



New Hampshire

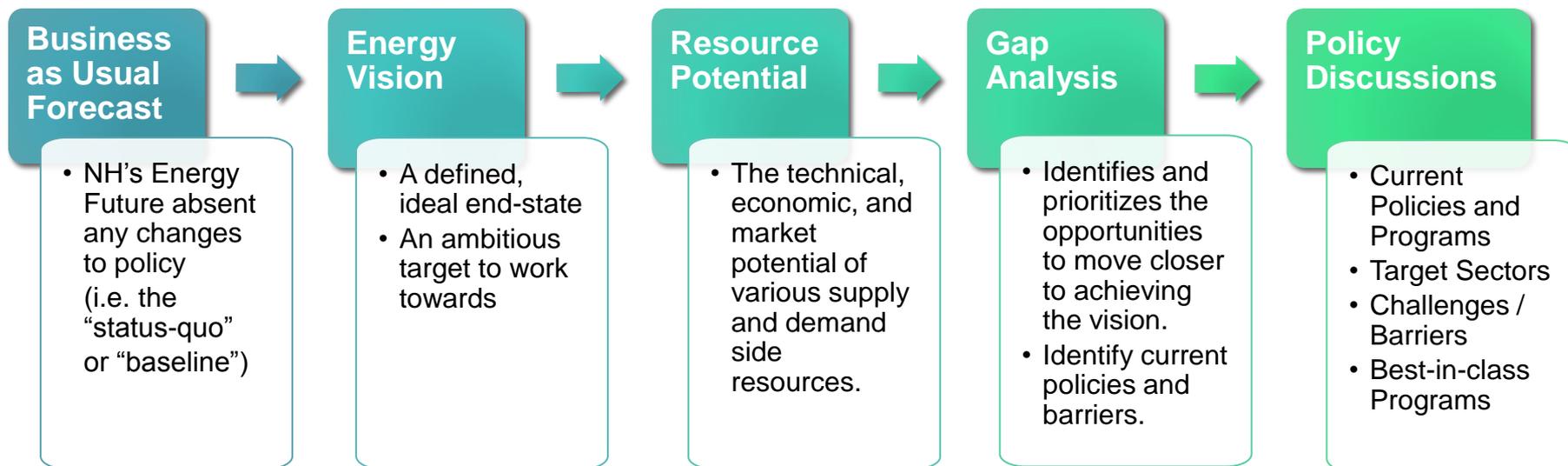
State Energy Strategy

September 19, 2014

SB191 of 2013

- “Development of a state energy strategy is necessary to ensure that the state’s energy policies and programs support the state’s economic, environmental, and public health goals.”
- “...recommendations for policy changes and priorities necessary to ensure the reliability, safety, fuel diversity, and affordability of New Hampshire’s energy sources, while protecting natural, historic, and aesthetic resources and encouraging local and renewable energy resources.”
- Created an Advisory Council to assist OEP in the development of a state energy strategy.

Energy Strategy Development Process



Strategy Development and Recommendations

- Based on fit, impact, relative cost and effort
- Build on existing policies and programs and best-in-class programs

Energy Strategy Themes

- Align incentive structures and remove barriers to private investment
 - Promote consumer awareness of the options available
 - Use limited public funds more effectively to spur private investment (and to help those who can't afford to take action)
 - Ensure New Hampshire proactively represents its interests on regional matters
- SB191 did not set specific goals. As a result, the Strategy development process sought to both define the vision and recommend strategies to achieve it.
 - The Strategy can help inform public and private activities; some of the strategies may require legislation to be implemented but many can be done with existing authority.

Baseline / Business as Usual Forecast

- Describes NH's energy future under current energy policies, plans, and programs at the state, regional, and national level. A forecast of the future absent any new or amended policies. (See Appendix A)
- Key Finding: Demand is steady, emissions are declining and costs are increasing.
 - Electric generation is getting cleaner, driven by environmental and economic factors.
 - Price volatility in deliverable heating fuels is pushing customers to other options.
 - Gains in efficiency are largely offset by greater usage per customer.
 - Commercial demand is projected to grow as the NH continues to shift from manufacturing to a technology driven economy.

