

Electricity Cost Drivers: Why Prices in the Northeast are Climbing

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The Northeast U.S. has some of the highest electricity costs in the country, but not for the reasons some would like the public to believe. Below, this fact sheet examines the true drivers behind both historic costs and recent price increases. The top real drivers of rising electricity costs in this region include:

- **Fossil fuels and volatile supply costs:** Volatile fuel costs drive up electricity prices—as evidenced by higher electricity prices in states with higher natural gas penetration.
- **Utility Business Models and Oversight:** Investor-owned utilities are incentivized to deploy costly solutions under current business models, and at the transmission level, projects often lack oversight to ensure they are cost-effective. As a result, transmission and distribution costs are rising, and low-cost technologies are overlooked.
- **Storms, Trees, and Aging Infrastructure:** the Northeast is heavily forested and has aging grid infrastructure. During severe storms, which have and are projected to continue increasing in frequency, tree impacts lead to grid outages and skyrocketing storm response costs.



Fossil Fuels

THE COSTS IN PLAIN SIGHT

A primary driver of electricity prices in the region is the **price of natural gas**. Gas commodity prices are volatile, spike during extreme events, are tied to international markets, and are forecasted to increase in the coming years.

- Gas and its volatility are major reasons why New England has spent between **\$9.5 and \$17 billion on wholesale electricity costs** per year in the last 4 years.¹
- **Fuel and purchased power (FPP) is the largest expense** for major US electric utilities, followed by operations & maintenance (O&M), depreciation, general and administrative costs, and then “taxes and other.”²
- Based on [Acadia Center's analysis](#), states with higher natural gas penetration have an observed trend of higher electricity prices nationally—a trend that is statistically significant in the Northeast region.

For more information on gas cost drivers, see [Acadia Center's Natural Gas Fact Sheet](#).

THE HIDDEN COSTS OF FOSSIL FUELS

There are two types of “hidden” energy costs with regard to fossil fuels. **The first type of hidden fossil fuel cost are the externalities, affecting everything from human health to insurance rates and GDP.**

As seas rise and storms worsen, customers are also paying more outside of utility bills:

- Many real fossil fuel costs are borne other places: ecological costs,³ environmental pollution,⁴ medical costs and excess deaths due to pollution,⁵ weather emergency costs,⁶ as well as knock-on economic costs.⁷ New research also links particulate matter pollution to increased risk and severity of dementia.⁸
- The average US homeowner's insurance premiums increased 8.7% faster than inflation from 2018–2022, with sharp spikes in climate-exposed regions.⁹
- A National Bureau of Economic Research study finds that households are already paying between \$400 and \$900 annually due to climate-driven costs (considering only a subset of all costs).¹⁰

Broader economic impacts are also occurring:

- Global long-run GDP per capita is estimated to decrease by 22-34% if the world were to experience a permanent 1.8°F increase in global temperatures.¹¹
- Other work estimates that there is a 79% chance that US GDP will be negatively affected by climate change in 2100, with an average expectation of 4% loss in GDP relative to if temperatures remained unchanged after 2024, and a 5% chance that the GDP is at least 21% lower than it otherwise would be;¹² and, if extreme global temperature change scenarios are realized, the US and global GDPs would be reduced 65% and 73%, respectively, compared to a scenario with no climate change.¹³

The second type is total home energy expenditures. This includes the energy for lighting, heating and cooling your home, as well as transportation (i.e., gasoline). Often, the cost of energy for transportation is considered separately from electricity bills, hidden from conversations around household energy. However, total household energy expenditures, aggregating home and transportation costs, is a more comprehensive view of the impacts of energy on monthly household expenses.

- In 2023, New England spent \$72.2 billion on total energy expenditures, and **67%** went to oil and gas.¹⁴
- When taken as a whole, as the economy is electrified, household expenditures are projected to [decrease over time in the Northeast](#), largely driven by activities like EV adoption.
- Massachusetts had similar findings in its 2050 Climate and Clean Energy Plan (CECP): **by 2050**, efficiency gains from electrification are expected to reduce household energy costs by 13% from 2030 levels, for an average savings of nearly \$600 per year (2021 dollars).¹⁵



Utility Business Models

In regulated investor-owned utility markets, profits are tied to the size of the **rate base**, which consists of physical assets used to deliver electricity (e.g., utility poles and wires). Utilities earn a regulated rate of return on these assets, so expanding the rate base through capital projects—such as grid upgrades, storm hardening, or infrastructure replacements—directly increases earnings. The more expensive the project is, the more guaranteed return the utility receives – perpetuating a strong incentive for utilities to implement expensive solutions absent reforms.

