

ENERGY PLANNING ADVISORY BOARD
REPORT ON JUNE 23, 2006 STAKEHOLDER FORUM
September 15, 2006

1. INTRODUCTION

The Stakeholder Forum conducted on June 23, 2006, was an effort by the Energy Planning Advisory Board (EPAB or Board) to ascertain the current collective wisdom of a wide range of stakeholders concerning energy issues in New Hampshire. The Board reached out broadly for input that would assist in formulating a clear and comprehensive statement of the energy problems facing New Hampshire while also assembling recommendations that could address those problems. This Report catalogues the contributions of the various stakeholders.

2. EXECUTIVE SUMMARY

“The purpose of the forum is to identify key energy issues for Legislative and Executive action in order to combat in the present the effects of dramatic increases in energy costs and to develop for the future a state energy policy premised on the fundamental goals of security, affordability and sustainability.” (EPAB Announcement, June 1, 2006)

Forty diverse stakeholders and interested members of the public representing customers, a variety of public interest organizations including a number of environmental groups, natural gas and electric distribution utilities, competitive energy suppliers, electric transmission companies, the regional electric transmission system operator, energy trade associations, fuel companies, vendors of energy products and services, proponents of renewable energy, and others provided written and/or oral comments for the June 23, 2006 EPAB stakeholder forum.

As a general matter, the stakeholders were strikingly consistent in their description of the issues and problems confronting New Hampshire in the realm of energy policy. The chief observation pertained to the high cost and price of energy in its many forms and recognized that macroeconomic factors relating to the diminishing supply of fossil fuels, increasing demand in India and China, political unrest around the globe, and intermittent causes such as hurricanes, were the underlying drivers of the dramatic increases in energy costs. In addition, a large contingent of stakeholders expressed concern about the environmental effects associated with energy production. Finally, another subset of stakeholders identified as a major problem regulatory uncertainty in the electric industry with respect to the issue of whether New Hampshire should complete restructuring or pursue some other course. Those broad categories are further segmented within the report.

The Stakeholders were also consistent in identifying, at a high level, a number of proposed solutions to the problems they had identified. Specifically, the stakeholders propose that conservation, energy efficiency and demand response be encouraged, that increased consumer education be undertaken, and that fuel diversity and renewable energy be promoted. Within these broad categories of agreement, however, there were a variety of different emphases and some significant difference of opinion on the details. In addition to the general areas of agreement, there were some more particular recommendations made by groups of stakeholders. These areas include considering market structure change in the electric industry, paying attention to infrastructure development and siting issues, assisting low income citizens and addressing climate change.

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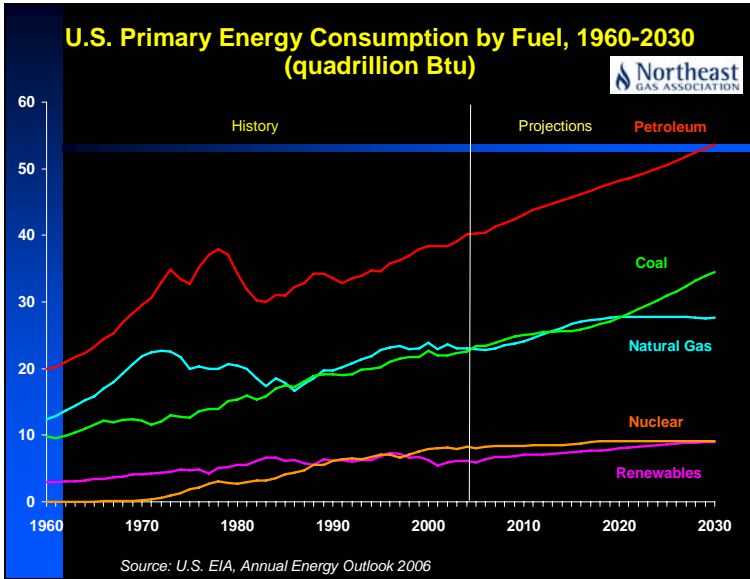
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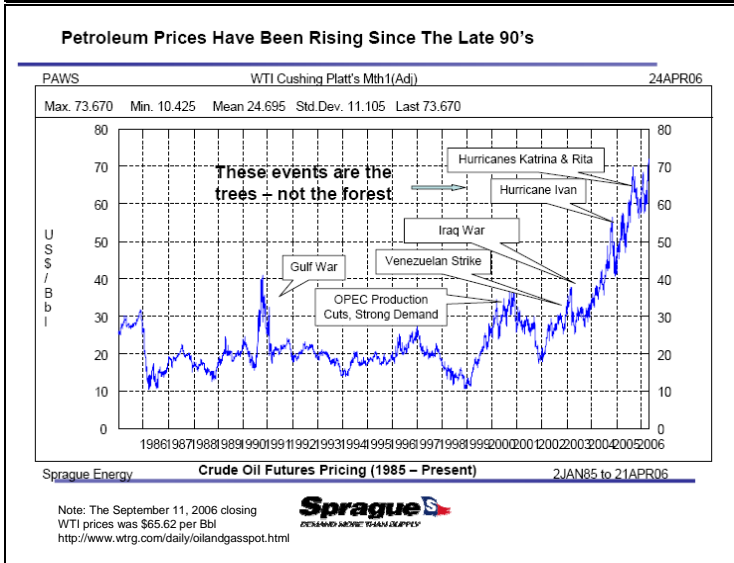
3. **SLIDES EXCERPTED FROM VARIOUS PRESENTATIONS**

On the following pages are slides excerpted from various presentations with comments added after the fact for this summary report. Three of the slides specifically about NH were prepared after the Forum by the PUC and added to these highlights at the request of the Board.

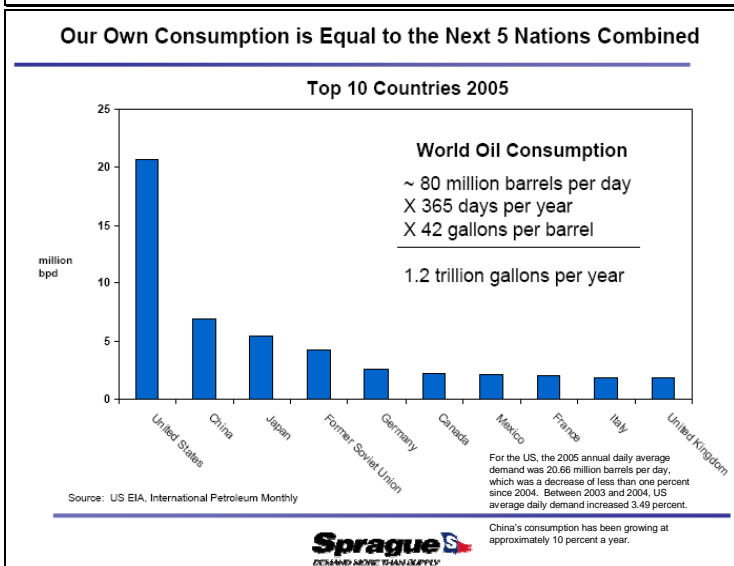
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Slides excerpted from various presentations, with comments from EPAB.



1. The Industrial and Transportation sectors continue to drive petroleum growth. Petroleum growth is expected to increase by 1.2%/year from 2003-2030.

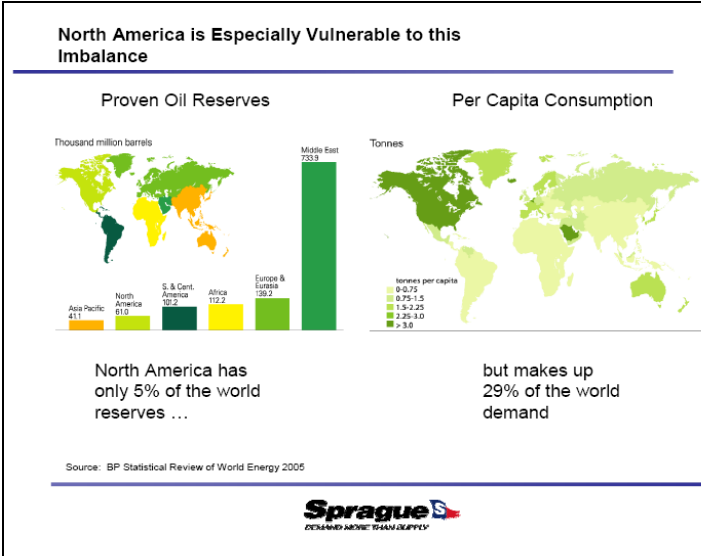


2. Note: The September 11, 2006 closing WTI prices was \$65.62 per Bbl
<http://www.wtrg.com/daily/oilandgas spot.html>

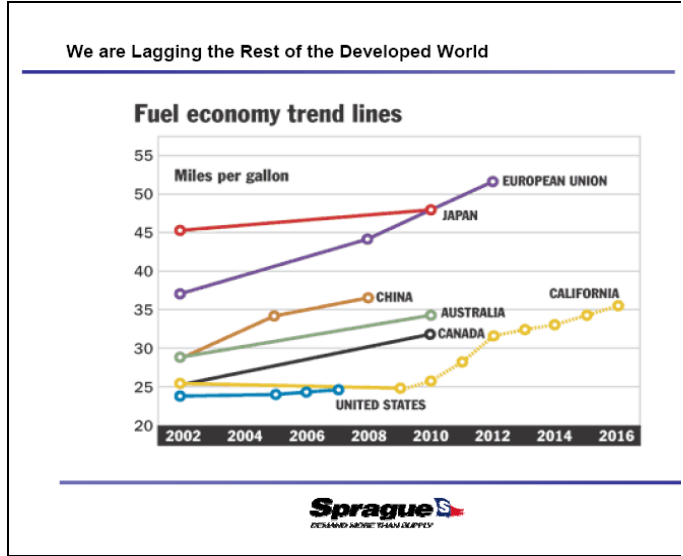


3. For the US, the 2005 annual daily average demand was 20.66 million barrels per day, which was a decrease of less than one percent since 2004. Between 2003 and 2004, US average daily demand increased 3.49 percent. US oil consumption is expected to increase over the 2003-2030 period by 1.2% per year. China's oil consumption has been growing at approximately 10% a year over the past few years and is expected to increase by 3.8% per year from 2003-2030; India's by 2.4% per year.

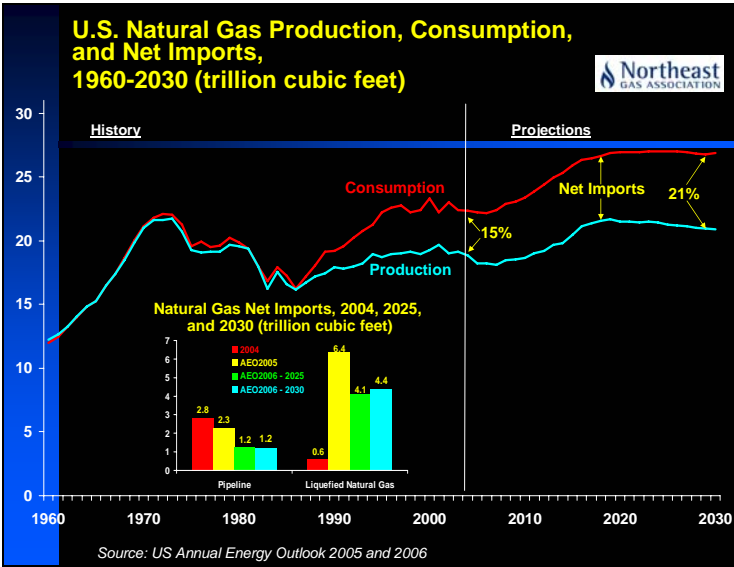
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Slides excerpted from various presentations, with comments from EPAB.



