

Energy Costs, Sourcing, and Reliability in New Hampshire

Electric Bills, the Energy Mix, And Grid Reliability

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Participants in our first phase raised energy as three connected questions: how much it costs, how reliable it is, and where it should come from. Electric bills are high compared with the national average; the state sits in a regional New England grid where winter fuel prices, peak demand, and imports affect cost and reliability; and residents differ on which sources — from solar and storage to nuclear, hydropower, and other renewables — New Hampshire should encourage. This brief looks at all three together: cost, sourcing, and reliability. It does not recommend a preferred energy source.

WHAT NEW HAMPSHIRE RESIDENTS ARE SAYING

“Electric costs are too high.” [P1] · COST	“Energy resilience — both cost and grid stability — is a crisis.” [P1] · RELIABILITY	“New Hampshire needs to figure out a market-based way to encourage renewable energy and nuclear power that doesn’t rely on subsidies and can’t be gate-kept by utilities.” [P1] · SOURCING
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Participants raised affordability, reliability, and which energy sources to encourage — including solar incentives and a market-based path for renewables and nuclear. These comments show concern and lived experience. They are not used as proof of energy prices, reliability risks, grid threats, or technology performance unless separately supported by public sources.

KEY STATISTICS

23.40¢/kWh EIA’s 2024 residential average electricity price for New Hampshire, above the U.S. average of 16.48¢/kWh. [S1]	Nuclear New Hampshire’s primary in-state electricity source: the Seabrook plant generated more than half of the state’s power in 2024, and New Hampshire is a net exporter† to the regional grid. [S2]	49% / 28% ISO-NE reported natural gas and nuclear supplied about 49% and 28% of New England winter electricity. [S3]	\$4B ISO-NE’s reported winter 2024/2025 wholesale energy market value, up from \$1.6B the prior winter. [S3]
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OPTIONS AND CHALLENGES

The options below are broad directions people could consider. They are not recommendations; each addresses a different part of energy cost, sourcing, reliability, or resilience.

Option family	Problem this responds to	What it might try to change	Key trade-off or challenge	What residents may want to discuss
Expand bill assistance and consumer protection	Some households cannot absorb high or volatile electric bills.	Assistance funding, eligibility, discount design, supplier protections, arrearage management.	Helps with bills now but does not lower underlying system costs.	Who should receive help first, and how should it be funded?
Invest in efficiency, weatherization, and demand response	The cheapest energy is often energy not used, especially during peaks.	NHSaves, weatherization, appliances, building improvements, peak-demand programs.	Upfront costs, contractor capacity, and participation barriers can limit reach.	Which customers should be prioritized?
Support distributed solar, storage, and customer choice	Residents want more control and local resources.	Net metering†, interconnection, storage, community solar, incentives, and low-income access.	Benefits and costs may not be shared evenly; grid integration matters.	How should customer-owned resources be valued and paid for?
Strengthen regional reliability and winter fuel security	Winter demand, fuel constraints, and generator availability can interact.	ISO-NE market rules, transmission, imports, demand response, fuel inventory, storage, and resource adequacy.	Many levers are regional or federal, not New Hampshire-only.	What should New Hampshire push for in regional energy decisions?

Option family	Problem this responds to	What it might try to change	Key trade-off or challenge	What residents may want to discuss
Encourage firm low-carbon resources	Residents want reliable power while considering long-term fuel and emissions trade-offs.	Nuclear, hydro imports, geothermal, long-duration storage, clean firm procurement, renewables paired with storage.	Cost, siting, timeline, market rules, and technology uncertainty vary widely.	How should reliability, cost, and emissions be compared?
Harden and modernize the grid	Storms, cyber risks, and rare high-impact events can threaten service.	Cybersecurity, vegetation management, storm hardening, microgrids, GMD procedures, and emergency planning.	Hardening can be expensive, and rare risks are hard to price.	Which risks deserve public investment?

CROSS-CUTTING TRADE-OFFS

Lower bills now vs. long-term investment: bill relief can help immediately, while reliability upgrades take time and money.