Energy Vision

In 2025:

- Consumers are empowered to manage their energy use by taking full advantage of the information, market mechanisms, energy efficient technologies, diverse fuel sources, and transportation options available to them.
- These services are widely available, closing the gap in disparity of energy access across the state. The results of these widespread consumer empowerment initiatives are lower energy bills, greater choice for the consumer, increased self-reliance, and a cleaner, more sustainable and resilient energy system.
- New Hampshire's energy policies and programs leverage public funds ten to one – inspiring investor confidence, creating high quality jobs, and attracting new residents and businesses to the state.
- Efficient transit systems help make New Hampshire tourist friendly and the state's high efficiency building stock, skilled workforce, and well managed natural resources make it regionally competitive and help keep dollars in state.
- As an active participant in New England's broader energy economy, in-state suppliers of energy services receive the proper signals to drive toward creating an efficient and secure energy system that delivers cost-effective, clean energy to all.

Resource Potential Findings

- **Efficiency:** substantial additional opportunities for efficiency savings remain; most significant on thermal side.
- **Solar production:** potential is significant for both small and large projects; costs are dropping.
- **Mid-scale wind:** significant remaining potential for projects under 5MW for community wind and installations with collocated commercial load.
- **Biomass:** a lower cost option for many and a local source; sustainability of resource is important.
- **New electric technologies:** advances in technology make air source heat pumps appropriate for NH, allowing customers to heat and cool with electricity.
- **Transportation:** need to plan for integration of EVs and charging infrastructure.

Four Focus Areas of the Strategy

- **Grid modernization** to prepare for additional small-scale local energy resources, and two-way communication and distribution
- Capture cost-effective **energy efficiency** and use other demand-side strategies to reduce usage and lower costs
- Achieve our potential for small scale **clean energy** production
- Increase **transportation choices**

Growing consensus focused on the importance of a modern grid

New York Times - Sept. 13, 2014

Sun and Wind Alter Global Landscape, Leaving Utilities Behind

Wall Street Journal - Mar. 12, 2014

U.S. Risks National Blackout From Small-Scale Attack

Los Angeles Times - Aug. 13, 2013

Power Grid Increasingly Vulnerable to Severe Weather

NE Clean Energy Council

“Electric utilities must now adjust operational practices to accommodate a growing variety of distributed energy resources and modernize their planning processes to fully integrate and take advantage of . . . these advanced energy technologies. Utilities must evolve their business model to adapt to this changing world.”

-Leading the Next Era of Electricity Innovation: The Grid Modernization Challenge and Opportunity in the Northeast, August 2014

New York Times - Mar. 12, 2014

Power Grid Preparedness Falls Short

Promote Grid Modernization

- *1: Open a PUC docket to explore Grid Modernization:*
 - *Topics could include:*
 - *Anticipated future infrastructure needs*
 - *Opportunities to invest in more flexible, resilient systems*
 - *Time varying rates to allow customers to have more control over costs*
- *2: Educate consumers about the benefits of a smarter grid.*
 - *Customers are key to the success of time based rates and smarter technologies.*

Energy Efficiency Context

- Efficiency is the least expensive “source,” costing about 3.8 cents/kWh.
- Numerous reports have identified substantial remaining cost effective efficiency available in NH.
 - 2009 GDS study for the PUC on the potential for energy efficiency in the state, finding that significant additional cost effective efficiency opportunities remain, but noted that NH will not capture them without program and/or policy changes.
 - 2011 VEIC and GDS study for the EESE Board on efficiency and clean energy issues. It reaffirmed the remaining efficiency opportunities, and recommended specific program and policy changes to address this.
 - 2013 VEIC and GDS report detailing how to increase annual efficiency savings significantly. The report noted that NH is missing out on \$355M annually in energy savings and related economic growth.