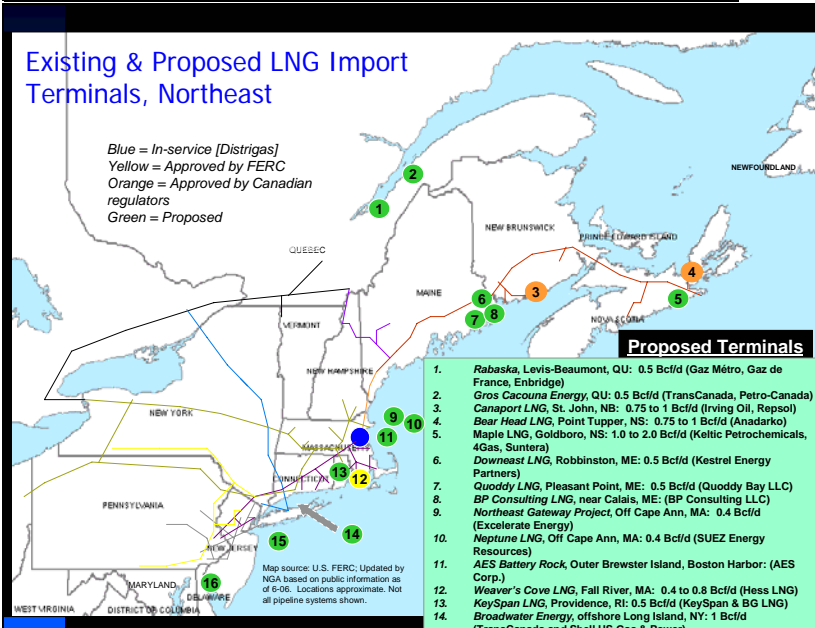
4.



5.



6.

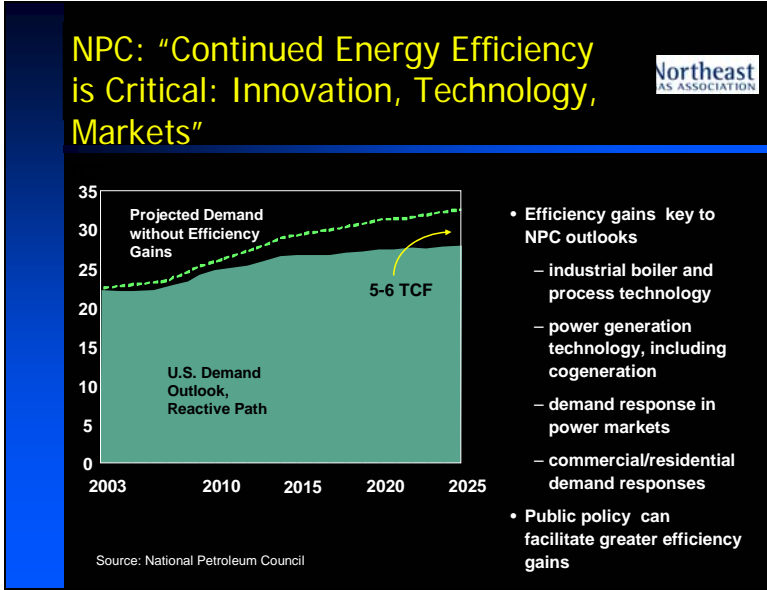


7. As shown on Slide 6, imported LNG is critical to fill the growing gap between natural gas consumption and production.

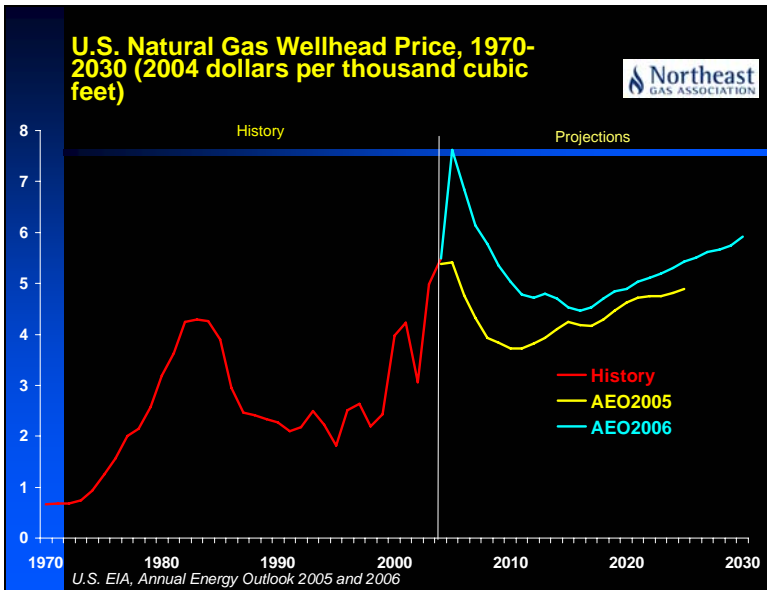
(Slide from Northeast Gas Association)

EPAB REPORT ON 6/23/06 STAKEHOLDER FORUM, 9/15/06
Slides excerpted from various presentations, with comments from EPAB.

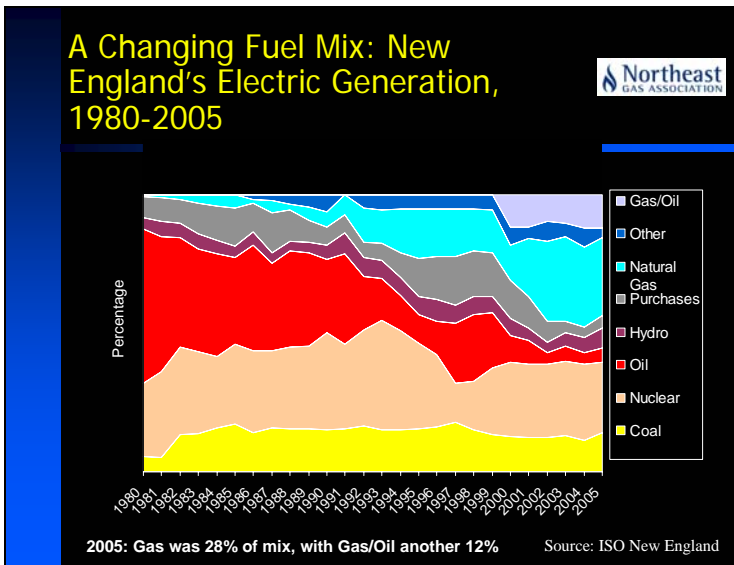
8.



9. The change in EIA forecast is driven primarily by new assessments of world demand, primarily due to growth in China, and supply uncertainties driven by current world developments, primarily in the Middle East

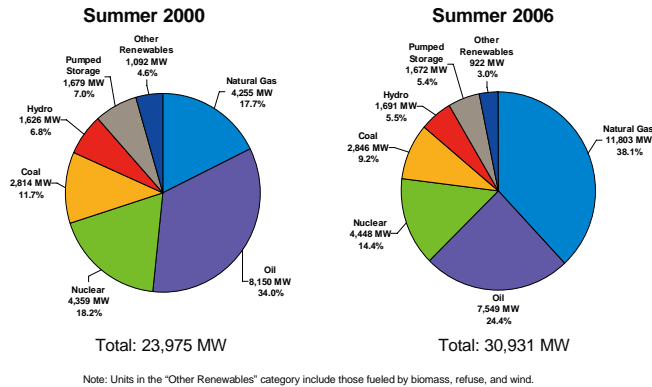


10. Oil as a source of electric generation has decreased significantly since 1980 replaced by natural gas—fired generation.



EPAB REPORT ON 6/23/06 STAKEHOLDER FORUM, 6/9/15/06
Slides excerpted from various presentations, with comments from EPAB.

**New England's Generation Mix:
 Nearly 40% Natural Gas-Fired**

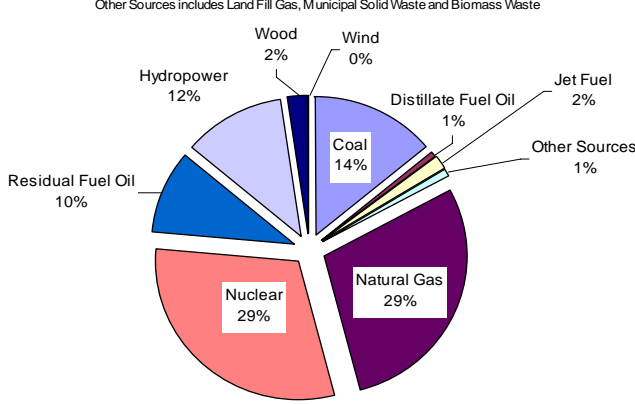


11. Electric restructuring brought a wave of new generation to New England, almost all of which is natural gas-fired. Most recently the trend has been to add dual fuel capability to gas fired units so they can burn oil during brief periods of gas supply shortages such as during very cold winter peak conditions, when the demand for gas for space heating is at or near peak.

The pie charts on generation mix in slides 11 and 12 represent total generation capacity (in MW or megawatts) and not proportionate output (in MWh or megawatt hours).

NH's Generation Mix:

Electric Generation Resources in NH as a Percent of Total, 2006

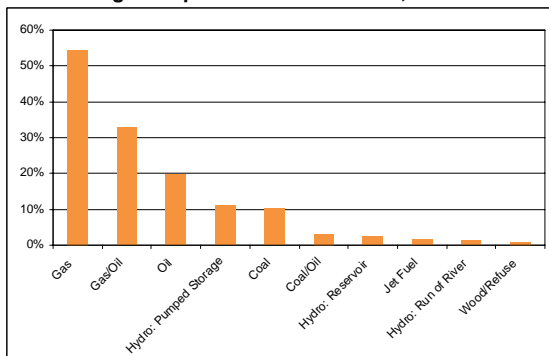


- 12.
- Ample and Well Diversified Generation
 - NH has approximately 4200 MW of Capacity
 - ~29% nuclear
 - ~29% natural gas-fired
 - ~14% coal-fired
 - ~12% hydro
 - ~13% dual fuel (oil and natural gas)
 - Remainder is mostly from biomass
 - >1200 MW of new natural gas-fired CC built in NH since 2000
 - Age of fossil/hydro is a concern

(Slide from NHPUC after Forum)

Gas Plants Set Price Most Frequently in New England

Marginal Input Fuels in Real-Time, 2005



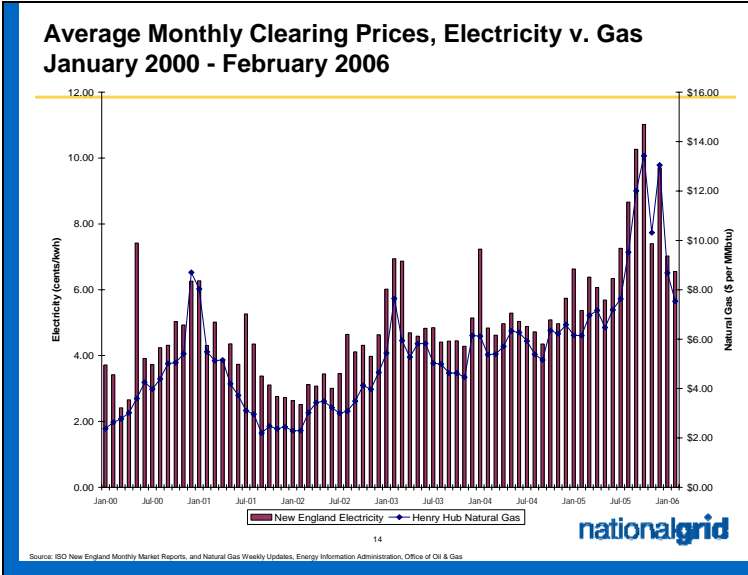
13. **Volatile and high priced fossil fuels are setting the hourly spot price in New England and are the key driver of high electricity costs**
 Generation units burning natural gas were price-setting 54% of time

Oil/gas units were on the margin 33% of the time
 Many of these units burn gas as the primary fuel
 Natural gas prices in 2005 were 44% higher than in 2004

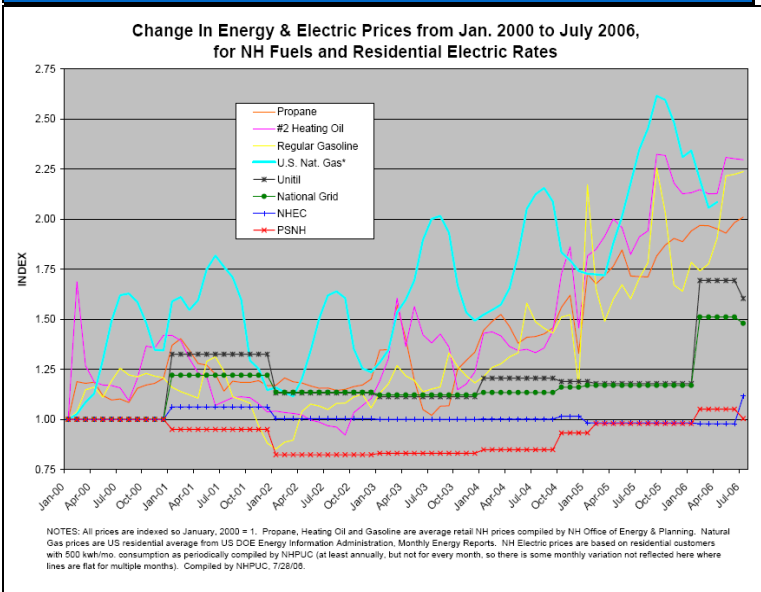
Oil prices in 2005 were 32% higher than in 2004
 Source: 2005 AMR

Note that the math in this graphic equals more than 100 – when there is price separation, we count the price intervals more than once.