Customer resources vs. regional planning: local solar and storage can help some customers, but New Hampshire still depends on regional reliability.

Markets vs. mandates: competition may lower costs in some areas, while public incentives or rules can target goals markets miss.

Reliability vs. emissions: winter peaks can increase reliance on fossil fuels even as residents consider cleaner options.

Technology neutrality vs. targeted support: neutral rules may encourage competition; targeted support may accelerate specific resources.

Rare risks vs. daily affordability: hardening against rare events can be valuable but may raise bills.

KEY QUESTIONS

1 What should come first: lowering bills, improving reliability, changing the energy mix, reducing emissions, or hardening the grid?

2 Which bill-reduction tools feel fairest: assistance, efficiency, rate design, supplier protections, or new resources?

3 How much should New Hampshire rely on regional markets versus in-state or customer-owned resources?

4 What trade-offs would residents accept for winter reliability?

5 How should solar, storage, nuclear, efficiency, and demand response be compared?

6 Which grid risks should be handled in public conversation, and which require expert technical review?

STATE OF PLAY

New Hampshire electricity prices are high relative to the national average. EIA's annual 2024 data show a residential average price of 23.40 cents/kWh for New Hampshire, compared with a U.S. residential average of 16.48 cents/kWh. EIA's New Hampshire profile reported an all-sector average retail price of 20.61 cents/kWh in 2024, ranked 7th highest nationally. [S1] [S2]

Reliability is regional. ISO New England reported that the grid operated reliably through winter 2024/2025 and that operators did not need emergency actions to maintain reliability. But the

same winter brought higher wholesale market costs, driven by colder weather, higher fuel prices, and higher demand. [S3]

The region's winter mix matters. ISO-NE reported that natural gas and nuclear supplied most New England grid electricity during winter 2024/2025, while oil and coal ran more than in the prior winter during tighter conditions. NERC identified New England as facing elevated risk during more extreme winter conditions, including natural gas transportation constraints and declining dispatchable thermal capacity. [S3] [S4]

HOW THIS WORKS IN NEW HAMPSHIRE

Electric bills are shaped by more than one decision. Customers may see charges for energy supply, delivery, transmission, system benefits, stranded costs, taxes or fees, and other approved items. Some charges are affected by New Hampshire policy or utility regulation; others reflect regional wholesale markets and transmission costs.

New Hampshire is part of ISO New England†, a six-state regional power system. That means reliability, wholesale prices, fuel availability, transmission, imports, and resource adequacy† are regional issues. The state can act through its own programs and by advocating in regional forums, but it does not control

every lever alone. New England generates most of its own electricity, but it produces very little of the fuel that powers it. In 2024, natural gas supplied about half of the region's electricity, nuclear about a quarter, and hydro, solar, wind, and other renewables most of the rest, with net imports around 9%. [S11] Because the region has almost no local natural gas and limited pipeline capacity, winter cold can spike gas—and therefore electricity—prices even when national gas prices are low, and that fuel-price volatility is largely outside any single state's control. [S12]

New Hampshire already has some customer-side tools. The System Benefits Charge† funds public benefits programs, including energy efficiency and low-income programs. The Department of Energy reports that NHSaves programs have

invested hundreds of millions of dollars in electric energy-efficiency measures. Income-qualified customers may also receive electric bill discounts through the Electric Assistance Program. [S5] [S6]

WHERE NEW HAMPSHIRE'S POWER COMES FROM

Residents asked not only what energy costs and how reliable it is, but where it comes from. New Hampshire's own generation looks different from its bills. EIA's New Hampshire profile lists nuclear as the state's primary energy source: the Seabrook plant generated more than half of the state's in-state electricity in 2024, with the rest coming from a mix of natural gas, hydropower, biomass and other renewables, and a small amount of oil. New Hampshire actually generates more electricity than it consumes and sends the surplus to the regional grid. [S2]

Seabrook is New Hampshire's only nuclear plant and the single largest generating unit on the New England grid. It is one of just two operating nuclear plants left in New England—the other is Millstone in Connecticut—after the closures of Vermont Yankee and the Pilgrim plant in Massachusetts. [S13] At the same time,

