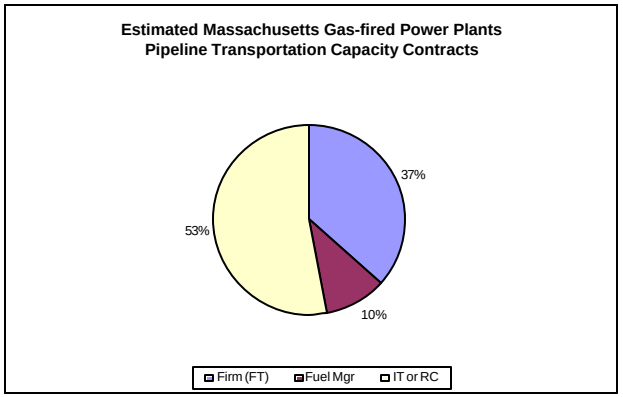


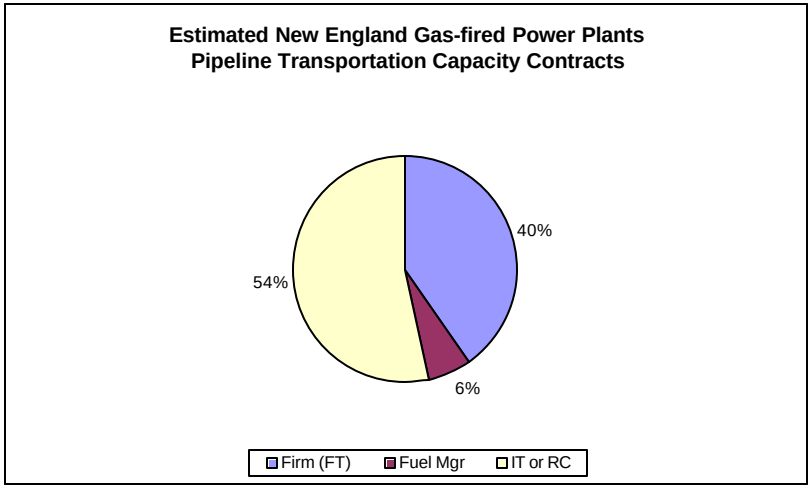












Source Merrimack Energy

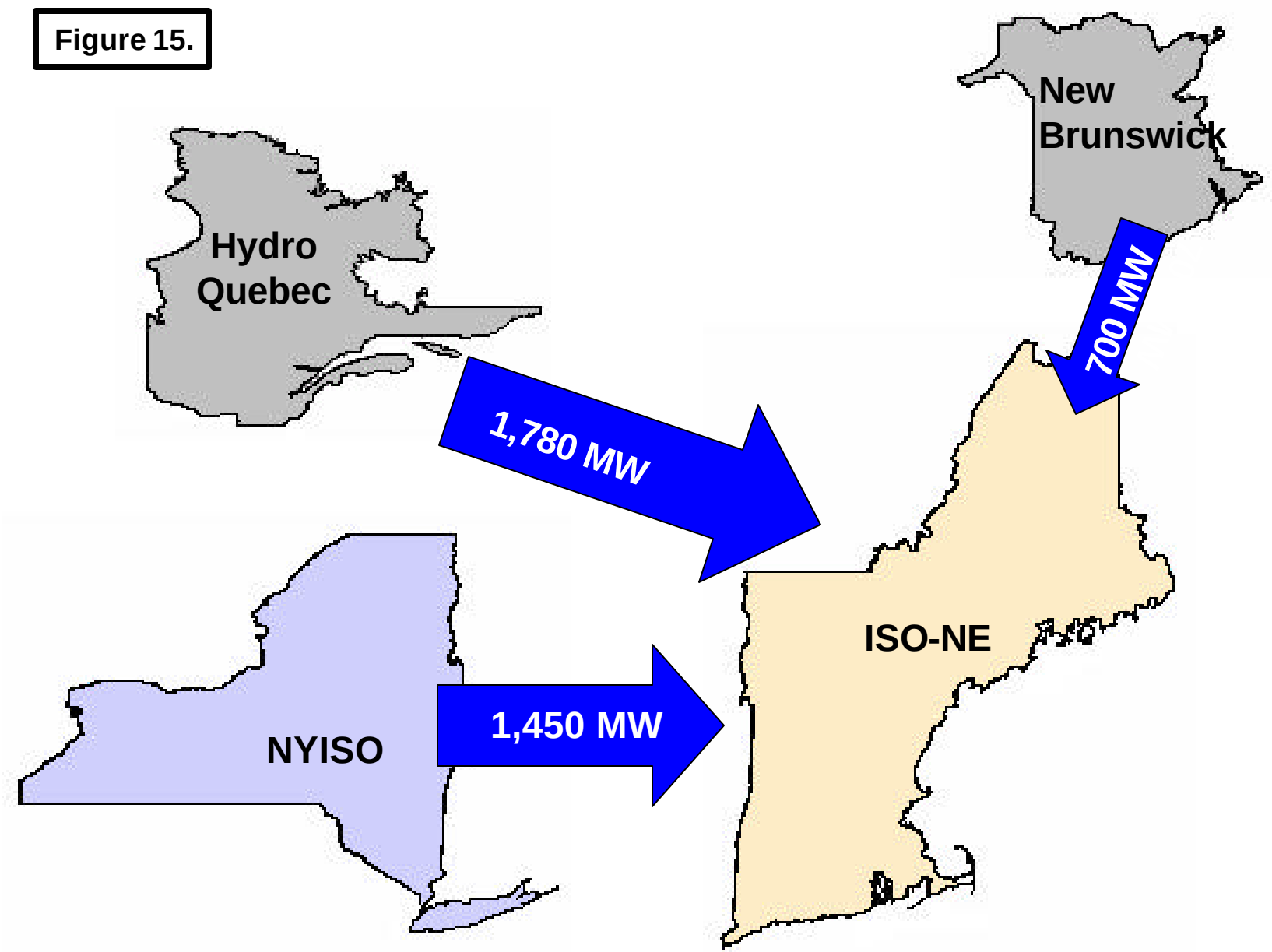
Adequate electric generation capacity currently exists to meet peak demands with the loss of all gas-only electric generation with interruptible contracts