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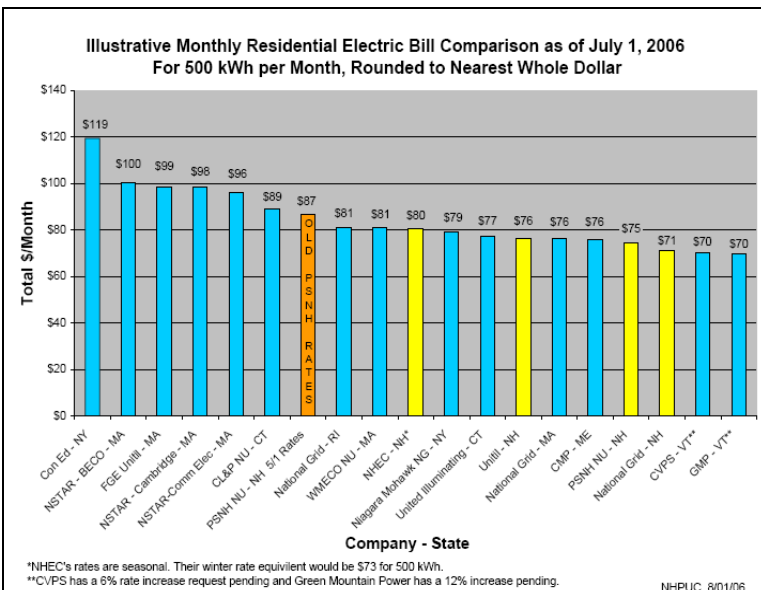


14. There is high correlation between natural gas prices and electricity prices



15. The key point is the upward trend in fossil fuel prices. Electric prices remained fairly flat due to long-term power contracts or rate settlements emanating from electric restructuring. As those long-term power contracts ended for National Grid and Until, the new contracts reflected the increased cost of fuel. NHEC's contract, which has a seasonal component, ends 12/31/06. PSNH supplies approximately 70% of its needs with its own resource portfolio and 30% is purchased, approximately, from the market.

(Slide from NHPUC after Forum)

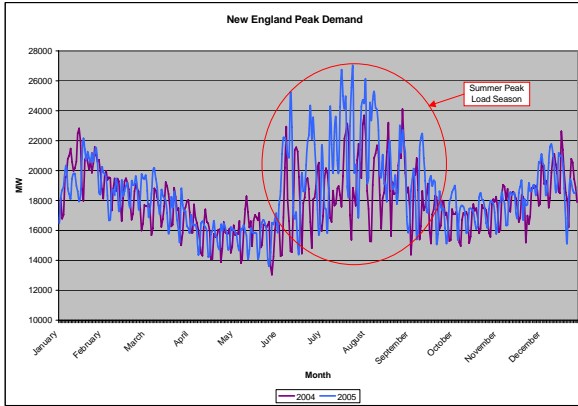


16. During the 1990s, NH electric rates were, on average, the highest in New England, and indeed in the whole nation. Now we are at the low end for New England & NY, although the Northeast remains the highest price region in the U.S.

(Slide from NHPUC after Forum)

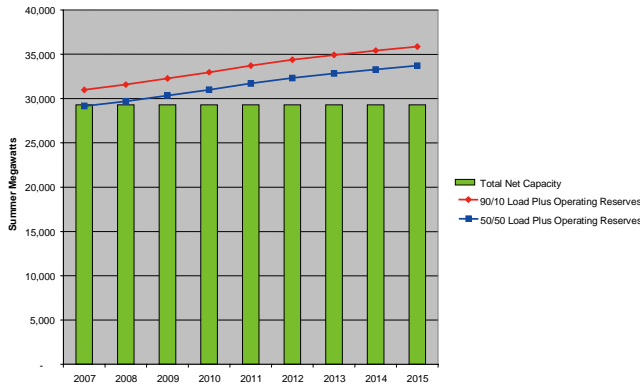
EPAB REPORT ON 6/23/06 STAKEHOLDER FORUM, 6/15/06
Slides excerpted from various presentations, with comments from EPAB.

Summer Peak Demand is Growing



17. On August 2nd, ISO-NE hit a new record peak demand. The peak exceeded 28,000 MW for the first time.

Adequate Supplies Dwindling, Regional Deficiency As Early As 2008



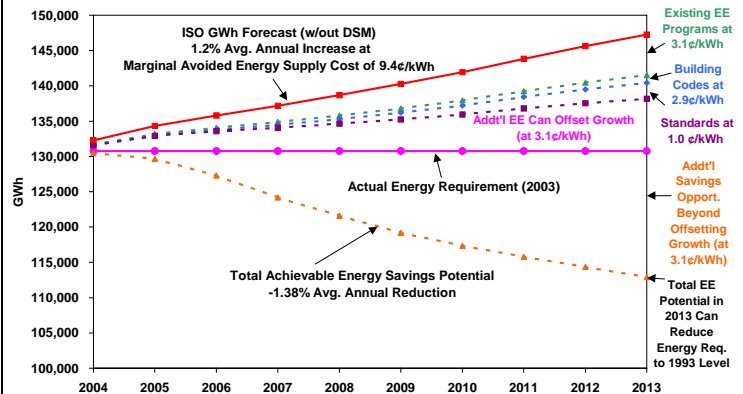
The results above do not reflect generation unit additions, retirements, or deactivations that could occur during the study period.

18. Depending on the forecast, New England could be capacity deficient as early as the summer of 2008. This graph show capacity and projected demand in peak MW and not MWH.

New England's Energy Action Agenda

- Implement new reserves and capacity market
- Achieve greater energy efficiency
 - Energy efficiency will be able to participate in Forward Capacity Market
 - Adopt dynamic retail rates to increase consumer responsiveness to wholesale prices
- Diversify the fuel mix
 - Market is providing signals for fuel diversity
 - Siting is a major obstacle to building lower cost resources

Chart 1. Existing and New EE Strategies Can More Than Offset ISO Forecasted Energy Requirements (GWH)



From NEEP written comments. Source: Optimal Energy, Inc. and Northeast Energy Efficiency Partnerships, Inc. November 2004. Updated May 2005. *The Economically Achievable Energy Efficiency Potential in New England*, available at www.neep.org.

19. This was the concluding slide in ISO New England's presentation

20. From NEEP's written comments.

4. BACKGROUND

On June 27, 2001, House Bill 443¹ was signed into law requiring the Governor's Office of Energy and Community Services to prepare a 10-year state energy plan (Energy Plan²), which was submitted on November 1, 2002. As noted in the Energy Plan, the planning effort had its origins in a study committee created by House Bill 1318 in 2000³, in which it was recognized that policymakers needed access to accurate energy information to help them with energy policy decisions. Among other things, the Energy Plan set forth a number of recommended action steps that were prioritized as short term, near term and long term. The first short-term recommendation was to establish an Energy Planning Advisory Board "to meet on a regular basis to discuss energy policy and planning issues at the state level." The recommendation was based on the express recognition of the productive dialogue that took place among stakeholders in producing the Energy Plan.

Senate Bill 443, approved on May 24, 2004⁴, established the Energy Planning Advisory Board to assist in the implementation of the Energy Plan. The primary duty of the Board is "to discuss energy policy and planning and develop strategic planning for the state's energy policies." In addition, the Board was required to report annually to the Governor, the Speaker of the House and the Senate President. The most recent report was submitted on June 6, 2006.⁵

At its meeting on December 19, 2005, the Board formed a subcommittee to develop a roundtable process that would include outside stakeholders and seek to coordinate with efforts underway in various legislative committees to address a wide range of energy issues. The subcommittee was charged with drafting a statement to guide the roundtable effort. The subcommittee prepared a memorandum which, among other things, acknowledged the dramatic increases in energy prices, observed the number of legislative committees looking at energy issues and posed the objective of integrating the Board's activities with the legislative committees. (See [Appendix A](#) which is hyperlinked here to the PUC website where it and all appendices are available.) To provide a substantive underpinning for such an integrated approach, the subcommittee proposed bringing together a diverse group of stakeholders to identify the key issues, working from the existing Energy Plan. The stakeholder forum approach was adopted at the Board's meeting on February 27, 2006. The Board determined at its May 15, 2006 meeting to hold a Stakeholder forum on June 23, 2006, and decided to focus on energy issues unrelated to transportation because transportation-related energy issues are so extensive that they merit a separate review.

On June 1, 2006, the Board announced that a Stakeholder Forum would be held on June 23, 2006 to "identify key energy issues for Legislative and Executive action in order to combat in the present the effects of dramatic increases in energy costs and to develop for the future a state energy policy premised on the fundamental goals of security, affordability and sustainability." The announcement stressed that the Forum would focus on collecting concrete recommendations. (See [Appendix B](#).) The announcement also indicated that a facilitated discussion would be held among the Board members on June 29, 2006, and that a report on the Stakeholder Forum would be made to the Governor, the Speaker of the House and the Senate President.

¹ Chapter 121, Laws of 2001.

² Available at nh.gov/oep/programs/energy/StateEnergyPlan.htm

³ Chapter 58, Laws of 2000.

⁴ Chapter 164:2, Laws of 2004.

⁵ Available at nh.gov/oep/programs/energy/documents/EPABAnnualReport.pdf

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The June 23rd Stakeholder Forum began with background presentations by the New England Independent System Operator, the Northeast Gas Association and Sprague Energy who provided updates on prices, supply and demand in, respectively, the electric, natural gas and deliverable fuel sectors of the energy industry. Presentations were made by customers, local natural gas distribution companies, vendors of products and services, public interest organizations, electric distribution companies, merchant electric generators and renewable generators. (See [Appendix C](#), Forum Agenda with presenters and Forum Guidelines.)

The Facilitated Discussion, held on June 29th, was conducted by Charles Levesque from Innovative Natural Resources Solutions. In preparation for that session Mr. Levesque prepared a “Summary of Issues/Problems and Recommendations – Energy Planning Advisory Board, Stakeholder Forum Process,” dated 6/29/06. (See [Appendix D](#).) At the Facilitated Discussion, the Board worked to organize all the issues and recommendations raised at the Stakeholder Forum, including those provided through written submissions, and some suggestions by individual Board members, into topical categories. Mr. Levesque distilled the content developed during the facilitated discussion into a report: “Results of June 29, 2006 Meeting.” (See [Appendix E](#).)

