

NAVIGANT

ENERGY

New Hampshire State Energy Strategy: Straw-man Energy Vision

Presented to:

State Energy Advisory Council



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1. » Energy Vision Purpose & Process



2. » Refining the Vision Exercise



3. » Next Steps

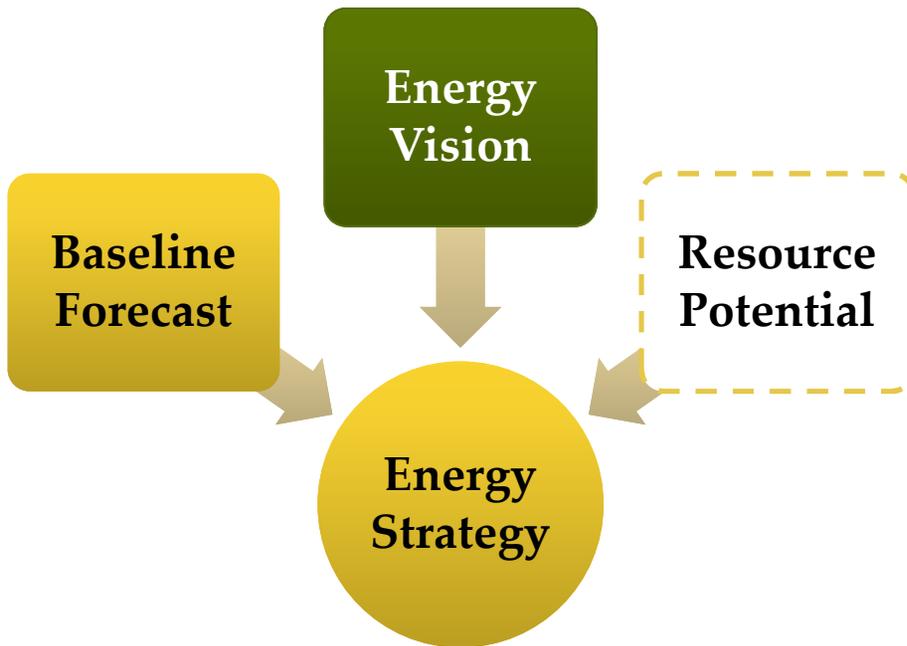


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Navigant will help the SEAC develop an energy vision for 2025 to provide direction for policy recommendations in the energy strategy.



Energy Vision

- a defined, ideal end-state, or target to work towards
- developed in advance of conducting resource potential to keep the vision free from constraints.

Resource Potential Study

- helps bridge the gap between what is projected in the Baseline Forecast, and what is desired in the energy vision.

Navigant followed a three step process to identify which key factors shape New Hampshire's energy future and helped to define the vision.

