

Competitive Wholesale Markets & the Cape Region

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Commissioner

Massachusetts Division of Energy Resources

MTC Stakeholder Meeting

October 31, 2002

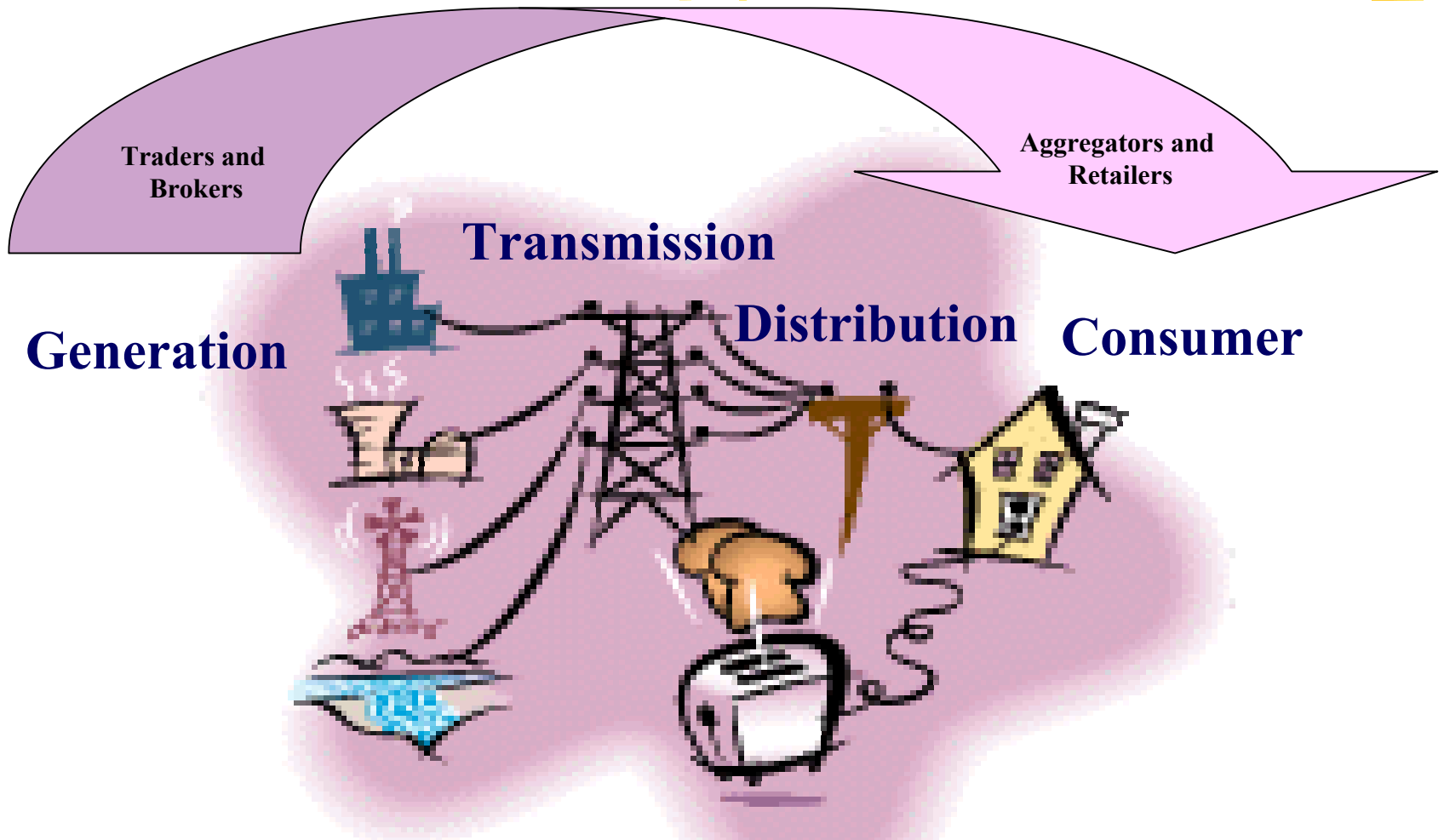


Goals of Electric Industry Restructuring

- **Generators may sell to any buyer**
- **Customers may buy from any generator**
- **Fair competition among all generators**
- **An efficient transmission system**