At the July 17, 2006 EPAB meeting, the Board adopted an improved outline of issues and problems, and stakeholder recommendations, then sorted the information from Appendices D and E into the new outline which is presented below. The Board has not taken a position on the various stakeholder comments and recommendations. In a few instances, the suggested solutions include ideas offered by individual Board members at its June 29 meeting, which are sometimes identified as “synthesized suggestions” in Section 7 below. All of the commentary below is an attempt to summarize various stakeholder comments and should not be interpreted to represent positions of EPAB at this time. After consultation with the State Energy Policy Commission established by HB 1146 (Chapter 257, Laws of 2006), EPAB will consider possible next steps with regard to further review, development or adoption of various recommendations.

5. LIST OF STAKEHOLDERS WITH IDENTIFIERS AND DESCRIPTIONS

Stakeholders and individuals who provided written comments are listed below with their name providing a hot link to their comments (which can also be accessed through www.puc.nh.gov/EPAB%20Forum.htm). They are sorted alphabetically by their abbreviated identifier which is used in Sections 6 and 7 below. A number or numbers listed after the identifier provides additional hot links to attachments filed with comments. The brief description of each commentator is excerpted or paraphrased from their submission, from their website, or from information presented at the forum.

Name of Stakeholder or Commentator	Abbreviated Identifier	Brief Description
Andrew Duncan	AD	“Andrew Duncan received a Ph.D. in Environmental Behavior and Policy at the University of Michigan, and was a professor of Environmental Science at New England College in Henniker from 1997 to 2003. Since 2003 he has been employed by A+ Energy Services, an energy performance assessment and contracting company. ...”
Business & Industry Association of NH	BIA	NH’s “state chamber of commerce and leading business advocate. The BIA represents more than 400 members in a variety of industries ... [T]he BIA works to promote a healthy business climate and robust economic future for N[H]. ... BIA has a robust Energy & Regulated Utilities Committee, which concentrates on state energy policy ”

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Name of Stakeholder or Commentator	Abbreviated Identifier	Brief Description
Brown, Olson & Gould [Comments listed on PUC website under 'Wood-Fired Power Plants']	<u>BOG</u>	"During the last 20 years, our [law] firm has been involved in a wide variety of energy policy issues nationally and in New Hampshire. The firm represents a variety of renewable energy projects and facilities including the biomass generating stations in Bridgewater, Bethlehem, Tamworth and Springfield ... total[ing] approximately 65 MWs of capacity."
Constellation Energy Group	<u>CEG</u>	CEG is a group of companies affiliated with Baltimore Gas and Electric Company that provide wholesale supply of electric power such as through default service, as well as retail supply in 21 states including NH.
Campaign for Ratepayers Rights	<u>CRR</u>	CRR is a statewide non-profit organization founded in 1983 that studies many aspects of the electric utility industry.
Clean Water Action	<u>CWA</u> <u>1</u>	CWA is a non-profit membership based advocacy group with both a national office and NH office. With 5,000 NH members CWA "began its advocacy on behalf of climate action in 1998, in the context of so-called 'four-pollutant' legislation to clean up old fossil-fueled power plants ..."
UNH Cooperative Extension	<u>EXT</u>	The Cooperative Extension is a "public outreach arm of the University of New Hampshire ... whose only mission is education for informed problem-solving. Established by Congress in 1914 "as a unique three-way partnership between and among federal, state, and county governments."
GDS Associates	<u>GDS</u>	GDS "is a multi-service consulting and engineering firm [with] a staff of over 100 in five locations" [The] Northeast Region Office located in Manchester ... was opened in 1999 and currently has seven employees providing energy efficiency and renewable energy program design, cost effectiveness analysis, implementation evaluation and related services to electric and gas utilities and directly to residential, commercial, industrial and municipal customers throughout the region.
Granite State Hydropower Association	<u>GSHA</u> <u>1, 2, 3, 4, 5, 6</u>	GSHA is a volunteer association made up of owners and other individuals and organizations representing the small hydropower industry in New Hampshire. GSHA members include owners of approximately 50 small-scale hydroelectric projects (i.e., those less than 10 MW) located throughout New Hampshire. GSHA plants have a total installed electric capacity of approximately 50 megawatts and produce approximately 200 million kilowatt-hours of electricity each year.
Irving Oil Corp.	<u>IRV</u>	"Irving Oil is a family-owned and privately-held regional energy processing, transporting, and marketing company headquartered in Saint John, New Brunswick, Canada, with US marketing operations in Portsmouth, New Hampshire."
ISO NE	<u>ISO</u> <u>1</u>	ISO New England is a not-for-profit corporation regulated by the Federal Energy Regulatory Commission (FERC). As the Regional Transmission Organization for N.E. ISO operates independently of the companies doing business in the market and is responsible for real-time bulk power system reliability, administration and oversight of wholesale electricity markets, and regional system planning.
Jordan Institute	<u>JJ</u>	The JJ "is a ... non-profit organization that was conceived to improve NH's environmental quality of life defined as the intersection of a healthy environment, healthy people, and a healthy economy." "... working to change the way our built environment is designed and constructed, energy reduction is at the core of The Jordan Institute's mission. The [JJ] provides technical assistance and programs for commercial, residential, and school building owners."
KeySpan	<u>KS</u>	"KeySpan Corporation is the fifth largest distributor of natural gas in the United States and the largest in the Northeast, operating regulated gas utilities in New York, Massachusetts, and New Hampshire that serve 2.6 million customers. KeySpan NH serves 80,000 customers in 29 cities and towns throughout the central and southern part of the state including the City of Berlin."
Northeast Energy & Commerce Association	<u>NECA</u>	Founded in 1985 "NECA is New England's largest non-profit competitive power trade association. ... [Its] 300 members include[e] gas and electric utilities, power marketers, industrial users, electric generators, project developers, fuel and equipment suppliers, & service providers ..."

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Name of Stakeholder or Commentator	Abbreviated Identifier	Brief Description
Northeast Energy Efficiency Partnerships	<u>NEEP</u> <u>1</u>	“NEEP is a nonprofit organization founded in 1996 whose mission is to promote energy efficiency in homes, buildings and industry ... NEEP serves as a strategist, planner, facilitator, information and training resource, and project manager to help develop and implement regional programs for energy efficiency.”
NE Power Generators Association	<u>NEPGA</u> <u>1</u>	“NEPGA is the largest trade association representing competitive electric generating companies in New England. NEPGA’s member companies represent approximately 20,000 megawatts (MW) of generating capacity in the region. NEPGA’s mission is to promote sound energy policies which will further economic development, jobs, and balanced environmental policy.”
Nuclear Energy Study Group	<u>NESG</u> <u>1</u>	Represented by William Klapproth, NESG is “a small self-chosen ‘energy study group’ at Heritage Heights Retirement Community in Concord.”
NE Wood Pellet LLC	<u>NEWP</u>	Based in Jaffrey, NH, NEWP is “the largest manufacturer of wood pellet fuel in the northeastern US.”
National Grid	<u>NG</u> <u>1, 2, 3</u>	NG is an “international energy delivery company based in UK” operating “electric and gas distribution company[ies] in NY, MA, RI and NH” [formerly Granite State Electric in NH and New England Electric System], “with 3.3 million electric customers [and] 65,000 gas customers in NY.” In process of acquiring KeySpan Energy and New England Gas.
Northeast Gas Association	<u>NGA</u>	NGA is a “non-profit trade association [of] local gas utilities (LDCs) serving New England, New York, and part of New Jersey, [s]everal interstate pipeline companies, [an]LNG importer (Distrigas) and LNG trucking companies, and [o]ver 250 “associate member” companies.
New Hampshire Community Action Association (represented by Belknap-Merrimack CAP)	<u>NHCAA</u>	NHCAA “is comprised of the six Community Action Agencies that provide a broad range of services [for income eligible families and seniors] throughout all 10 counties and 222 cities and town in New Hampshire ... [including] Low Income Home Energy Assistance Program (Fuel Assistance) ... Weatherization ... [and NH’s] Electric Assistance Program ...”
NH Legal Assistance	<u>NHLA</u>	“NHLA is a non-profit legal services program. NHLA receives funding from multiple sources, such as the United Way, to provide legal services to low-income and elderly households in certain kinds of civil matters ... NHLA also represents individuals and groups before the Public Utilities Commission and legislature in matters involving electric and gas utilities and telecommunications providers.
NH Sierra Club	<u>NHSC</u>	NHSC is a chapter of the national non profit citizen-based advocacy Sierra Club, with an office in Concord, NH.
NH Sustainable Energy Association	<u>NHSEA</u>	NHSEA is NH’s “only statewide non-profit group focused specifically on renewable energy.” Their “mission is to educate the public about energy efficiencies, renewable energy generation, and green building and to advocate in the for sustainable energy policies.”
NH Timberland Owners Association	<u>NHTOA</u>	NHTOA’s “1400-plus members represent close to a million acres of New Hampshire timberland and the loggers, foresters, and mills that make timberland ownership economically viable.”
Northern Utilities	<u>NOU</u>	NOU is “[o]ne of the oldest natural gas utilities in New England, serving customers for over 150 years, [s]erving approximately 20,000 residential and 6,000 business customers in New Hampshire, [and o]perating in 21 communities from Pelham, Portsmouth to Rochester.”
Project Laundry List	<u>PLL</u> <u>1</u> <u>2</u>	PLL “is a non-profit ... organization which aims to demonstrate that personal choices can make a difference for the Earth and its people.” PLL “uses words, images, and advocacy to educate people about how simple lifestyle modifications, including air-drying one’s clothes, reduce our dependence on environmentally and culturally costly energy sources.”

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Name of Stakeholder or Commentator	Abbreviated Identifier	Brief Description
PSNH	<u>PSNH</u>	PSNH “is the Granite State's largest electric utility, serving more than 475,000 homes and businesses throughout the state.” PSNH owns “three fossil fuel-fired generating plants and nine hydroelectric facilities, jointly capable of generating more than 1,110 megawatts of electricity, [and operates a]s a wholly-owned subsidiary of Northeast Utilities— a utility holding company based in Connecticut.”
NH Residential Energy Performance Association	<u>REPA</u> <u>1</u>	REPA is “an organization whose membership is comprised of New Hampshire residential energy professionals who are highly trained and experienced in providing professional energy audits and home energy improvements (many through utility funded programs) ...”
Roy Morrison & Pentti Aalto	<u>RM&PA</u>	RM & PA are 2 individuals who have “proposed [a] pilot smart metering program ... under NHPUC investigation DE 06-061. ... Pentti Aalto has extensive experience in developing and testing this particular prototype of smart metering systems. Roy Morrison has extensive experience organizing consumer energy cooperatives and developing innovative electricity policy measures.”
Ridgewood Renewable Power, LLC	<u>RRP</u> <u>1</u>	RRP “is an international owner and operator of renewable electric power and infrastructure projects in the United States, United Kingdom, and Egypt,” including two 25 MW biomass plants in Maine, a 20 MW landfill gas plant in RI and hydroelectric facilities in various states other than NH.
Sprague Energy	<u>SE</u>	SE Corp., based in Portsmouth, NH, “is one of the largest suppliers of energy and materials handling services in New England with products including: home heating oil, diesel fuels, residual fuels, gasoline and natural gas.” SE is owned by Axel Johnson Inc.
Stefan Mattlage	<u>SM</u>	SM is a “member of the Concord Conservation Commission and ... [has] been an energy conservation advocate for decades.”
Symbiotic Strategies, LLC	<u>SYM</u> <u>1, 2, 3, 4, 5, 6</u>	“Ken Colburn formed Symbiotic Strategies LLC to pursue efforts in climate change, energy, public policy, and the intersection of environmental and economic opportunity. Previously he was executive director of NESCAUM, which represents the state air quality agencies in New England, New Jersey, and New York. ... Before joining NESCAUM, he led the Air Resources Division of the New Hampshire Department of Environmental Services” and had previously been a VP at the BIA of NH.
TransCanada	<u>TC</u>	TC “is a leader in the responsible development and reliable operation of North American energy infrastructure. [TC's] network of approximately ... 25,600 miles of pipeline transports the majority of Western Canada's natural gas production to key Canadian and U.S. markets.” TC is a “growing independent power producer” and owns 13 hydroelectric stations on the CT and Deerfield rivers in NH, VT and MA with 558 MW of generating capacity (originally owned by New England Power Co.).
Tamarack Energy	<u>TE</u>	TE, based in Manchester, NH “serves as a developer, advisor, and investor in cost-effective, sustainable and reliable energy solutions. Our team includes ... [specialists]who have participated in the development of over 2,000 MW of power projects, including more than 500 MW of renewable energy.”
Union of Concerned Scientists	<u>UCS</u> <u>1</u> <u>2</u>	UCS “is an independent, science-based, nonprofit alliance of more than 100,000 concerned citizens and scientists, including more than 1,000 in N[H], working for a healthy environment and a safer world. UCS combine[s] rigorous analysis with committed advocacy to reduce the environmental impacts and risks of energy production and use ... encouraging the development of clean and renewable energy resources, ... and ... improving energy efficiency.
University of N.H.	<u>UNH</u>	The Energy Task Force of UNH, created by President Hart in 2005, is “working with the UNH community to reduce emissions of greenhouse gases, improve energy efficiency and conservation, and lower energy costs.”
Unitil Service Corp.	<u>UNITIL</u>	“Unitil Service Corp. ... provides centralized administrative and management services to Unitil System subsidiaries.” “Unitil Energy Systems ... provides retail electric service to 71,100 customers in the Merrimack River Valley and Seacoast regions of N[H].”
WasteCap	<u>WC</u>	“The WasteCap Resource Conservation Network is a non-profit, non-partisan program of the Business and Industry Association of New Hampshire. WasteCap’s purpose is to assist New Hampshire businesses in improving energy efficiency, conserving water, and reducing waste.”