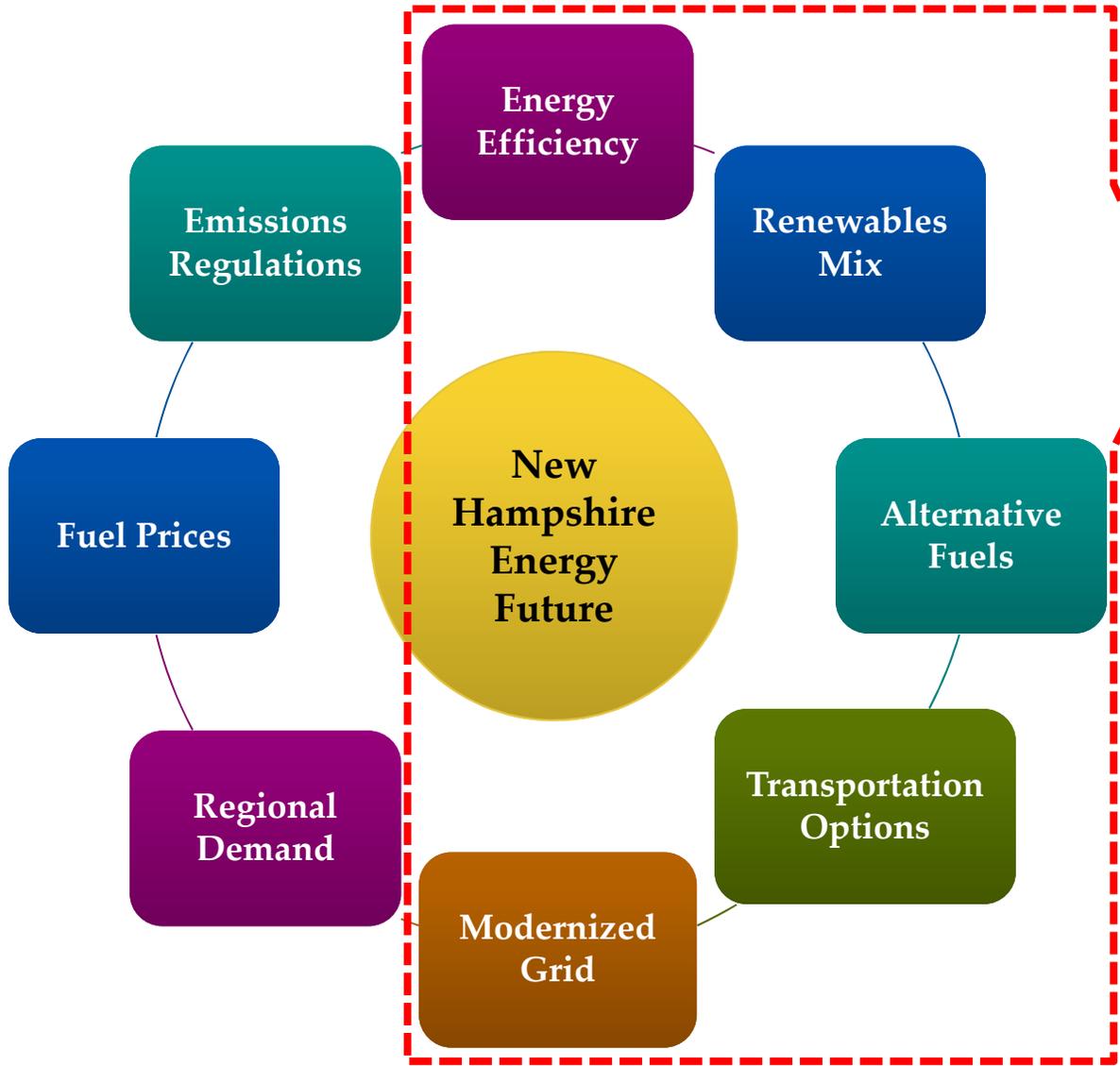
Step 1: Brainstorm to identify the key factors that shape the future state of energy in New Hampshire in 2025

Step 2: Define extremes of each factor and discuss key issues for each

Step 3: Identify which factors NH has a strong ability to influence and have a high level of impact

Develop the vision around the high impact factors which New Hampshire has the greatest ability to influence

Using the baseline energy forecast prepared in Task 2, and feedback from the SEAC, Navigant has identified the following 8 key factors.