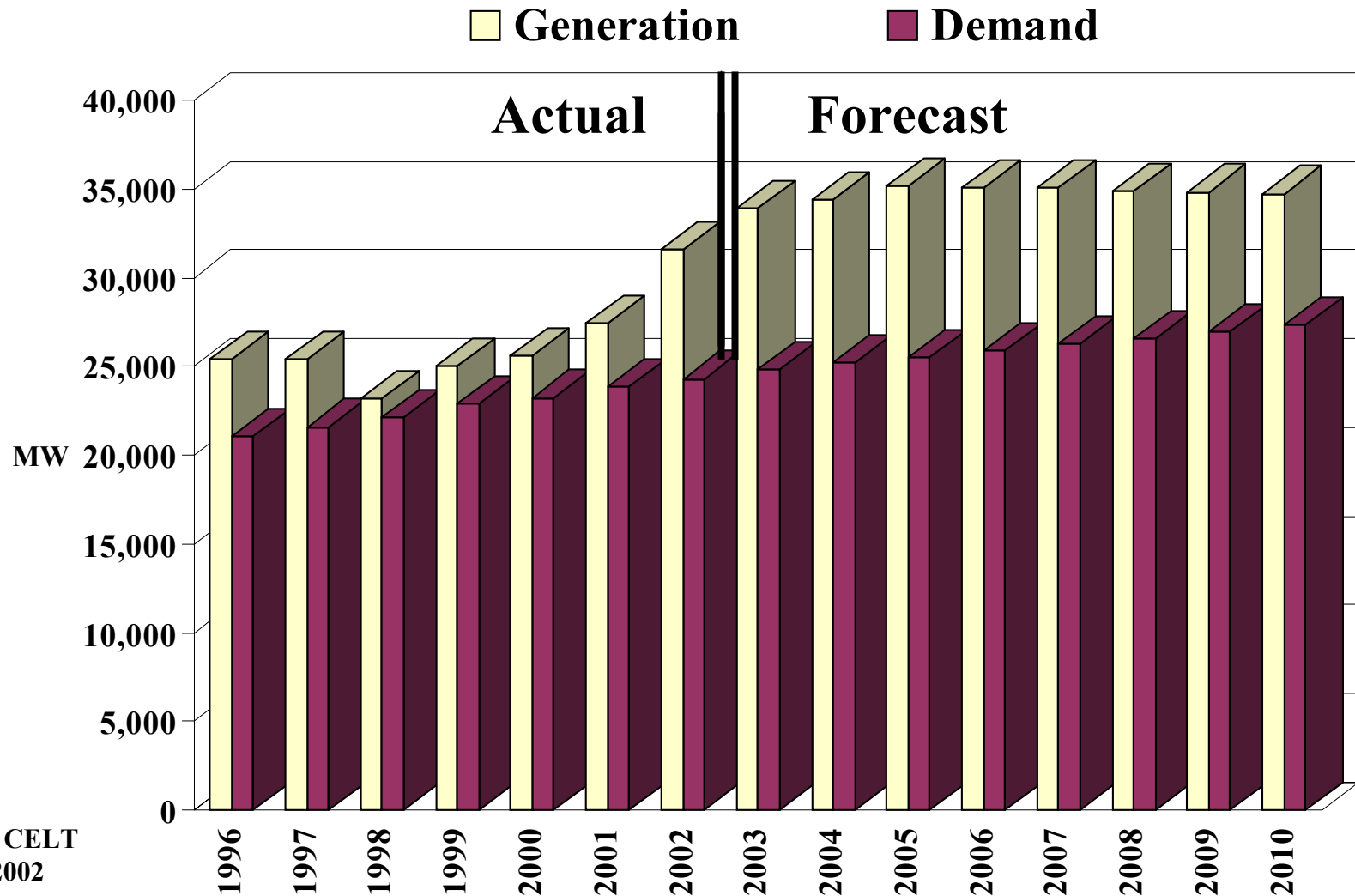


A New Market Structure





Electric Capacity and Demand: New England 1996-2010