Figure 14.

	Base	*Loss of all gas-only electric generation with interruptible contracts*	*Loss of all gas-only electric generation*	*"Historical" 2000 curtailment*
Percent of Gas Only Generation Available	100%	40%	0%	65%
January Year	2004	2004	2004	2000
Operable Capacity Margin	5,725	1,225	-1,775	504

NERC Estimated 2002-2003 Winter Electric Transfer Capabilities (MW)

Figure 15.



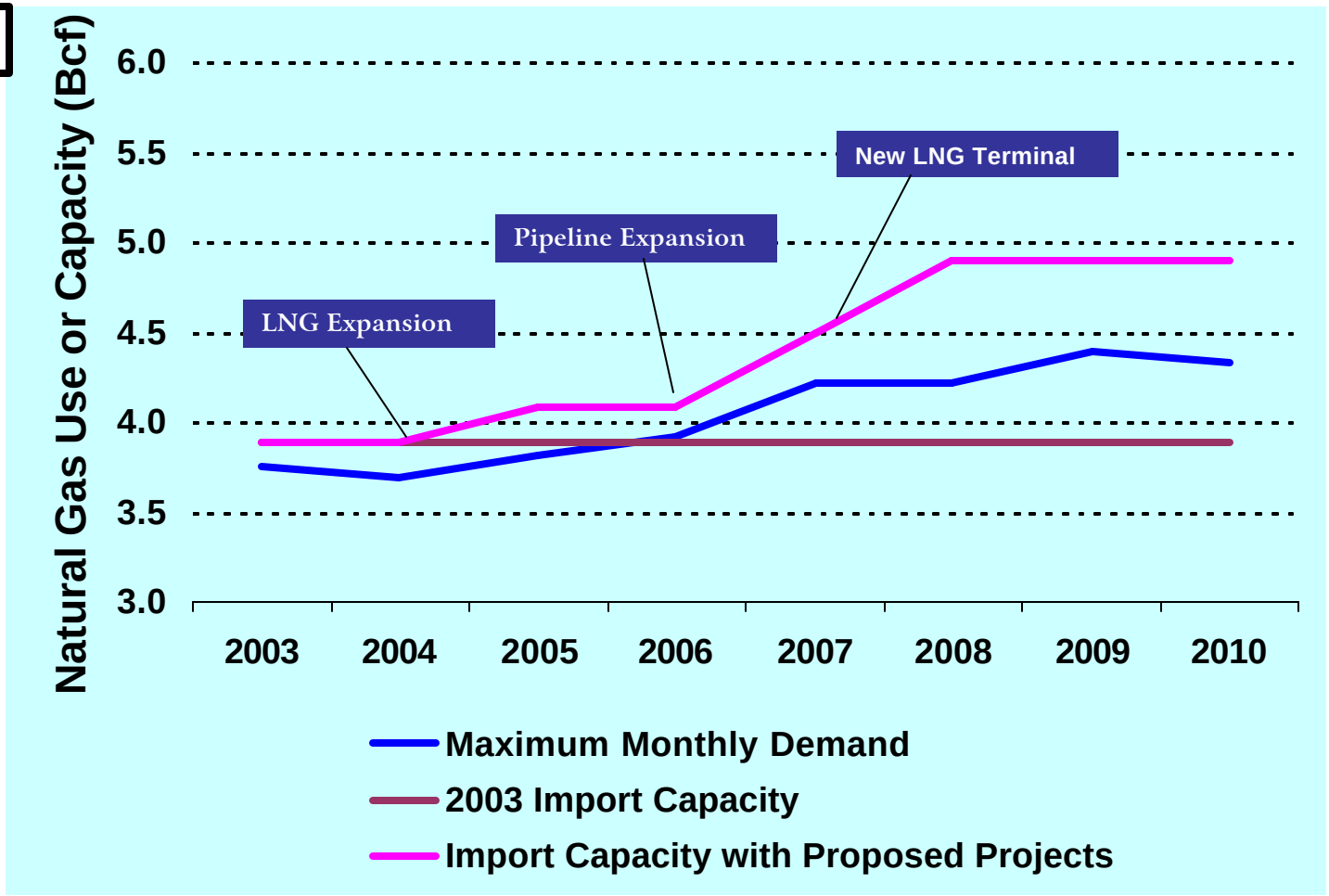
Source: NERC's 2002-2003 Winter Assessment: Reliability of the Bulk Electricity Supply in North America.