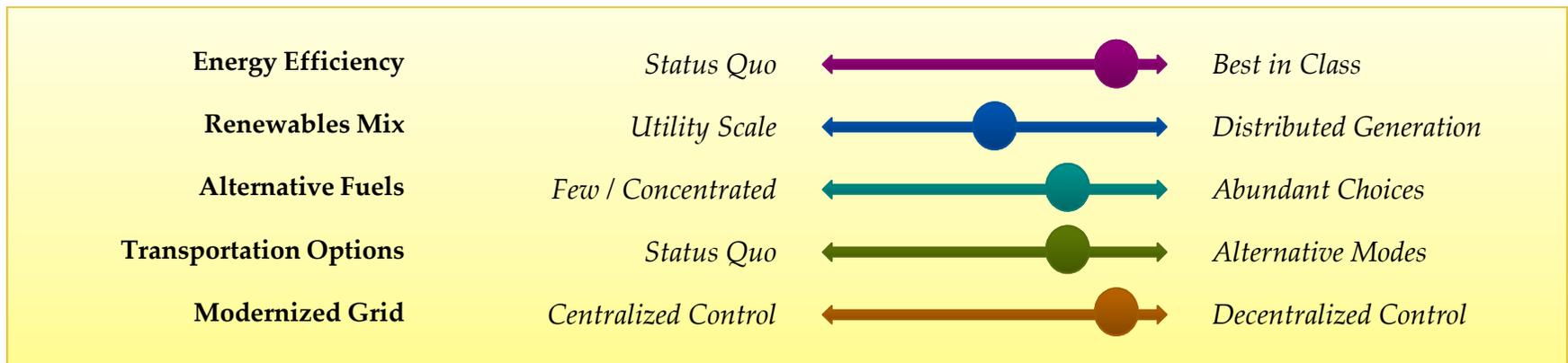


Of the 8 key factors identified, 5 were determined to be high impact, and within the reach NH's ability to influence them.

Navigant proposes these examples of potential elements of a straw man energy vision to facilitate the SEAC’s discussion.

Highlights of the Straw-man Vision:

- *In 2025, New Hampshire’s energy spending adds value to the lives of its residents and the prosperity of its businesses.*
- *New homes, as well as commercial and public buildings produce as much energy as they consume.*
- *The infrastructure, information, and market mechanisms of 2025 empower residents and businesses to better manage their energy bills.*
- *In 2025, many individual businesses and households act as independent power producers, participating in a dynamic energy market powered by distributed generation.*
- *Widespread EV charging infrastructure is the norm across the state and alternative fueling stations dot the highways.*
- *People in New Hampshire also have many options to save money by using public transit, and more communities support new modes of transportation through planned development.*



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Today, we will engage the SEAC to refine the straw-man vision.



Do's

- *Imagine a **desirable** and **credible** end-state energy vision*
- *Focus on the **solutions** to problems as they exist **in 2025***
- *Focus on the **big, high impact issues***
- *Be open to the ideas of others in building the vision*



Don'ts

- *Focus on the problems of today.*
- *Do not try to solve existing problems through the vision*
- *Get distracted by intermediate steps, barriers, etc. Save these for later*

Be Creative and Think Big.

Please read through the straw-man energy vision.

In 2025, New Hampshire's energy spending adds value to the lives of its residents and the prosperity of its businesses. New homes as well as commercial and public buildings produce as much energy as they consume. Nearly all older buildings have benefited from a deep energy retrofit. These efforts incorporate the latest in energy efficient technologies, resulting from flexible policies and programs that allow customers to pick the technologies they wish to use with a focus on the return on investment. Many of these technologies are developed locally in the labs and universities of New Hampshire.

In addition to helping New Hampshire residents and businesses use less energy, the infrastructure, information, and market mechanisms of 2025 empower them to better manage their energy bills and contain costs in other ways. New technology allows users who wish to participate to respond to changing energy prices and other market conditions and to control their energy use and costs themselves. This infrastructure also allows New Hampshire's grid to quickly respond to extreme weather events and other threats, reducing the number and duration of outages and resulting in more resilient grid.

The modernized grid provides economic and security benefits, and also facilitates the integration of widespread intermittent resources, empowering customers to produce their own energy. In 2025, many individual businesses and households act as independent power producers, participating in a dynamic energy market powered by distributed generation. Growth in this sector helps New Hampshire increase its use of local sources of energy, resulting in a significant reduction of pollution and good new jobs.