6. **ISSUES/PROBLEMS:**⁶ As a general matter, the stakeholders were strikingly consistent in their description of the issues and problems confronting New Hampshire in the realm of energy policy. The various observations have been categorized as pertaining to the high cost and price of energy in its many forms, the environmental effects associated with energy production, and regulatory uncertainty in the electric industry. Those broad categories are further segmented and described below.

6.1. **HIGH COST/PRICE OF ENERGY:** The high cost of energy, in all of its various forms, was a leading issue identified by most stakeholders. Those generally noting the problem of high energy costs include: **EXT, GSHA, NHSC, REPA, RRP, SM**, commenting that “[w]e have just begun to see the dramatic increase in energy prices,” **UNH**, and **WC**. In addition:

- The **BIA** expressed concern about NH’s high electric rates compared with other regions and how that might affect NH businesses’ ability to compete in the global marketplace.
- **NEEP** noted that: “*New Hampshire residents and businesses pay among the highest energy bills in the country, and those costs have continued to skyrocket over the last two years. These costs not only force hard lifestyle decisions on individual residents, but also lower their buying capabilities, while also lowering margins for the state’s businesses, decreasing its overall economic competitiveness. Further, nearly all of New Hampshire’s energy expenditures flow out of state.*”
- **NHCAA** and **NHLA** noted that low income and fixed income elderly households are particularly hard hit by rising energy costs.
- **NOU** noted that: “*record high energy prices [are] consuming a larger portion of disposable income; many residential customers [are] looking for fuel assistance or other assistance programs for [the] first time ever; [and] all customers [are] looking to higher efficiency heating equipment and other conservation methods.*”
- **UCS** noted that: “*Fossil-based energy and imported air pollution impose un-quantified costs on New Hampshire’s economy, including: lost worker productivity, higher costs for gasoline and vehicle inspection, job losses and trade deficits due to energy imports, and higher risk premiums due to energy price volatility. ...*”

6.1.1. **High Energy Costs in the Context of Energy Demand**

- **AD** noted the “tremendous potential for cost-effective energy improvements, particularly in NH where buildings typically endure over 7,200 heating degree-days annually” and noted that the NH “energy code does not have teeth.” **JI** likewise noted that energy use in NH buildings is inefficient.
- **GDS** emphasized that energy demand side issues are important and that regulatory risk of System Benefit Charge (SBC) funded energy efficiency (EE) programs must be minimized if the current fledgling but growing network of local energy efficiency-conscious product and service providers, working both within and outside available utility programs, is to take root and grow.
- **ISO** noted that summer peak demand in New England is increasing faster than average demand, resulting in increases in transmission congestion, which raises prices, and also drives need to build capacity and transmission to handle increasing loads to support

⁶ As identified by stakeholders.

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fewer hours of operation. Capacity utilization is declining, for example, N.E. annual peak load factor has declined from over 65% in the early to mid 1980s down to about 58% in recent years.

- **PLL** noted that in “New England, clothes dryers accounted for 7.3 percent of total household electricity consumption, in 2001.”
- The **UNH** representative raised the ethical issue of Americans using so much energy compared with the rest of the world.

6.1.2. High Costs in the Context of Limited Supply of Fossil Fuels, Price Instability and Volatility

- **SE** noted that “*little can be done to influence the global price level of petroleum products and there is little hope for major near term price relief. ... High Oil Prices are NOT a Local Happening: Current high petroleum prices are a global phenomenon driven by macro economic forces:*
 - *World demand continues to increase (China – India)*
 - *World excess refinery capacity continues to shrink (grade mismatch)*
 - *Many traditional supply sources are in turmoil*
 - *Developing additional reserves/capacity is not a priority for most producing nations – they have other domestic agendas*
 - *The daily buffer between crude supply and demand has been reduced to a few million barrels (<3%) from a historical level of 10 million barrels a day through the 80’s (10% - 15%)*
 - *As a result the markets have little capacity to absorb any type of disruption such as: weather, war, and strikes].”*
- **UNITIL** noted that energy is a global commodity subject to dynamic market forces.

6.1.3. Lack of Fuel Diversity and Reliability Concerns: Many stakeholders commented on the need to diversify fuel sources, away from volatile imported fossil fuels and toward more renewable and domestic energy sources, including **NEWP**, **NHSC**, and **NHTOA**. **GTS**, **TC** and **NHSEA**, among others, also noted the lack of encouragement and incentives for renewable energy. **NEEP** also noted that dependence on natural gas for electric generation raises questions about system reliability.

6.1.4. High Costs Concerns Specific to Electric Generation & Transmission

- **ISO** noted that “[h]igh cost fuels set the price most hours;” that there were “26% rate increases in New England this winter;” that natural gas powers about 40% of New England generation and sets the marginal price most frequently in New England; that electricity prices track natural gas prices and while electricity prices rose from 2000 to 2005, fuel-adjusted prices have remained stable.
- **NECA** argued that a “*host of factors – unrelated to electric restructuring – have contributed to current high electricity prices.*” Specifically the factors they cited are:
 - *Lack of indigenous natural resources makes us particularly vulnerable to fuel prices.*
 - *Retirement of units (e.g., nuclear) & new natural gas plants have made region highly dependent on natural gas.*
 - *Region’s location at end of natural gas pipelines makes it more expensive to get natural gas to the region.*

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- *Last summer's Gulf Coast hurricanes threatened the reliability of our natural gas supply this winter.*
- *High environmental expectations have led to progressive regulation (i.e., fuel switching restrictions, permitting, siting).*
- **NG** noted that while electricity prices are rising, the increase is driven by fuel prices, especially natural gas, and that is true both in the old regulated world and today's de-regulated world.

6.1.5. High Cost Concerns Specific to Natural Gas

- **NGA** noted that natural gas costs are high and demand continues to grow, with the power generation sector leading recent and projected growth in New England.
- **KS** said the two major issues facing NH are:
 - *"High price of natural gas: Natural gas pricing continues to be extremely volatile. Over the last five years, the price of natural gas has more than doubled. There are a number of factors that have contributed to this phenomenon including but not limited to; supply/demand balance, global events and the resulting impact on access to resource availability and the role of infrastructure.*
 - *"Access to natural gas resources: It is always important to have access to resources; however in an environment with a tight supply/demand balance it is even more critical. Furthermore, it is critical to have access to a diversified set of resources."*

6.2. ENVIRONMENTAL EFFECTS/EXTERNALITIES: Many stakeholders mentioned concerns about the environmental impacts of our current energy system, and other "externalities," such as costs, risks and missed opportunities that aren't regularly quantified in the market price of energy. These concerns range from public health and environmental costs of air pollution emissions, national security implications and especially the need to mitigate climate change and global warming risks. The need to evolve our energy system into one that supports long term environmental sustainability was another issues raised by some commentators.

- **CRR** argued that current patterns of energy production and use present unacceptable adverse consequences, including global warming, serious national security implications, the risk of nuclear accidents and adverse environmental effects.
- **CWA** noted the lack of a specific NH state action plan to deal with climate change, contrary to the Conference of New England Governors and Eastern Canadian Premiers (CONEG-ECP) climate change action plan adopted in 2002.
- **NEEP** provided the following comment: *"New Hampshire is among the eight states that have committed to participating in a Northeast carbon cap-and-trade system proposed through the Regional Greenhouse Gas Initiative (RGGI). We applaud the state's commitment to greenhouse gas reductions, which will need to be addressed principally through reductions in electricity generation in the stationary combustion sector. How New Hampshire structures its policies on meeting its greenhouse gas reduction commitments will have profound effects on energy consumers in the state."*
- **NESG** noted the need for additional clean electric power that doesn't emit greenhouse gases or harmful pollutants.

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- **PLL** noted the dangers of clothes dryers as an ignition source for many home fires (about 13,000/yr.) causing fatalities (about 10/yr.), personal injuries (about 280/yr.), and property damage (about \$97 million/yr.) across the U.S. according to NFPA.
- **RRP** made note of air pollution and public health consequences from fossil use.
- **UCS** provided hot links in their written comments arguing that:
 - *“The continuing pro-fossil tilt to U.S. energy policy risks our forfeiture of technology leadership and the attendant jobs and growth benefits.*
 - *“Climate scientists have reached overwhelming agreement that fossil-fuel combustion is the major cause of global warming” with attendant risks to NH’s ski industry, tourism, extreme weather events, and new pathogen migration.*
 - *“Health-related costs to New Hampshire from air pollution,” mostly from out of state fossil-fueled power plants, “are estimated to exceed \$1 billion per year,” with NH suffering “the highest rate of adult asthma in the nation.”*
 - *“Fossil generation and vehicle exhaust reduce New Hampshire forest productivity by as much as 14 percent, ...”*

6.3. REGULATORY UNCERTAINTY IN THE ELECTRIC INDUSTRY: This was the most controversial issue raised by stakeholders, with a range of competing perspectives, particularly with regard to the state of restructuring and the extent to which generation should be competitively procured or more fully regulated.