In contrast, publicly-owned utilities do not need to maximize their rate base because they do not have to maximize profits for shareholders. This also allows publicly-owned utilities to invest a higher percentage of revenue back into the electric grid. Investor-owned utilities have seen electric rates rise faster than publicly-owned ones. From 2022-2024:

- Investor-owned-utility (IOU) residential electricity rates have increased **49% more than inflation**.
- Their publicly-owned counterparts have increased **44% less than inflation**.¹⁶



Utility Planning and Oversight

Utilities *should* invest prudently to make the grid reliable, resilient, and clean. This means ensuring cost effective technology solutions are considered in grid planning, such as virtual power plants, non-wires solutions, and grid-enhancing technologies, in addition to traditional poles and wires upgrades. Unfortunately, rising spending on electricity distribution—the poles and wires that deliver electricity from substations to customers (homes and businesses)—has focused on traditional/business-as-usual solutions both for infrastructure (CapEx) and operations and maintenance (OpEx), as evidenced by **costs outpacing inflation and other categories of expenditure** (generation, transmission, and other).¹⁷

- Between 2019-2023: distribution operations and maintenance costs are up by over 20%; and distribution capital expenditures are up by over 40%.¹⁸

Grid-enhancing technologies (GETs)*: Widespread GETs deployment could reduce wholesale energy costs nationwide by **over \$5 billion annually** by alleviating transmission congestion and also improve grid reliability and mitigate the impacts of grid outages.¹⁹

- GETs implementation can cost less than 5% of the annual congestion costs they can help eliminate, and they are often cheaper than traditional transmission solutions.²⁰
- GETs pair well with transmission buildout, helping to increase utilization of new lines by up to 16%, improving project economics.²¹

Virtual power plants (VPPs):** The net cost to the utility/system operator for providing resource adequacy from a VPP is about 40–60% of the cost of generation and storage alternatives, meaning that 60 GW of VPP deployment could reduce costs nationwide by \$15–35 billion over a decade—before considering up to \$20 billion in additional societal value in the form of greenhouse gas reduction and improved resilience.²²

- An existing VPP program in Vermont saves customers over \$3 million annually and provides backup power to customers during storms.²³
- VPPs can be implemented in as little as **6–12 months**, avoiding multi-year transmission upgrades.²⁴

Non-wires solutions (NWSs)*:** When Connecticut mandated electric utilities propose up to three NWSs to demonstrate how battery storage can improve resilience, all three projects United Illuminating proposed were more cost-effective than traditional poles and wires upgrades.²⁵

- The Brooklyn-Queens Demand Management Program avoided a \$1 billion upgrade. It became operational in 2014, and as of August 2017 had net benefits of \$94.9 million.²⁶

While distribution utilities in regulated markets have regulators to scrutinize the prudence of their investments, there is a need for increased oversight of **transmission-level Asset Condition Projects (ACPs)**. While ACPs are projects that replace aging or deteriorating electric grid equipment to maintain reliability, proposed project designs must be scrutinized to ensure both prudence and optimized sizing for future needs.

- Spending on ACPs rose from \$58 million in 2016 to over \$1 billion in 2024—with over \$1.4 billion projected for 2026.²⁷
- The Northeast has the highest transmission costs in nation: \$5.90 on transmission for every MWh of demand served, in part because of skyrocketing ACP spending.²⁸ Transmission rates in New England account for 30% of wholesale energy costs.²⁹

* **Grid-enhancing technologies** are advanced hardware and software—such as dynamic line ratings, power flow control devices, and advanced sensors—that increase the usable capacity and efficiency of existing grid infrastructure. They differ from VPPs by acting directly on *wires and substations rather than customer-side assets*, and they overlap with non-wires solutions when utilities deploy them instead of building new transmission or distribution lines.

** **Virtual power plants** are networks of distributed energy resources—such as rooftop solar, batteries, electric vehicles, and smart appliances—coordinated through software to operate like a single power plant. They differ from non-wires solutions and grid-enhancing technologies in that VPPs focus on *operational coordination of customer-sited assets*, though VPPs can be used as a non-wires solution when they defer or replace grid upgrades.