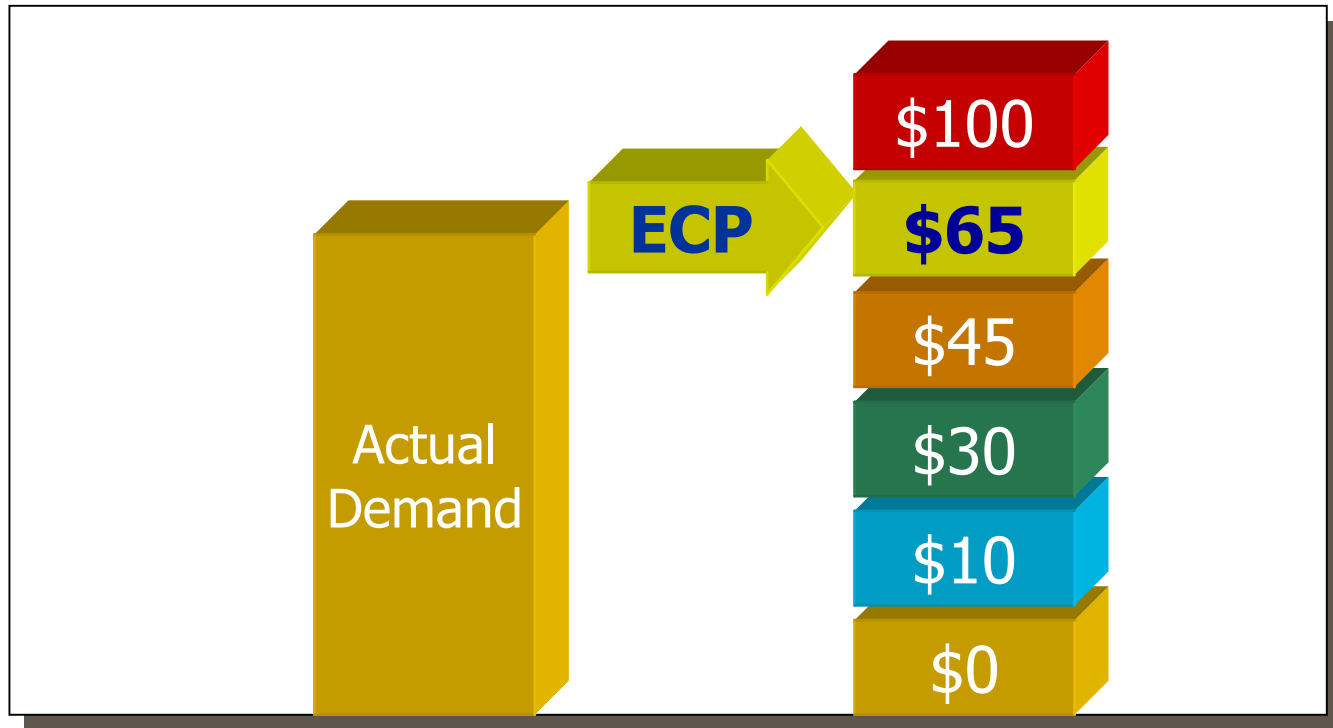


Source: CELT
Report 2002



Actual Demand Sets Hourly Clearing Price

Demand and generation (\$ / MWh)