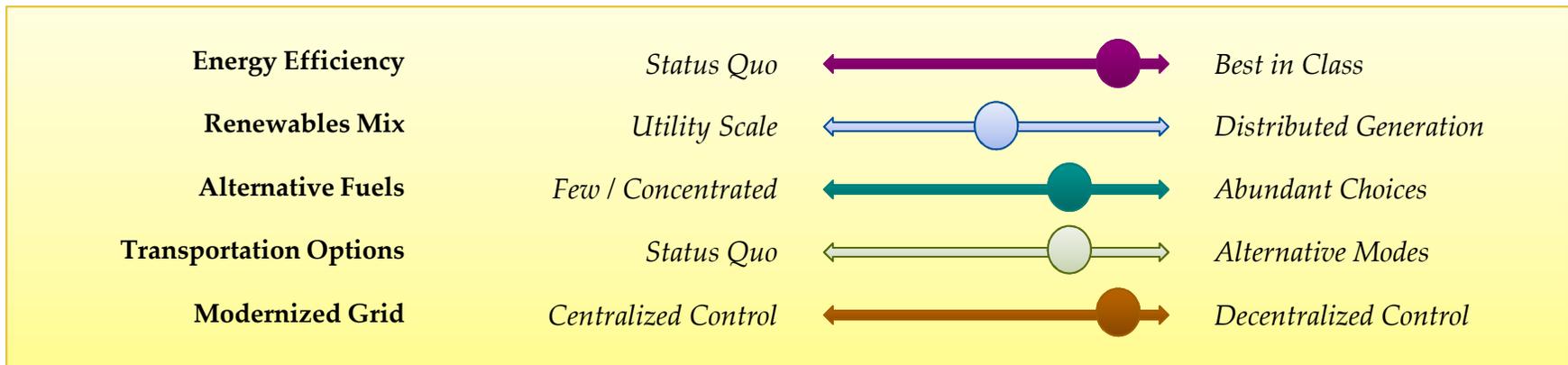
The residents and businesses of 2025 have many options to manage their own energy use and production, and they also have greater choice in the fuels they consume. Residential options for home heating are expanded by a boom in home-grown fuels from well managed forests, and they have access to new technologies for heating and powering homes. The selection and implementation of these technologies is based on customer choice and economic return, and diverse market-based financing mechanisms exist to remove cost barriers for customers of all income levels. Policy stability allows investors of all sizes to feel confident in energy investments made in New Hampshire.

In 2025 increased fuel choices extends to the transportation sector, so that widespread charging infrastructure is the norm across the state and alternative fueling stations dot the highways. Using this infrastructure, residents and business take advantage of the many options for electric vehicles, plug-in hybrids, and other new transportation technologies. People in New Hampshire also have many options to save money by using public transit, and more communities support new modes of transportation through planned development.

New Hampshire's energy landscape in 2025 is efficient, secure, cost-effective, and clean. Residents and businesses have many choices and tools to control their energy use and production. Its policies are stable, yet flexible, and forward looking.

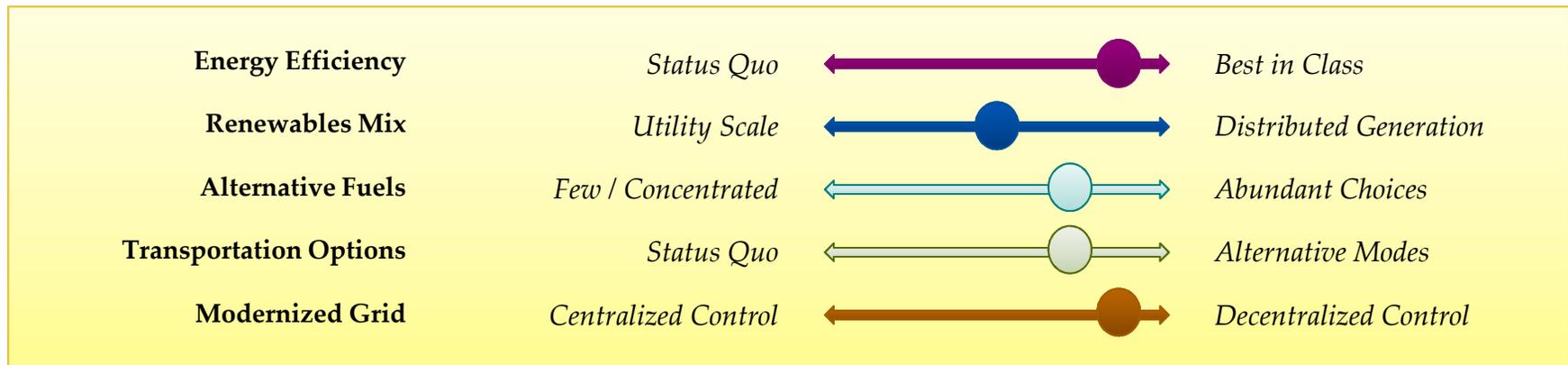
How does New Hampshire ensure the security of its energy systems in 2025?