- **BOG** noted that power sales arrangements for four biomass generating facilities with approximately 65 MWs of capacity are ending within the year, resulting in uncertainty about the continued role of these plants in meeting NH’s future electric needs.
- **CEG** noted that: NH’s *“electric energy policy remains in transition with one foot in the regulated world and the other foot in the restructured world. ... This inconsistent regime will continue to forestall a fully robust competitive market. As a consequence the state’s economy will be harmed as market participants and private capital hesitate to make investments and pursue business opportunities in the state. The sooner the state makes a firm commitment to a fully restructured market, the sooner the state will be able to advance its energy policy to provide more secure, affordable and sustainable electricity for its citizens.”*
- **GSHA** filed written comments on the electric industry structure noting that they believe *“that the hybrid structure has worked well for New Hampshire in the past and probably will continue to offer benefits to New Hampshire ratepayers. ... “*
- **NECA** cited a number of *“[r]ecent studies [that] highlight benefits of electric competition for consumers:”*
 - *CERA Study (6/05) found “Real power prices are lower – compared to previous regulated period & what prices would have been if traditional regulation continued.”*
 - *AIM Foundation Study (12/05) “concluded that the Massachusetts Restructuring Act is working, but remains a work in progress.”*
 - *Global Energy Decision’s (7/05) “analysis of Eastern Interconnection concluded that wholesale competition is working.”*
 - *New York PSC’s (3/06) “evaluation of New York’s wholesale market found that wholesale competition led to significant efficiencies.”*
 - *ISO-NE’s (4/05) “evaluation of New England wholesale market found a host of regional benefits from electric competition.”*

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- *“ISO/RTO Council’s (11/05) report highlights the value of independent regional operators such as ISO-NE.”*
- **NECA** concluded its issue statement by noting that: *“One of the prime benefits of competition is the transfer of risks from consumers to the market. ... Existing generation has become more efficient, new generation has been built & new market signals to incent more generation [are in development]. ... New England’s competitive wholesale market has supported real environmental benefits to the region.”* However, some want to give up on competitive electric markets.
- **NG** argued that the old regulated generation model had problems: *“Customer bore the risk of paying for the cost of power plants.”* There were *“inefficient price signals to customers,”* and *“shareholders earned returns on their power plant investments without regard to performance or need for the plants.”* In contrast, under the new competitive generation business model:
 - Generators bear the risk of recovering their power plant investments,
 - Customers receive more efficient price signals;
 - Shareholder returns on power plant investments are linked to performance;
 - We have realized substantial environmental benefits; and
 - After adjusting for today’s higher cost of fuel, prices are actually lower in real terms.
- **NG** also provided a copy of an [“Open Letter to Policymakers,”](#) dated 6/26/06, from a group of 8 *“economists that have both followed and participated in the discussion on restructuring the electricity industry to support competitive wholesale and retail electricity markets”* who argue 3 points:
 - *“First, competition and markets are not to blame for recent increases in electricity prices. The current high electricity prices are largely the result of dramatically higher fuel costs. During the period 2000-2005, the price of natural gas increased 375%, and the price of coal increased 30%.*
 - *“Second, properly structured, competitive markets shift the risk of bad business and investment decisions away from consumers by having the shareholders of competitive suppliers, and not electricity customers, bear those risks.*
 - *“Third, restructured electricity markets are an efficient and reliable way to allocate resources, and there is growing evidence and convincing studies that show that consumers have saved billions of dollars in energy costs as a result of competitive markets when compared to the traditional regulation in effect before competition was implemented.”*
- **NHSC** asserted that electric deregulation has been a failure for consumers.
- **NEPGA** noted that:
 - *“Wholesale electricity prices in New England have declined by 16.5% from 2001-2004 when adjusted for fuel costs and inflation. This decline is the result of \$6 billion in new, private investment in 10,000 megawatts of clean and efficient generating plants, which have replaced many of the region’s older, inefficient plants.*
 - *“Prior to restructuring, customers paid utilities for investments in generating plants based on what it cost them to build, regardless of whether the plant was really economical over time. These costs often ended up being higher than buying power in the wholesale market, and there was no incentive for the utility to find the most efficient way to do things. Merchant generators, on the other hand, compete with each other to sell the power they produce. They have no assurance that their plant will continue to be paid if it is not economic in the market.*

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- *“History has shown that New England’s regulated utilities made poor choices about what power plants to build – creating billions of dollars of stranded costs – and operated these plants less efficiently than merchant companies.*
- *“The small amount of regulated generation that exists currently is not a major problem. However, no merchant generator will be willing to invest in new projects if regulated utilities are allowed to add new generation and be guaranteed to recover the cost through their rates, shifting the risk from the investor to the customer. ...”*
- **PSNH** noted that:
 - *“Over 70% of the electric generation capacity located in New Hampshire is from “merchant” generating plants and over 90% of the electric generation capacity in New England is from “merchant” generating plants; merchant generating plants are not subject to state rate regulation.*
 - *“ISO-NE projects New England electric capacity shortages during peak load periods within 2 years.*
 - *“State regulated utilities in New England, except Vermont, are precluded by law or state policy from building or acquiring new electric generation facilities.*
 - *“New England operates as a single interconnected wholesale electric market with ‘locational’ and ‘nodal’ prices within each state.*
 - *“New England has become increasingly dependent on natural gas as a fuel for electric generation and New England wholesale electric market prices are largely set by the price of natural gas, and oil.*
 - *“After approximately ten years from the time New England first began to restructure its retail electric industry, New England continues to have among the highest electric prices in the nation and is on the edge of electric supply shortages.*
 - *“Unlike the pre-restructuring model, no one in New England is directly responsible for ensuring that future electric generation is built. ... Essentially no new major power plants are currently under development in New England. It can take 3-7 years to build a new generation plant.”*
 - *While most regulated utilities in New England have sold their generation plants, PSNH still owns most of its generation capacity, but is “precluded by the State from acquiring, owning or building new generation capacity;*
 - *“The New England electric utility market is increasingly coming under the control of the Federal Energy Regulatory Commission. Therefore the role that State government assumes in energy policy is diminishing; both due to federal regulation and state policy that precludes its state’s utilities from solving key energy issues.*
 - *“Environmental and siting standards have been tightening nationally and have become even more restrictive in New England making it increasingly difficult to site new generation or to operate existing generation; including new renewable generation.”*
- **TC** noted that the transition to generation competition is not complete.
- **UNITIL** noted that:
 - *“[T]he three smaller companies, Unitil, National Grid and the New Hampshire Electric Coop, proceeded with electric restructuring in their various ways” and that all of their customers are supplied with competitively procured power, mostly from bid default service, although “[m]any of the large customers have chosen competitive supply options offered by a number of retail competitors.*
 - *“However, 70% of the electric customers in New Hampshire, those served by PSNH, are provided electricity supply under a hybrid option. Customers are free to choose a*

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competitive retail supply option, but PSNH provides a Default Service based largely on a mix of generating facilities that it continues to own and operate, with additional purchases of generation on the wholesale market as needed to meet customer requirements. Supply service is priced at an average cost of service for PSNH, determined and set in a regulatory investigation on an annual or semi-annual basis. Under the legal framework that exists, however, PSNH is not required to complete the transition to market based generation services, nor are they allowed to alter or expand their portfolio of owned generation resources. Effectively, one foot remains in the old world, and one in the new.

- *“The status quo is not good for the state of New Hampshire. PSNH and its customers are in limbo and cannot move forward or go back. And the competitive market in New Hampshire is only partially open, leaving competitive suppliers less interested in competing for those customers who are in the market. Right now, large customers in Maine and Massachusetts where markets are fully open are getting more competitive bids and lower prices than large customers of the same size in New Hampshire.”*

7. STAKEHOLDER RECOMMENDATIONS

The Stakeholders were consistent in identifying, at a high level, a number of proposed solutions to the problems they had identified. Specifically, the stakeholders propose that conservation, energy efficiency and demand response be encouraged, that increased consumer education be undertaken and that fuel diversity and renewable energy be promoted. Within these broad categories of agreement, however, there were a variety of different emphases and some significant difference of opinion on the details. In addition to the general areas of agreement, there were some more particular recommendations made by groups of stakeholders. These areas include considering market structure change in the electric industry, paying attention to infrastructure development and siting issues, assisting low income citizens and addressing climate change.

7.1. ENCOURAGE CONSERVATION, ENERGY EFFICIENCY & DEMAND

RESPONSE: Overwhelmingly, the most frequent recommendations, from virtually all of the commentators, were in support of continued or expanded promotion of energy efficiency (EE), conservation and demand response. While there were many general statements in favor of increasing EE, many commentators provided very specific and detailed suggestions, which can only be summarized here.

- **CEG** stated that *“policy-makers should evaluate a host of measures that will encourage conservation”* including following up on policies discussed in the 11/02 NH Energy Plan, EPAB 6/6/06 Annual Report. They also suggested:
 - *“Establishing an “Energy” class line in the State operating budget to allow better tracking and consolidation of costs at the state agency level. This will better enable the State to procure energy on a more competitive basis. The [DRA] MS42 and MS2 forms which record County and municipal expenditures should also be updated to include an energy cost item.”*
 - *“Use the State’s Capital Budget to set aside energy efficiency dollars for state buildings and other programs which require up front investment.”*
 - *“Update the NH Energy Plan’s base case energy cost modeling in order to serve as a tool for executive and legislative planning and policy development.”*
 - CEG also outlined initiatives from recent MA and CT for consideration.

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- **CRR** recommends that *“the state should adopt all reasonable and prudent measures, including financial incentives, to promote the maximum increase in the efficient use of energy in all industrial, commercial, and residential applications.”*
- **GDS:** *“Develop and maintain a long-range goal to increase the energy efficiency ethic and knowledge/demand for energy efficient products and services among the citizens and businesses within New Hampshire and to create a sustainable infrastructure of local energy efficiency product and service providers.”*
- **JI:** The state should *“work actively to put in place aggressive energy conservation and efficiency measures, as well as encourage and support new, greener supply-side initiatives.”*
- **KS:** *“It is imperative that NH continue to focus efforts on EE. EE does have an impact.”*
- **NECA:** Encourage innovative demand side management, energy efficiency & conservation.
- **ISO:** Reduce demand on system: encourage efficiency, conservation and demand response.
- **NGA:** *“Continued Energy Efficiency is Critical;”* continue natural gas efficiency programs.
- **NEEP:** The NH legislature should: *“mandate energy efficiency programs for fuel oil and propane heating customers.”*
- **NEEP:** The state should support the US DOE & EPA Energy Efficiency Action Plan which has 4 core recommendations for states (see <http://www.epa.gov/cleanenergy/eeactionplan.htm>).
- **NEWP:** NH *“needs to encourage and reward technological advances in energy efficiency;”* specifically work with *“the private sector to reward improved efficiency in electric power generation and space heating.”*
- **NHSC:** Promote or require conservation practices and energy-conserving products. The state should set an example.
- **NOU:** *“Promote cost-effective and innovative energy efficiency and conservation initiatives, such as loan programs, private-public partnerships, utility programs, regional GasNetworks programs, and federal programs.”*
- **SM:** Develop tax credits for home owners and business owners to buy energy efficient equipment and facility improvements. Make graphic actual and potential EE savings.
- **UCS:** Invest in greater energy efficiency and induce technology changes.