New Hampshire's in-state options have narrowed in other ways: most of the state's independent wood-fired (biomass†) plants closed or idled around 2018-2019 amid low wholesale prices and the end of state purchase requirements, with effects felt in rural forest-economy communities. [S14]

That is why sourcing and cost are not the same question. Even though New Hampshire produces a large share of low-emission nuclear power and is a net exporter, retail prices are shaped mostly by the regional New England market, where natural gas and nuclear supply most winter electricity and winter fuel prices drive costs. Choices about which sources to encourage next — solar and storage, more nuclear, hydro imports, other renewables, or efficiency that reduces the need for any source — interact with both affordability and winter reliability. [S2] [S3]

HOW NEW HAMPSHIRE COMPARES

New Hampshire's energy discussion starts from a high-price baseline. EIA's 2024 annual data show a New Hampshire residential average electricity price of 23.40 cents per kWh, compared with a U.S. residential average of 16.48 cents per kWh. EIA's New Hampshire profile also ranked the state's 2024 all-sector average retail electricity price 7th highest nationally. [S1] [S2]

Regional comparison matters because reliability is not managed by New Hampshire alone. ISO New England operates the six-state grid, and its winter 2024/2025 recap reported reliable operations but much higher wholesale energy market costs. NERC identified New England as facing elevated risk under more extreme winter conditions. For residents, the comparison question is whether New Hampshire should focus most on state tools, regional market advocacy, customer-side resources, or some combination. [S3] [S4]

WHAT IS CURRENTLY BEING TRIED, PROPOSED, OR DEBATED

Area	What is happening	Why residents may care
Bill assistance	The Electric Assistance Program provides discounts to income-qualified electric customers. [S6]	Direct relief can help households under the most pressure.
Energy efficiency	The System Benefits Charge funds NHSaves and other efficiency and low-income programs. [S5]	Efficiency can lower bills and reduce system demand, but participation and funding matter.
Regional winter reliability	ISO-NE and NERC track winter reliability, fuel constraints, imports, and resource adequacy. [S3] [S4]	Winter conditions can affect both reliability risk and wholesale costs.
Customer-sited resources	Net metering and renewable portfolio policies shape how customer-owned and renewable resources participate. [S8] [S9]	Rules affect solar, storage, customer choice, and who pays or benefits.
In-state generation mix	Several of New Hampshire's independent biomass (wood-fired) power plants closed or idled around 2018-2019 after subsidy bills were vetoed and amid cheap natural gas. [S14]	Plant closures narrow in-state generation options and affect rural forestry jobs; the subsidy question is contested.
Grid resilience	NERC standards and assessments address bulk power system reliability, cybersecurity, and geomagnetic disturbance planning. [S10]	Hardening decisions can reduce risk, but costs and threat likelihood need expert review.

GLOSSARY

† Defined in Glossary.

- **ISO New England (ISO-NE):** The independent operator of the six-state New England power grid and wholesale electricity markets; it manages reliability, dispatch, and regional planning.
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- **Wholesale vs. retail price:** The wholesale price is what generators are paid in regional markets; the retail price is what customers pay on their bills, which also includes delivery, transmission, and other charges.
- **Kilowatt-hour (kWh):** The standard unit of electricity use; residential electricity prices are usually quoted in cents per kWh.
- **Net exporter:** A state that generates more electricity than it consumes and sends the surplus to the regional grid. New Hampshire is a net exporter.

- **Biomass:** Electricity generated by burning wood or other organic material; New Hampshire has several independent wood-fired plants tied to its forest economy.
- **Firm / dispatchable resources:** Power sources that can run on demand regardless of weather (such as nuclear, natural gas, or hydro with storage), as opposed to variable sources like solar and wind.
- **Resource adequacy:** Having enough generation and other resources available to meet expected demand reliably, including during winter peaks.
- **Demand response:** Programs that pay or encourage customers to reduce electricity use during peak periods, lowering system costs and reliability risk.
- **Net metering:** A billing arrangement that credits customers for electricity their on-site renewable system (such as solar or small hydro) sends back to the grid. New Hampshire caps most projects at 1 MW (5 MW for municipal group net metering).
- **Renewable Portfolio Standard (RPS):** A state requirement that utilities obtain a set share of their electricity from qualifying renewable sources.
- **System Benefits Charge (SBC):** A charge on electric bills that funds public-benefit programs, including energy efficiency (NHSaves) and low-income electric assistance.