Criteria	Sub-Criteria	Metrics	Key Questions in 2025
Security	Reliability	Outages	<ul style="list-style-type: none"> How does the grid respond to extreme weather events in 2025? How are consumers engaging in outage response? Is the grid less vulnerable to security threats (cyber security and others) in 2025?
	Resiliency	Time to restore power, flexibility	<ul style="list-style-type: none"> How has resource intermittency been addressed in NH's energy system? How is NH responding to fuel shortages or supply disruptions in 2025?



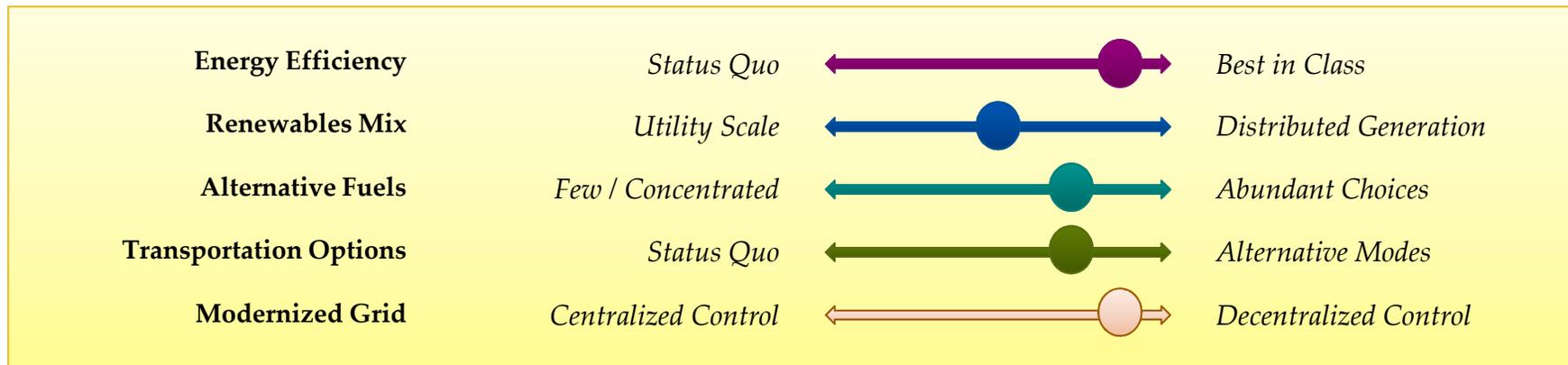
How does New Hampshire realize more economic benefits from its energy systems in 2025?

Criteria	Sub-Criteria	Metrics	Key Questions in 2025
Economics	State Competitiveness	Rank (regional, national)	<ul style="list-style-type: none"> • Are consumers empowered to manage their energy bills? • Has the state lowered its per capita energy expenditures? • In 2025, where is NH ranked among its peers regarding energy efficiency, cost, or emissions? • Do businesses and individuals actively seek to locate operations and settle in NH because of its energy policy in 2025? If so, what is the main driver of this? • What role does NH play in the creation and development of new energy related technology?
	Job Creation	New Jobs (FTE)	
	Affordability	Energy costs, Expenditures	
	Choice	Availability	
	Technology	Investments (CapEx) / Reductions (OpEx)	



How does New Hampshire ensure the sustainability of its energy systems in 2025?

Criteria	Sub-Criteria	Metrics	Key Questions in 2025
Sustainability	Emissions	CO ₂ , NO _x , SO _x	<ul style="list-style-type: none"> Are alternative fuels in both the thermal and transportation sectors helping to reduce harmful emissions and increasing the use of in-state resources?
	Natural Resources	Various	<ul style="list-style-type: none"> Are consumption and development patterns aligned to reduce emissions and improve air quality? How does NH use advances in technology to protect its natural resources?
	Land Use	Acres	<ul style="list-style-type: none"> Do siting requirements in 2025 protect both the atmosphere and landscape of NH?



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Navigant will refine the Energy Vision, and assess the technical and economic potential of energy resources across the state.

Refined Energy Vision

- Finalized by March 7th

Resource Potential Study

- A comprehensive study of the potential of various energy resources and demand management strategies
- Presented on March 7th, with an interactive Webinar for the public to be scheduled for the following week

Policy Development

- Based on the available resources, and their contribution to the vision, develop a database of potential policies
- Develop policy recommendations based on an understanding of the known barriers to implementation

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