Adopt Cost Effective Energy Efficiency

- *3: Set an energy efficiency goal*
- *4: Address utility disincentives*
- *5: Improve coordination and design of existing efficiency programs*
- *6: Improve consumer access to financing*
- *7: Better serve the low income population*
- *8: Increase State Lead by Example Efforts*
- *9: Continually Adopt the latest Building Code*

Fuel Choice Context

- Disparities in fuel availability and price impacts communities in attracting and retaining businesses, and residents are struggling with higher prices.
- A balance between grid-scale and distributed resources is essential to the reliability, security, and affordability of our energy system.
- A desire for cleaner energy sources, and for in-state economic benefits.
- In-state resources such as biomass or other renewables increase independence and resiliency.

Increase NH's Fuel Diversity

- *10: Evaluate RPS targets and ACP prices*
- *11: Consider rate design changes to properly value DG*
- *12: Encourage small scale renewable development*
 - *12A: Increase access to and leveraging of private financing*
 - *12B: Continue to expand net metering opportunities*
 - *12C: Expand local renewable property tax exemptions*
 - *12D: Streamline local permitting for small PV systems*
- *13: Increase consumer fuel choice*
 - *13A: Convert customers with existing access to natural gas*
 - *13B: Monitor development of trucked CNG*

Transportation Context

- Transportation is responsible for 35% of NH energy usage, and all gas and diesel (except bio fuels) is imported.
- Electrifying the transport sector can save drivers money. Current estimates of cost equivalent for electric cars are \$1.65 a gallon. Shifting to electric vehicles will reduce our total expenditure on transportation fuels, but we need to prepare.
- Reducing Vehicle Miles Traveled (VMT) and transitioning to more efficient vehicles (which tend to be lighter) not only saves energy, it also reduces wear and tear on our roads (in the past two decades, the cost of paving materials has increased over 400%).

Improve Transportation Options

- *14: Enable and encourage adoption of plug in electric vehicles*
 - 14A: Create a plan for charging infrastructure development
 - 14B: Support development of EV charging infrastructure
 - 14B: Increase Consumer Access to LEVs and ZEVs
- *15: Identify sustainable transportation funding mechanisms*
- *16: Expand and coordinate mass transit*
- *17: Support efforts to maintain & expand rail use*
- *18: Expand ride-share programs and park & ride options*
- *19: Enable active transportation through community planning*
- *20: Reduce unnecessary idling*
 - 20A: Increase education, outreach and enforcement
 - 20B: Encourage use of smart traffic controls

Energy Siting – Appendix D

- SB 99 of 2013 required a review of NH's siting process
- SB 245 of 2014 changed the siting process, including
 - Smaller SEC with 2 public members
 - Changes to SEC considerations in siting
 - Staffing and funding for the SEC
- Overview of new SEC in Appendix D
- SEC has started rulemaking process, go to <http://www.nhsec.nh.gov/projects/2014-04/index.htm> for more information.

Conclusion

- While the Energy Strategy is organized into four chapters, the increasingly interrelated nature of our energy systems requires comprehensive planning and action across sectors.
 - For example, modernizing our electric grid directly affects the ability to expand distributed generation, increase EV infrastructure, and benefit more from energy efficiency savings.
 - Our regulatory models will need to adapt to this energy future.
 - Agencies are already taking action.

Next Steps

- Determine areas of focus for short term implementation?
- Conduct additional analysis of specific options?
- Agency activity – State Lead by Example (HB1129), EE Implementation (PUC, HB1129), Grid Modernization Docket, EV infrastructure efforts, etc.
- Update the Energy Strategy every three years.

The Full Strategy, Appendices, and Public Comments are available at:

<http://www.nh.gov/oep/energy/programs/SB191.htm>