NYISO Operating Study Winter 2002-2003

Projected peak month natural gas use can be met with the existing import capacity through 2005.

Proposed additions* would provide adequate capacity through 2010.

Figure 16.



* Certificated unconstructed projects or projects with pending applications.

Use = Demand + Exports + Storage

Source: EEA, NGA, FERC

Figure 17

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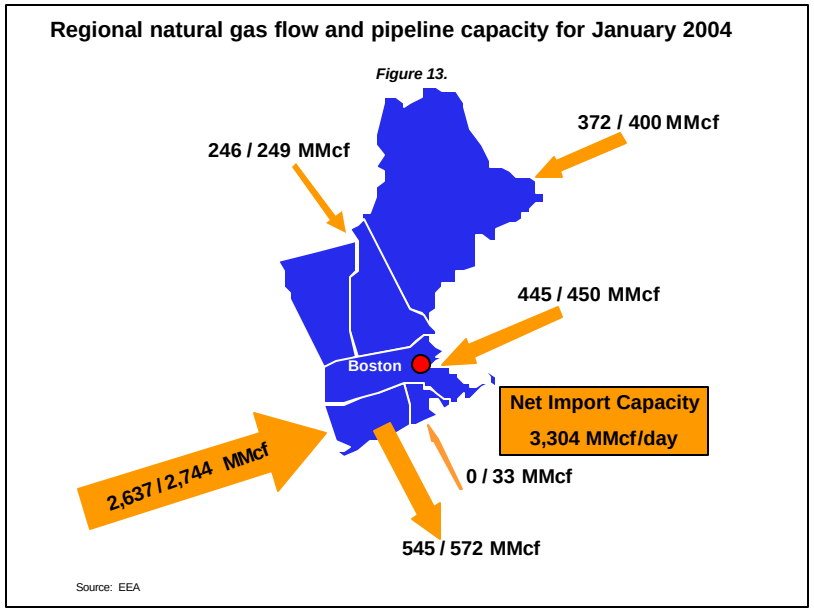
Regional natural gas flow and pipeline capacity for January 2004, 2007 and 2010.