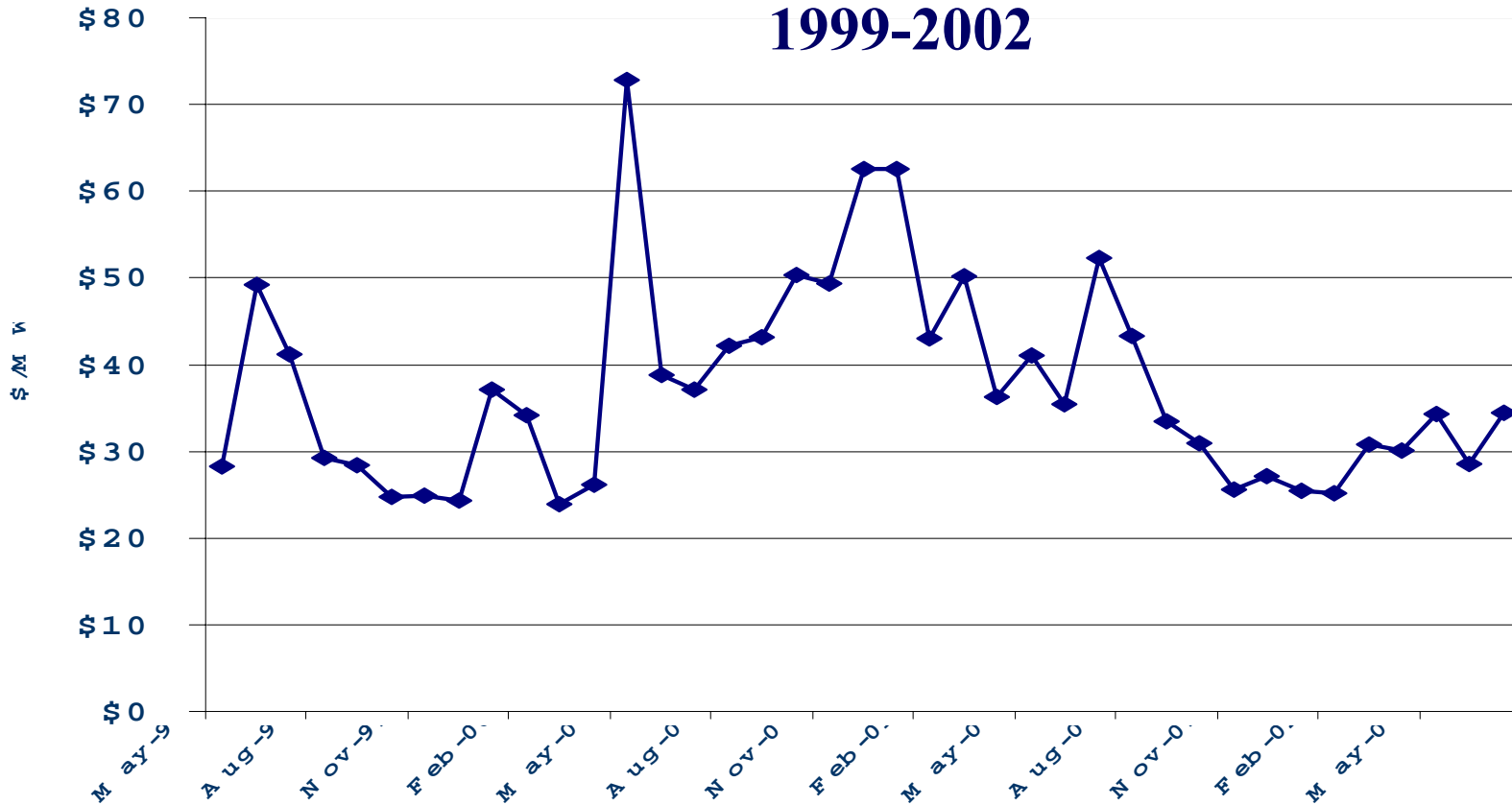


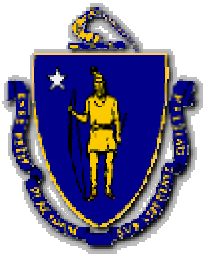
Source: ISO-NE



Spot Market Power Prices

Monthly Energy Clearing Prices in New England 1999-2002

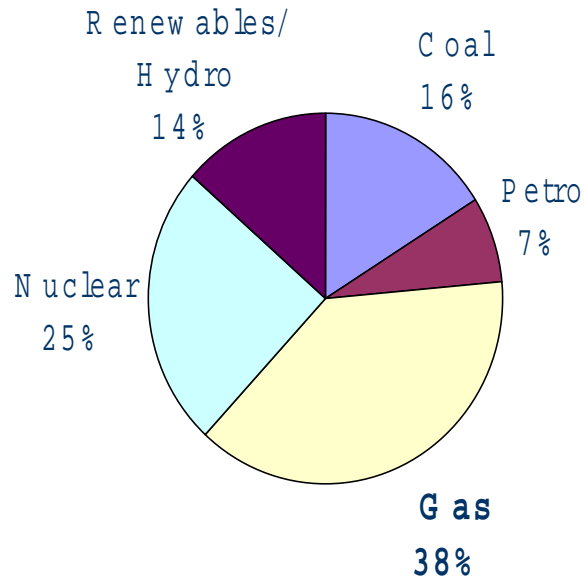




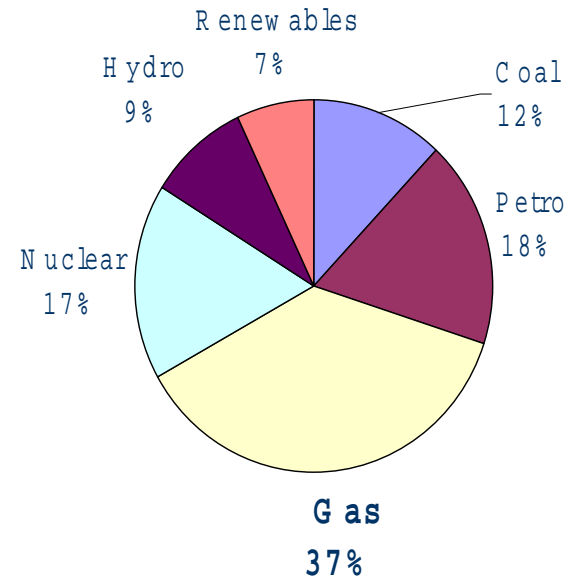
Projected Use of Fuels to Generate Power in 2005