SELECTED SOURCES

Source key: ‘P’ sources are Forum process inputs, such as Phase I resident input. ‘S’ sources are public source materials used for factual, legal, program, or background claims.

- **[P1]** Phase I Input: ../00-phase-i-intake/phase-i-input.md
- **[S1]** U.S. Energy Information Administration, Electric Sales, Revenue, and Average Price: https://www.eia.gov/electricity/sales_revenue_price/
- **[S2]** U.S. Energy Information Administration, New Hampshire Electricity Profile 2024: <https://www.eia.gov/electricity/state/Newhampshire/index.php>
- **[S3]** ISO New England, Winter 2024/2025 recap: <https://isonewswire.com/2025/04/11/winter-2024-2025-recap-regions-grid-remains-reliable-though-cold-weather-drives-up-wholesale-electricity-prices/>
- **[S4]** North American Electric Reliability Corporation, 2024-2025 Winter Reliability Assessment: https://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC_WRA_2024.pdf
- **[S5]** New Hampshire Department of Energy, System Benefits Charge Annual Report: <https://www.energy.nh.gov/sites/g/files/ehbemt551/files/inline-documents/sonh/system-benefits-charge-report-2025.pdf>
- **[S6]** New Hampshire Department of Energy, Electric Assistance Program: <https://www.energy.nh.gov/consumers/help-energy-and-utility-bills/electric-assistance-program>
- **[S7]** New Hampshire Department of Energy, 2024 State Energy Strategy: <https://www.energy.nh.gov/energy-information/nh-10-year-energy-strategy/2024-state-energy-strategy>
- **[S8]** New Hampshire Department of Energy, Net Metering: <https://www.energy.nh.gov/renewable-energy/net-metering-and-group-net-metering/net-metering>
- **[S9]** New Hampshire Department of Energy, Renewable Portfolio Standard: <https://www.energy.nh.gov/renewable-energy/renewable-portfolio-standard>
- **[S10]** North American Electric Reliability Corporation, reliability and resilience materials: <https://www.nerc.com/>
- **[S11]** ISO New England (ISO Newswire), ISO-NE publishes amounts, sources of electric energy used to meet demand in 2024 (2024 resource mix): <https://isonewswire.com/2025/01/28/iso-ne-publishes-amounts-sources-of-electric-energy-used-to-meet-demand-in-2024/>
- **[S12]** ISO New England, 2024 Annual Markets Report: <https://www.iso-ne.com/static-assets/documents/100023/2024-annual-markets-report.pdf>
- **[S13]** Portland Press Herald, Nuclear power is making a comeback in the U.S. But not in Maine (Seabrook and Millstone are New England's two operating nuclear plants): <https://www.pressherald.com/2024/12/01/nuclear-power-is-making-a-comeback-in-the-u-s-but-not-in-maine/>
- **[S14]** New Hampshire Public Radio, Layoffs Begin At Embattled N.H. Biomass Plants After Subsidy Plans Fail: <https://www.nhpr.org/business-and-economy/2019-10-18/layoffs-begin-at-embattled-n-h-biomass-plants-after-subsidy-plans-fail>

Source note: Sources include official data and public records, research and local reporting, and stakeholder perspectives. Claims based on stakeholder perspectives are identified as viewpoints rather than neutral facts.

Process note: This issue brief is intended to support real-time community conversations on the described issue. It was produced using a blend of AI-assisted research and design, internal team review, and external expert review where available. We acknowledge the possibility of errors, omissions, and unintended biases.

Review note: This version (v2) incorporates an external New Hampshire policy expert review for accuracy and balance. Individual reviewers are named only with their permission.