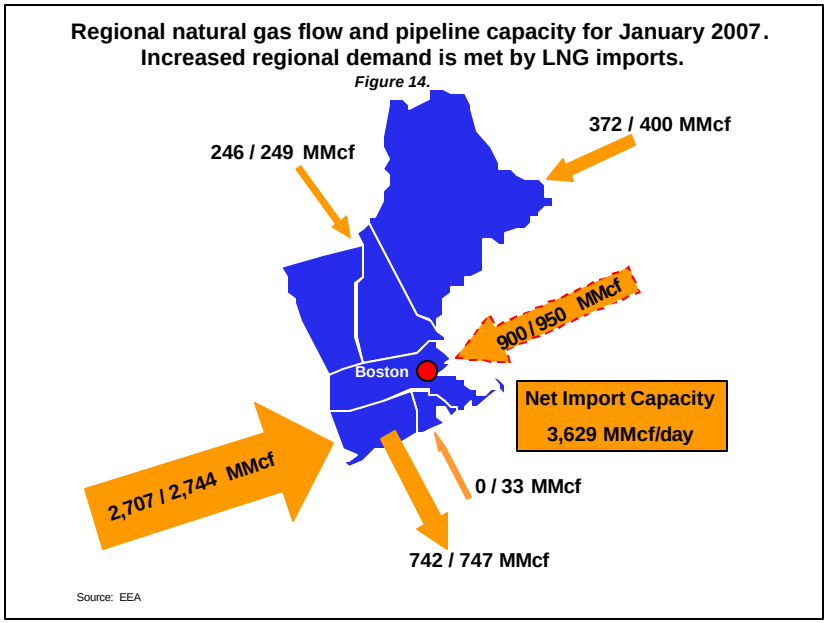
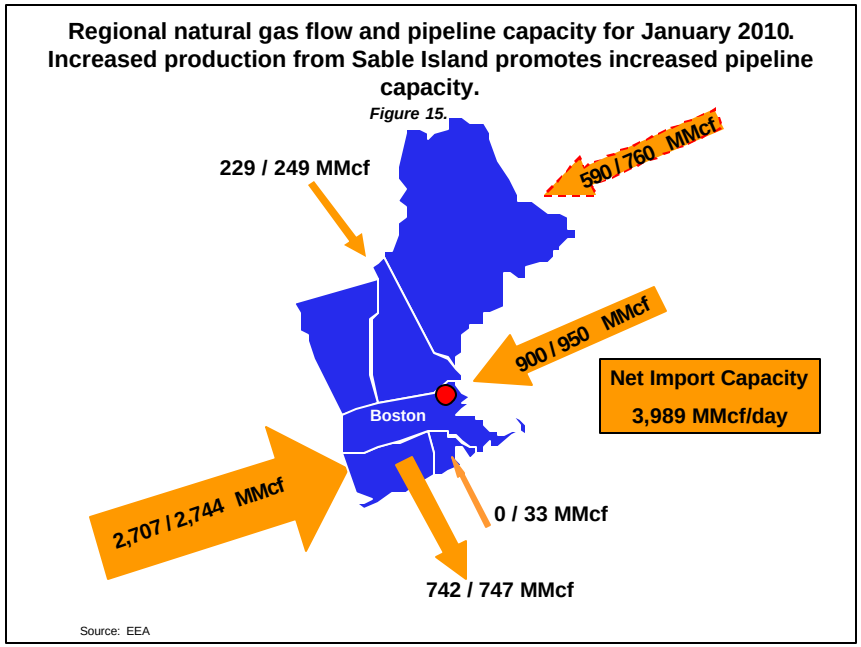


Figure 18.



Source: EEA

Figure 19.

CONCLUSIONS

- Infrastructure in New England has been adequate to meet demand of customers with firm capacity contracts.

- Little buffer exists in the system to meet extended cold periods in the peak winter months of December through February.

- Little redundancy or interconnectivity in the pipeline system make it particularly vulnerable should any component fail. In the event of a prolonged outage, isolated entities may not be able to depend on alternative sources to provide gas service.

- Recently constructed efficient gas-fired electric generation will help to moderate increased gas demand while meeting New England's electric demand.

- Proposed pipeline and LNG projects should maintain the status quo.

- Based on the design of the New England's pipeline infrastructure, peak shaving storage facilities located in the vicinity of high demand areas would provide the greatest short and mid-term system benefits.

- As supply areas in eastern Canada are further developed or additional LNG terminals are constructed, additional natural gas pipelines will be built to supply the New York City area. Interconnection of these new onshore pipelines with New England's existing pipelines and LNG facilities would be a long-term solution, thereby increasing the gas pipeline infrastructure to meet New England's long-term natural gas supply needs.