**Nuclear and Oil Use Varies with Fuel Prices,
Gas Use Increases Regardless**

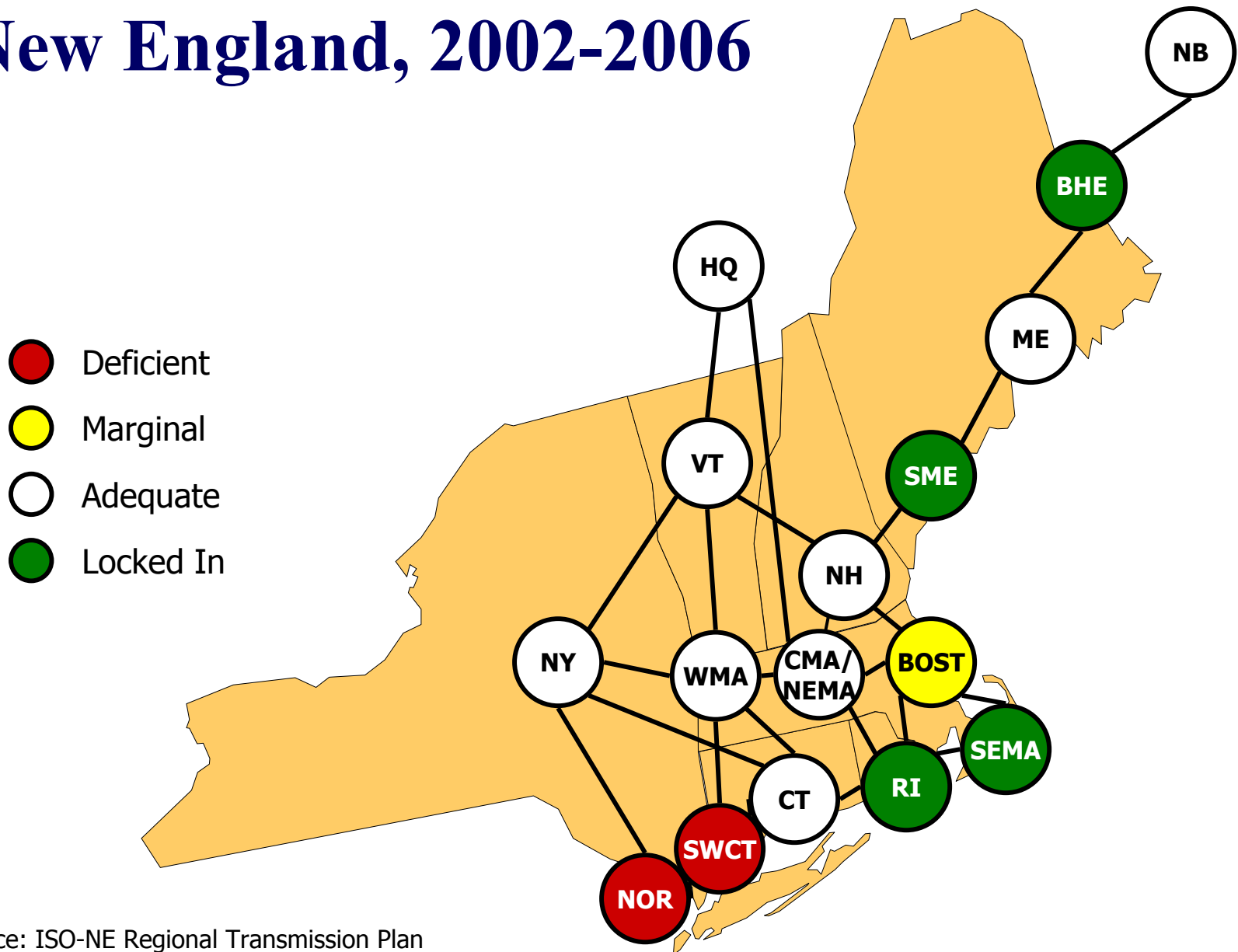