7.1.1. System Benefit Charge (SBC) Funded Energy Efficiency (EE) Programs

- **AD** recommended that NH:
 - *“Increase the rate for the current electricity SBC to 2.0 mills/kWh from the present 1.8 mills/kWh align the SBC with rates neighboring New England states – Support cost-effective statewide energy efficiency programs.*
 - *“Use benefit/cost analysis as the primary metric for determining how limited System Benefits Charge (SBC) monies are spent. Renewable energy programs such as solar domestic hot water installations should be eligible for SBC-funded programs to the extent the benefits (including societal and environmental benefits) are comparable to the benefits of energy efficiency and fuel assistance programs.*
 - *“Understand the program components that make energy efficiency programs successful or unsuccessful, and compare these components with the implemented features of the New Hampshire energy efficiency programs” by learning from other state programs.*

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- *“Clarify the role of the existing natural gas efficiency incentive programs and implement a line item SBC for residential and commercial natural gas supply in New Hampshire that is comparable to the electric SBC.*
- *“Study the feasibility of a SBC or similar funding mechanism for fuel oil, propane, and other non-renewable fuels that currently are exempt from this program. At the same time, invite participation from these industries to develop accredited energy performance contracting as a revenue-enhancing complement to their current host of services.*
- *“Provide more training and recognition to the building trades in specific sub-industries such as framers, foundation contractors, electricians, HVAC contractors, plumbers, insulation contractors, and window contractors to develop a "best practices" pool of qualified contractors.*
- *“Continue to encourage the Energy Star Homes program through the SBC mechanism, with level or increased funding overall. However, Energy Star for Homes funding on a per housing unit basis should be scaled back and better targeted, particularly with multi-unit housing. An enhanced Energy Star+ for Homes should be implemented, with expanded incentives for higher performance new homes.*
- *“Examine opportunities for widening the pool of qualified energy auditors and energy performance contractors, such as ... providing a mechanism for energy performance contractors to achieve nationally recognized training certification such as through the Building Performance Institute.*
- *“Crack down on "bad apples" such as certain replacement window contractors who make poorly substantiated claims of 40% or 50% energy savings from window replacements...”*
- **BIA** recommends preserving the SBC funded energy efficiency programs, noting:
 - *“While the BIA recognizes the importance of responding to the needs of low-income families, we encourage the legislature to preserve the energy efficiency fund and resist the urge to shift money from the energy efficiency fund to low-income. ... BIA encourages the legislature to avoid further shifts that may negatively impact energy savings and environmentally-friendly projects.*
 - *“The energy efficiency program represents a long-term solution that reduces demand for electricity and allows businesses to reinvest cost savings into the New Hampshire economy. ... BIA firmly believes in the energy efficiency program. We think that the program’s focus on demand side management is prudent economic and environmental policy. Stated differently, every Kwh and Mwh not used means less generation, less air pollution and a more competitive economy. The state should embrace such a policy.”*
- **GDS:** Minimize regulatory risk to fledgling market of EE providers by maintaining current SBC for EE for an extended period of time (i.e. 5 years). Continue to allow utilities to submit multi-year energy efficiency program plans and budgets with opportunities for annual updates.
- **NEEP:** Allocate all carbon allowance credits from RGGI model rule to consumer purposes (instead of the 25% minimum set by the rule) and use for EE programs.
- **NG:** Continue and enhance EE programs.
- **NHLA:** Increase the 1.8 mills cap for energy efficiency programs.
- **PSNH:** Maintain or increase funding available for energy efficiency programs.
- **REPA:**
 - Continue support for EE programs and do not shift funding from SBC away from EE.
 - Provide more fuel-neutral home energy performance services.

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- Provide low-interest financing for improvements that are recommended following an energy audit by a certified energy auditor.
- **UNITIL:** *“Continue to support energy efficiency and low income programs for electric customers. ...decades of experience have demonstrated that significant market barriers exist that prevent consumers from making optimal energy choices. Some of these barriers are informational, some relate to the market availability of efficient products or services, and some are financial, such as the high upfront costs of technologies that reduce life-cycle costs. It should be the goal of the state of New Hampshire to support and fund programs that help break down these market barriers. ... Unitil believes the programs that it offers to its customers under this framework have been very valuable and highly cost-effective. It also believes the funding has been at an appropriate level.”*
- **WC** *“recommends that the State of New Hampshire place a priority on maintaining adequate funding for energy efficiency programming targeted at the business community. It is a certainty that it is less expensive to conserve energy than to produce it. Improving energy efficiency within the New Hampshire business community will make our state’s businesses more profitable, stable, and competitive, and have the added benefit of reducing environmental impacts.”*

7.1.2. Appliances, Devices, Processes

- **CRR:** Promote maximum increase in the efficient use of energy in all industrial, commercial, and residential applications.
- **NEEP:** Adopt minimum EE appliance standards as other states in the region have done.
- **PLL** recommends:
 - Legislation to establish a “right to dry” (air or solar drying of clothes outside).
 - That the Governor should speak about energy conservation and particularly with regard to clothes drying & the benefits of manual labor including hanging clothes out to dry.
 - Determine which communities prohibit clothes drying.
 - Determine costs of outside clothes drying vs. gas/electricity.
 - Electric utilities should encourage use of cold water in washing and outside clothes drying.
 - Electric utilities should educate customers about high-risks of electric/gas clothes dryers.

7.1.3. Building Envelopes & Systems (New & Retrofit)

- **AD** recommended that:
 - *“The PUC should develop a mechanism, such as an SBC-funded incentive, to encourage builders and particularly new homeowners to get certified Home Energy Rating System (HERS) ratings for new homes. At the same time, the state should work with the real estate industry to promote disclosure of HERS scores on their Multiple Listing Service (MLS) as a means for homebuyers to compare the energy performance of new or existing homes, much as EPA’s mileage stickers allow car buyers to compare the energy performance of cars.*
 - *“The state should facilitate mechanisms for the mortgage industry to offer energy efficient mortgages (EEMs) as a means to both encourage ownership of high performance homes, lower homeowners’ utility costs, and further spread the acceptance of HERS scores.*
 - *“The state should work with builder and contractors (see recommendations in I. C.) to develop the technical skills necessary to build high performance homes, and to encourage builders to earn the new federal \$2,000 tax credit for new homes that achieve ultra high energy performance.”*

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- **JJ:** Design and construct all state buildings to US Green Building Council LEED Silver standard and require exceeding energy code by 50%.
- **JJ:** Invest in EE design and construction education in high school vocational & technical college programs.

7.1.4. Energy Codes

- **AD** recommended that state energy codes be strengthened and that assistance with compliance be increased, including that:
 - The PUC *“needs to take a critical look at the as-built energy performance of new homes, not just with paper compliance with the energy code.”*
 - *“Every new home built in New Hampshire should get a blower door test to measure actual air leakage. And air infiltration reduction should be better emphasized as a significant feature of the New Hampshire energy code.”*
- **JJ:** Increase minimum energy code requirements for commercial and residential buildings.
 - Promote Federal tax credits for new commercial buildings that exceed code by 25-50%.
 - Promote Federal residential tax credits for new Energy Star homes of up to \$2,000/home.
- **NEEP:** The NH legislature should adopt the 2006 International Energy Conservation Code (IECC). *“It incorporates the latest information on building practices and contains state-of-the-art efficient building standards. The 2006 IECC, which was explicitly developed to simplify code compliance and enforcement, is far shorter and easier to understand than earlier versions. In addition, the U.S. Department of Energy supports training for the 2006 IECC.”*
- **NHSC:** Promote “green” energy-efficient building codes.

7.1.5. Rate Design, Real Time Rates and Electricity Markets

- **ISO:** Implement dynamic retail rates for commercial customers to increase consumer responsiveness to wholesale prices.
- **NEEP:** Consider *“an energy efficiency portfolio (or resource) standard (EEPS), where utilities, default service providers and/or retail suppliers are required to meet a certain percentage of their load requirement (or a percentage of forecasted load growth) or peak demand through energy efficiency.”* The legislature could include this with an RPS or the PUC could initiate a proceeding to consider this. Also the PUC should:
 - *“Ensure the maximum benefits for the state’s energy consumers is realized by full inclusion of energy efficiency in the forward capacity markets.”*
 - *“Commit to New Hampshire working with other New England states on developing a set of common protocols for measuring and verifying energy efficiency in this market.”*
 - Address rate design issues and remove the regulatory incentive for utilities to earn more revenue by selling more energy.
- **NEPGA:** Access wholesale real-time price structure at ISO for retail markets.
- **NG:** Expand real-time pricing.
- **RM & PA:** Develop smart metering real-time pricing, the link from wholesale to retail. Use 5 minute real-time price signal for billing and allow customers to use this to shut off appliances. Implement a residential pilot project.
- **SYM:** Consider decoupling utility revenue from volumetric sales.

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7.1.6. Consumer Education

- **EXT:** No specific recommendations, but Coop. Ext. is convening an energy advisory team to better educate on energy issues and perhaps assist with consumer education such as through a web site with practical why and how energy conservation information, etc.
- **SM:** Apply a wide spectrum of energy efficiency support programs including education.
- **SE:** Promote a willingness to consider all energy resources.
- Many suggestions summarized elsewhere include consumer education components and are only repeated here in synthesis:
 - Educate consumers on managing energy use and the connection between supply, demand and prices.
 - Inform residential and business consumers, as well as designers and builders, of tax or other available incentives.
 - Address misinformation, i.e. who you can trust for reliable information.
 - Develop systematic, long-term education program on these issues.
 - Help quantify benefits of efficiency to consumers.
 - Educate about the objectives of state energy policy and the reasoning behind it.
 - The NH General Court should be a key audience for all energy education.
 - Inform educate all consumers regarding peak demand.
 - Highlight good local initiatives (Cool Cities, Cities for Climate Protection) and other best practices, including UNH and State model practices.

7.2. PROMOTE FUEL SUPPLY DIVERSITY & RENEWABLES

- **CRR:** Advance the use of locally-sited renewable energy including wind and solar and oppose any attempt to increase reliance on atomic reactors.
- **GSHA:** Assure that any legislative or executive action relating to energy policy recognizes the benefits of hydroelectric power, both environmentally and economically.
- **IRV:** Because of the volatility and higher prices of petroleum products, dealers need to have larger credit lines, which can be a problem, so the state could help get banks to setup special seasonal lines of credit for petroleum retailers to help avoid shortages during price spikes.
- **ISO:** Add new base load – site power generation resources with lower cost fuel and diversify fuel mix for electric generation.
- **JI:**
 - Publicize RSA 672/674 encouraging passive solar energy collection for buildings – provide tax credit for employing passive solar designs.
 - Develop state incentive program for domestic hot water or photovoltaic solar electric systems.
 - Support development of wind farms in NH.
- **KS:** *“Initiate and support efforts to provide additional [gas] infrastructure to the New England region.”*
- **NECA:** Develop new & diverse generation resources.
- **NESG:** Encourage more nuclear power production.
- **NGA:** Diversify sources of natural gas, including new LNG import capability.

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- **NHSEA:** Expand programs from systems benefit charge to include financial incentive programs for renewables.
- **NOU:** Encourage economic expansion of energy supplies and new technologies.
- **RM & PA:** The Legislature needs to encourage renewable developers.
- **RM:** Need to make fossil fuels & nuclear pay for all associated costs such as environmental costs.
- **SE:** Government should:
 - Provide grants to promote research and alternative fuel usage.
 - Have a tax policy to support that development.
 - Have an energy policy that does not favor one fuel over another but allows the market the flexibility to provide the best solutions.
 - Allow sufficient lead times for sensible market adoption of new fuel standards and have fewer large regional standards instead of more narrow ones.
- Some synthesized suggestions:
 - Use local energy sources/fuels (biomass, construction & demolition wood waste, wind, tidal, hydro, solar, geothermal, bio-diesel, conservation & efficiency).
 - Support long-term state contracts for local source use.
 - Support local fuel source use.
 - Non-local energy sources/fuels (nuclear, coal, natural gas, oil, gasoline & diesel).
 - Start Seabrook II up.
 - Have firm back-up systems for co-generation and natural gas generation.
 - Consider the environmental, economic & security benefits of fuel diversification.
 - Note the emphasis in existing statute – RSA 378:37.
 - Analyze the benefits of fuel diversification.
 - The State should purchase B-20 fuel oil and use more bio-diesel in state fleets.
 - Shop electricity needs and favor renewables for supply.

7.2.1. Distributed Generation (DG)

- **NEWP:** Promote small-scale high efficiency distributed power.
- **NHSEA:** Supports net metering but urges repeal or change of PUC 906.01(a)(3) and (b) rules to allow for more types of inverter hardware used for net metering. This would eliminate NH's restrictive standards for PV inverters that are inconsistent with the rest of the nation.
- **NHTOA:** Offer energy credits for businesses and institutions that use renewable power "behind the meter."
- **RM & PA:** We need legislative review of net-metering. Assess use of district heating and cooling to increase system efficiency. Consider WADE model for cost effectiveness of DG.
- **SYM:** Develop combined heat and power systems (CHP) to achieve dramatic efficiency gains for necessary energy use.
- **TE:** Consider programs like the CT Clean Energy Fund and the MA Renewable Energy Trust.
- Some synthesized suggestions:
 - Deal with distributed energy siting issues (local & state).
 - Provide incentives for distributed energy.
 - Authority for utilities to use distributed energy.

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- Ensure security by investment in distributed generation at emergency facilities.