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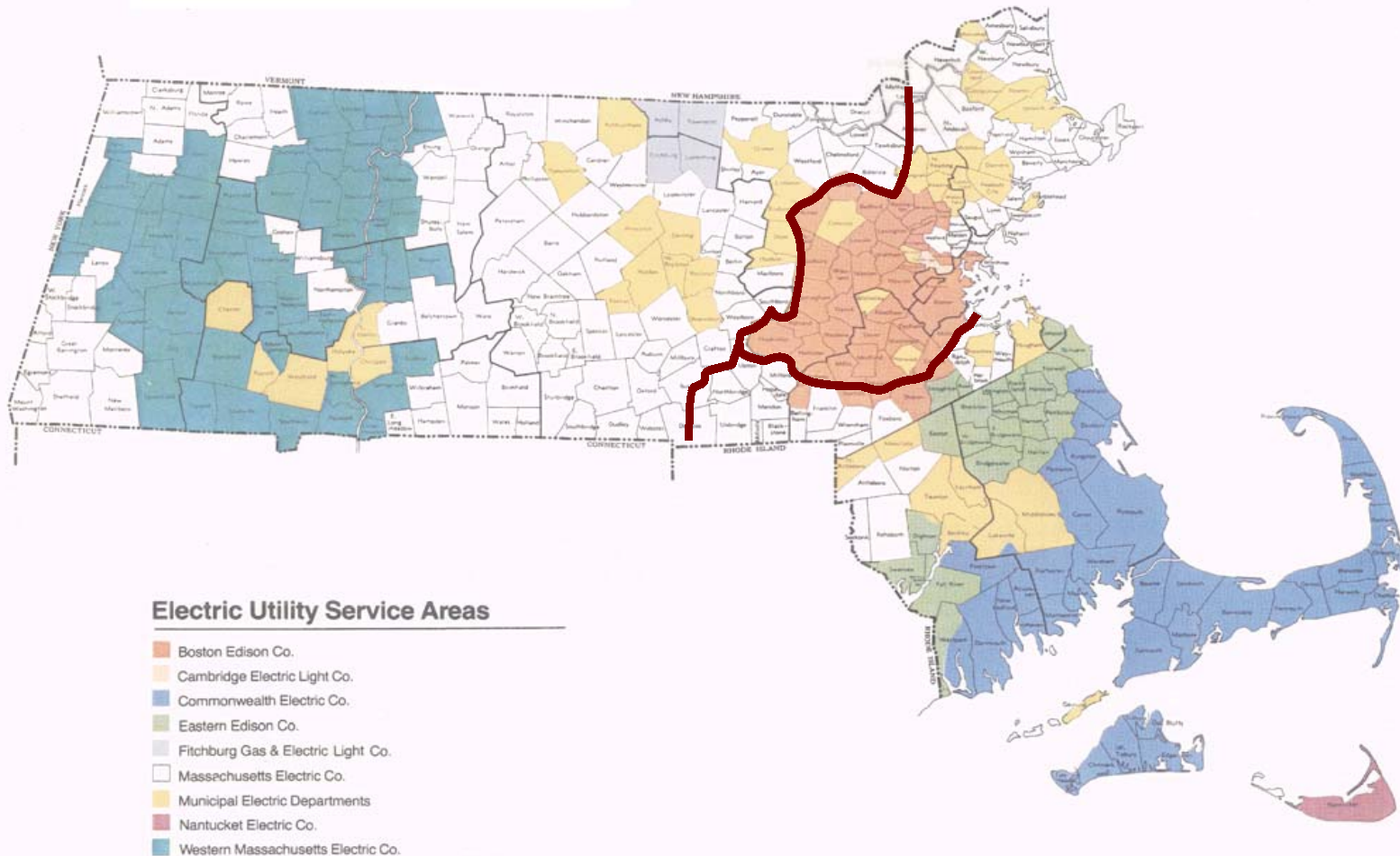
Transmission and Supply Outlook: New England, 2002-2006



Source: ISO-NE Regional Transmission Plan



3 LMP Zones in MA





Current SEMA Power Capabilities

Plant Name	MA County	Net Capability -- MW		Fuel Type
		Summer	Winter	
Brayton Diesels 1-4	Bristol	7.64	7.55	Distillate Fuel Oil
Brayton Point 1	Bristol	243.51	255.00	Bituminous Coal
Brayton Point 2	Bristol	240.00	254.82	Bituminous Coal
Brayton Point 3	Bristol	612.00	633.00	Bituminous Coal
Brayton Point 4	Bristol	435.00	445.52	Residual Fuel Oil
Cleary 8/9/9A	Bristol	131.00	136.00	Residual Fuel Oil
GRS-Fall River US	Bristol	0.00	3.50	Municipal Solid Waste
Dighton Power 1	Bristol	150.47	188.10	Natural Gas
Somerset 6	Bristol	105.60	108.25	Bituminous Coal
Somerset Jet 2	Bristol	18.30	23.00	Jet Fuel

Source: ISO-NE, CELT Report, 2002

continued



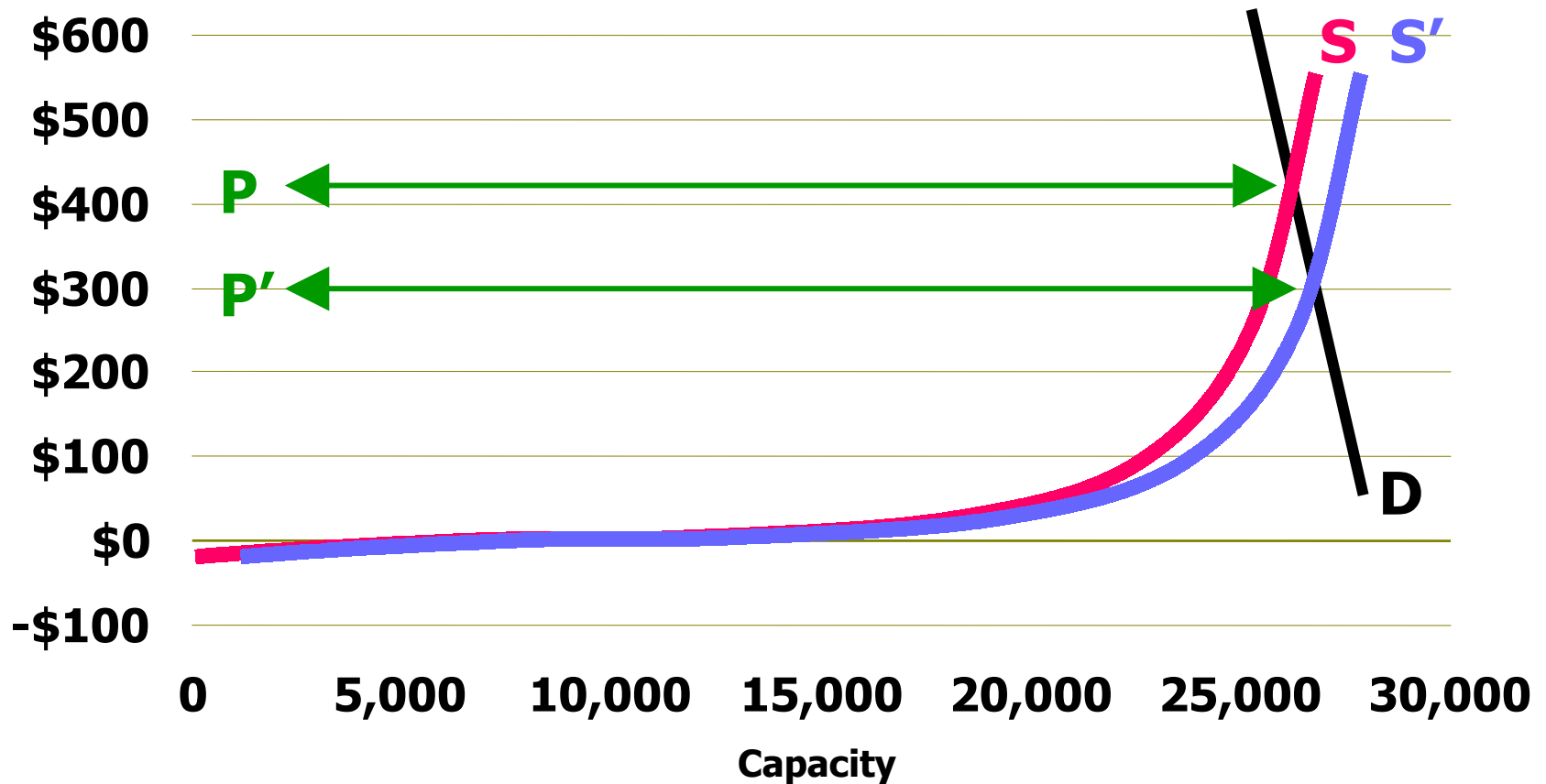
Current SEMA Power Capabilities

Plant Name	MA County	Net Capability -- MW		Fuel____
		Summer	Winter	Type
Canal	Barnstable	1111.67	1128.00	Residual Fuel Oil
Oak Bluffs	Dukes	8.00	8.25	Distillate Fuel Oil
West Tisbury	Dukes	5.50	5.50	Distillate Fuel Oil
Potter 2 CC	Norfolk	78.06	96.06	Natural Gas
Potter Diesel 1	Norfolk	2.25	2.25	Distillate Fuel Oil
NEA Bellingham	Norfolk	129.33	160.62	Natural Gas
West Medway	Norfolk	110.8	173.65	Jet Fuel
Pilgrim	Plymouth	666.68	673.35	Nuclear
Attleboro Landfill -QF	Plymouth	1.37	1.37	Municipal Solid Waste
Total		4057.18	4303.79	

Source: ISO-NE, CELT Report, 2002



Shifting Electricity Supply Curve



Source: ISO-NE



Renewable Portfolio Standard (RPS)

- **Regulates the fuel “portfolio” of an electric supplier**
 - must include a minimum percentage of renewable fuels
- **All retail sellers must comply**
 - utilities selling Standard Offer and Default Service
 - competitive suppliers and