7.2.2. Renewable Portfolio Standard (RPS)

- **BOG:** Adopt an RPS substantially like the final version of the SB 314 from this session with multi-tier class system.
- **CWA:** Adopt RPS.
- **GSHA:** RPS must provide incentive to continue existing as well as new renewables.
- **NEWG:** Implement an RPS that includes incentives for production of thermal energy from renewable fuels.
- **NHTOA:** Adopt an RPS that:
 - retains our existing renewable power (wood) producers, and
 - promotes thermal and electricity generation at the commercial level.
- **NHSEA:** Pass an RPS bill and support renewables.
- **PSNH:** *“Establish a ‘renewable portfolio standard (RPS)’ in New Hampshire that encourages new renewable generation provided that regulated utilities are allowed to acquire or own new renewable generation assets to meet this new standard and State agencies support appropriate siting and permitting.”*
- **RRP:** Adopt an RPS to include separate requirements for existing as well as new renewables.
- **UCS:** NH *“should join the 21 other states, including Connecticut, Maine, Massachusetts, and Rhode Island, in adopting a strong and effective renewable portfolio (electricity) standard (RPS) to tap into the wealth of homegrown resources in the state, and reap the many benefits that clean energy provides.”*
- **SYM:** Consider adopting an “Advanced Energy Portfolio Standard” like PA did in 2004 that incentivizes energy efficiency and the capture and use of waste energy.
- **TC:** Establish an RPS and increase renewable power purchases from the State.
- **TE:** Adopt an RPS to spur investment in renewables.
- Some synthesized suggestions:
 - Determine if new and/or existing renewables should qualify.
 - Allow regulated utilities to be part of RPS.
 - Provide for varying credits for various renewable classes.
 - Broaden RPS to include thermal energy.
 - Think long-term in passing RPS.
 - Do thorough cost/benefit analysis.

7.3. CONSIDER MARKET STRUCTURE CHANGE – OR NOT

- **CEG:** Medium-term – legislature should consider: requiring PSNH to issue RFP for procurement of 25-30% of their default service portfolio; PUC open a docket to evaluate the criteria for PSNH divestiture; require PSNH to bid entire load into marketplace and sell all of its generation into marketplace and use premium for stranded cost reduction.
- **CEG:** Long-term – PUC and legislature should complete PSNH Electric Industry Settlement and require separation of PSNH generation assets from its rate base.
- **CRR:** Determine whether to return to full regulation as a better alternative to consumers.

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- **GSHA:** PSNH should continue purchases from small-scale hydroelectric plants. Retain NH's hybrid market structure.
- **ISO:** Develop market solutions: Forward Capacity Market; ASM Phase II for quick start resources in high demand areas, get wholesale market price signals to retail customers.
- **NECA:** Complete restructuring. Stay the course; don't give up on competitive electric markets.
- **NEPGA:** All new generation built in NH should be part of competitive process.
- **NHSC:** Implement electric deregulation. "Open NH markets to genuine competition ..."
- **NG:** Complete Restructuring of the electric market in NH. Consider the thoughts of noted economists on the value of competitive electric markets. Make retail competition as seamless as possible for customers to go into the market or return to default service when needed. Lower entry barriers for retail competition.
- **NG:** With regard to wholesale market – implement forward capacity auction.
- **PSNH:**
 - *"Continue the policy of maintaining an "open access" to retail electric energy markets.*
 - *"Remove restriction to state regulated utilities ownership of electric generation for the purpose of providing default energy service – allow both regulated and merchant generators to operate under wholesale market rules set by FERC.*
 - *"Allow for a process where PUC can approve new generation owned by state regulated utility provided the generation is in the public interest.*
 - *"Provide for the installation and ownership of peaking generation by a state regulated utility for the purpose of meeting electric system or supply reliability."*
- **TE:** Encourage and maintain a competitive and restructured landscape for power generation to enable continued savings to customers.
- **UNITIL:** Complete restructuring of the electric market in NH as envisioned in RSA 374-F. Move to market based pricing for PSNH generation services and create a statewide competitive Market for generation services. Consider more specific suggestions in written comments.
- Some synthesized suggestions:
 - Figure out the investment source for new electricity generation.
 - Allow distribution companies to build generation.
 - Make all new generation investments through a competitive selection process.
 - Support timely implementation of FCM.
 - Provide state-funded low-interest loans for certain generation development. Consider the issue of public versus private dollars for infrastructure investment.
 - NH must participate in regional efforts.
 - Future direction – regulated or not?
 - Complete restructuring (PSNH divestment of generation), OR
 - Maintain/modify the hybrid restructuring that exists today, OR
 - Reverse restructuring (or partially reverse).
 - Figure out the impact on ratepayers:
 - Take into account possible negative effects on ratepayers as a result of full deregulation (i.e. effects of turning electricity into full commodity product).
 - Think long-term in all policy actions.
 - Consider the reliability of energy supply.

7.4. ADDRESS INFRASTRUCTURE & SITING

- **AD:** Monitor and develop infrastructure for natural gas; consider whether gas efficiency improvements would be quicker and cheaper.
- **KS:** Initiate and support efforts to provide more natural gas infrastructure in region.
- **NECA:** Address region's NIMBY issues
- **NECA & NEPGA:** Complete regional transmission upgrades (these are our highways.)
- **NEPGA:** All new generation built in NH should be part of competitive process.
- **NG:** Support transmission upgrades – continue infrastructure expansion and platform for competitive markets.
- **NGA:** Region must increase its natural gas supply capacity and add new infrastructure (pipeline & LNG).
- **NGA:** Gas generators need to pay for pipeline delivery infrastructure for peak power generation demands.
- **NHSC:** Simplify siting of alternative electricity generation facilities such as wind and solar.
- **NOU:** Support investments in maintaining and upgrading natural gas supply and delivery infrastructure.
- **SE:** We need *“a willingness to work with the regional stakeholders to allow for well thought out development in the area of their back yards.”*
- **TC:** We need to support natural gas infrastructure improvements.
- **TC:** We need enhanced siting of energy facilities with stakeholder and environmental safeguards.
- **UNITIL:** State needs to support investments in electric delivery infrastructure.
- Some synthesized suggestions:
 - Consider avoidance and alternatives to siting problems and new capacity investments:
 - Efficiency promotion.
 - Encourage/require peak load shifting.
 - Encourage distributed generation.
 - Encourage siting LNG terminal and pipelines.
 - Encourage hydrogen distribution systems.
 - Support rate recovery for gas infrastructure investments.
 - Participate in the Modern Grid Initiative (www.themoderngrid.org).
 - Simplify standards for siting.
 - Lower threshold for existing state siting process.
 - Encourage better planning around infrastructure siting.
 - Develop more predictable siting standards.

7.5. ASSIST LOW INCOME CUSTOMERS

- **NHCAA:** Expand state commitment to assist low income/fixed income people with increasing cost of energy. We must *“address both affordability and conservation in a meaningful and significant way.”*

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- **NHLA:** We need to make energy secure, affordable and sustainable for low income citizens. The Electric Assistance Program (EAP) has helped make electric service more affordable to thousands of low-income customers since the program began in 2002. Recommend a repeal of sunset of EAP so that it continues indefinitely and recommend an increase to 1.5 mills for EAP from the system benefits charge.
- **NOU:** Continue assistance to low income customers through bill assistance and energy efficiency programs.
- **REPA:** Continue utility sponsored energy efficiency programs and prevent shifting energy efficiency funds to bill assistance. Also recommends providing low-interest financing for improvements that are recommend following an energy audit by a certified energy auditor.
- **UNITIL** recommended continued support for energy efficiency and low income programs for electric customers, however, *“we believe the benefit levels and funding priorities need to be reviewed in order to insure that the greatest number of those in need receive at least an adequate level of assistance.”*

7.6. ADDRESS CLIMATE CHANGE & THE REGIONAL GREENHOUSE GAS INITIATIVE (RGGI)

- **BIA** urges caution relative to voluntary initiatives such as RGGI: *“BIA believes that it is wise for the state to consider environmental initiatives; however the state's policy makers must continue to consider the economic ramifications of voluntary initiatives that may increase the cost of generation, transmission and distribution.”*
- **CRR:** Recommends increasing energy efficiency and use of renewables and opposes any attempt to increase reliance on atomic reactors. Need to make fossil fuels and nuclear pay for all the costs associated with fuel use such as environmental costs and costs of nuclear fuel handling and disposal.
- **CWA:** Given the breadth and diversity of sources of greenhouse gases in our industrialized society as well as complex responses required to address them, it is imperative that a comprehensive and coordinated approach be taken for effective action, with an essential first step being the development of a plan of action. We recommend that the State produce a climate action plan.
- **JJ:** *“The cheapest watt is the one we do not use.’ It is paramount that the State of New Hampshire work actively to put in place aggressive energy conservation and efficiency measures, as well as encourage and support new, greener supply-side initiatives. It will simply not be enough to add renewables – we must reduce demand through conservation and efficient use of our energy resources.”* Recommends adopting RGGI and developing a State climate action plan.
- **NESG:** The State needs to encourage more nuclear power generation.
- **NG:** Global warming is real and we need to address environmental impacts. The RGGI initiative and consideration of RPS should continue and environmental issues must be addressed locally, regionally and nationally in order to develop solutions.
- **UCS:** The State should adopt an RPS standard as well as legislation implementing the RGGI model rule. UCS also recommends that New Hampshire’s RGGI implementation include significant incentives by means of allocating allowances for direct investment in energy efficiency and renewable energy. The State treasurer should join Investor Network on Climate Risk for assessment of climate change effects of NH’s investment portfolio decisions.

7.7. TRANSPORTATION

Transportation issues were beyond the scope of this stakeholder forum. Nonetheless a number of parties referenced transportation issues and the need to improve the design and energy efficiency of our transportation system. The New Hampshire Department of Transportation and the New Hampshire Charitable Foundation recently completed a long term vision for the State's transportation needs. The result of this collaboration is contained in a New Hampshire Transportation Business Plan. Several parties suggested that EPAB should receive a briefing on the long term plan and then explore ways to respond to the energy implications of the plan.

- **JJ:** We strongly support efforts to reduce energy demand and increase alternative and cleaner fuel technologies in the transportation sector such as bio-diesel.
- **SE** recommends lead times that allow for sensible market adoption of new fuel standards and recognition of the need to adopt large regional standards in order to avoid needing 28 grades gasoline.
- **NHSC:** Require higher MPG requirements than federal standards provide.

8. IMPLEMENTATION:

Who should evaluate, refine, adopt and implement the various recommendations is a critical question and will require follow up work by EPAB and others. The **NH Legislature** is a central player and the primary maker and originator of state policy through legislation. The **Governor** and **Executive Branch** also help develop policy and take the lead in implementing state policy. Key agencies involved in developing and/or implementing energy policy include the **Governor's Office**, the **Office of Energy and Planning (OEP)**, the **Department of Administrative Services (DAS)**, the **Department of Environmental Services (DES)**, and the **Public Utilities Commission (PUC)**. The later two also play important regulatory roles in the energy sector. The **Department of Transportation (DOT)** and **Department of Resources and Economic Development** also have significant roles related to energy use and the economy of NH.

Educational institutions such as UNH and the Community Technical College system are another important resource. And of course the private sector, both for profit and nonprofit, play key roles both policy advocacy and actual implementation of many measures and solutions.

Several commentators remarked on the role that public institutions can play in setting an example and piloting possible solutions. For example, **UNH** offered its Energy Task Force, new cogeneration facility, facility efficiency upgrades, clean fleet program and sustainability programs as examples for others to follow. Other pointed to local government initiatives such as Cool Cities and Cities for Climate Protection as models to highlight.

AD recommended that the State lead by example with energy performance in state buildings and use this *"as a springboard for educational and technical transfer to local government and business facilities throughout the state."*

NEWG concluded their remarks by stating: *"New Hampshire state government needs to be a leader and early adopter of efficient energy technology and renewable energy systems. State government is the largest energy consumer in New Hampshire. Progress has been made through Governor Lynch's executive order, but much more can and should be done."*