- **Minimum required renewable use increases each year**
 - Begins in 2003 at 1% of all sales
 - increases to 4% in 2009
 - increases may continue



Only Certain Plants and Fuels Are Eligible for the RPS

- **To be eligible, power plants must**
 - have begun operation after December 1997
 - or qualify for a “vintage” waiver
- **To be eligible, fuel must be**
 - Methane gas from a landfill
 - Biomass, such as wood or organic waste, that burns cleanly
 - Wind
 - Ocean thermal, wave or tidal power
 - Solar
 - Fuel cells that utilize renewable fuels
- **Not eligible: hydro and waste-to-energy plants**



Projected Demand for New Renewables Under RPS

Renewable Generation Needed to Achieve RPS Standards				
Year	Minimum Percentage of Total Sales	Estimated Gigawatt Hours (Gwhs)	Equivalent Capacity Required (MW) @ Two Capacity Factors	
			27%	85%
2003	1.0	518	219	70
2004	1.5	796	337	107
2005	2.0	1,089	460	146
2006	2.5	1,394	589	187
2007	3.0	1,709	723	230
2008	3.5	2,042	863	274
2009	4.0	2,386	1009	320
2010	+ 1% per year until sunset by DOER			



Projected RPS Compliance Costs for Consumers

	Typical Monthly Bill	2003 RPS @ 1% Premium + GIS = \$0.03 /kWh	2006 RPS @ 2.5% Premium + GIS = \$.06 c/kWh
Residential 500KWh @ \$.12	\$60	\$0.15	\$0.30
Commercial 20,000KWh @ \$.12	\$2,400	\$6.00	\$12.00



Renewable Fuels in New England's Future

- **Use of renewable fuels will continue to increase**
 - portfolio standards in MA, CT and more
 - environmental compliance costs for fossil units will increase
- **Benefits of increased use of renewable fuels**
 - maintains region's fuel diversity as fossil use decreases
 - reduces dependence on imported fuels
 - decreases pollution from fossil fuel use
 - hedges price volatility of natural gas