*** **Non-wires solutions** are planning and procurement approaches that avoid or defer traditional grid infrastructure investments (like new substations or lines) by using resources such as energy efficiency, demand response, storage, or VPPs. Unlike VPPs or grid-enhancing technologies, NWS is *not a specific technology*, but a category that can include both VPPs and, in some cases, grid-enhancing technologies if they meet the same grid need at lower cost.



Storms, Trees, and Aging Infrastructure Increase Restoration Costs

NATIONALLY, AND IN THE NORTHEAST, OUR INFRASTRUCTURE IS AGING

Much of the electric grid was built 50-75 years ago, and it is struggling to keep up with both hazardous weather events and modern energy demands.³⁰ For example, about half of the transformers in the United States—devices that adjust electricity to the right voltage for safe and efficient delivery—are approaching their “end-of-life.”³¹ Poles and other infrastructure that we count on to deliver electricity reliably are also aging.

THE NORTHEAST IS HEAVILY FORESTED, AND STORM HAZARDS ARE INCREASING

States in the Northeast are heavily forested, ranging from 53% in RI to 89% in ME, as compared to 36% nationally.³² These trees cause outages and damage to the electric grid. For example, while only about 16% of all outages nationally are caused by trees,³³ for one utility in New York (a state ~62% forested), over half of all outages are due to trees.³⁴ Another utility that operates in Connecticut, Massachusetts, and New Hampshire, reported that about 90% of outages on their electric system during storms with heavy wind or snow are due to tree impacts.³⁵ These outages and system damages are expensive, adding to already outsized storm restoration costs.

- The number of annual billion-dollar disasters (CPI-adjusted) in the U.S. has increased from 3.3 in the 1980s to 23 between 2020 and 2024.³⁶ Since the 1950's, extreme precipitation events are increasing in regularity in the Northeast, with event frequency expected to continue increasing due to climate change.³⁷

Of 137 studies looking at how much climate change affected the intensity, frequency or impact of extreme weather events—from storms, to wildfires, snow and ice, and more—in North America, nearly a quarter (73%) found the weather events were more severe because of climate change.³⁸

- 20 out of 22 studies focused on storms found the storms were made more severe by climate change, with the other 2 having inconclusive results. Only 14 studies found that climate change made the storms less severe—and half of those were snowstorms.

THE COMBINED IMPACT IS INCREASED COSTS

Nationally:

- About 36% of all GDP growth since 2000 is spent on recovering from or preparing for disasters, including about **\$1 trillion** in the 12-month period ending in June 2025.³⁹
- The annual CPI-adjusted cost of billion-dollar disasters in the US have increased from ~\$22 billion to ~\$149 billion from the 1980s to the 2020s (2020-2024).⁴⁰ This is money spent on insurers, waste removal, and restoring the power grid—money that could otherwise be spent on improving quality of life.

In the Northeast:

- One electric utility—National Grid—has a budget that accounts for ~4 major storms per year, based on past years. However, in 2020, in Massachusetts, where the utility operates, there were 14 major storms. In 2021 and 2022, there were nine each year, and **the company spent more than \$100 million more than budgeted for storm repair costs.**⁴¹
- In Connecticut, Eversource **asked ratepayers to pay \$634 million in storm response costs for 24 events across 4 years**, of which only 2 events made up 60% of the cost.⁴² The request amounted to **\$5 per month for 6 years** from customers on average.⁴³

For more information on energy cost drivers, please visit Acadia Center's website at www.acadiacenter.org.

Endnotes:

- 1 [Consumer Liason Group Meeting - ISO NE Update | ISO New England](#)
- 2 [Retail Electricity Price and Cost Trends - 2024 Update | LBNL & NREL](#)
- 3 [Ocean Acidification: The Other CO2 Problem | NRDC](#)
- 4 [Health & Environmental Effects of Air Pollution | MassDEP](#)
- 5 [Fossil fuel air pollution responsible for 1 in 5 deaths worldwide | Harvard T.H. Chan School of Public Health](#)
- 6 [2020 U.S. billion-dollar weather and climate disasters in historical context | NOAA Climate.gov](#)
- 7 [Mapped: How climate change affects extreme weather around the world | Carbon Brief](#)
- 8 [Exposure to air pollution worsens Alzheimer's disease, Penn research finds | PennMedicine](#)
- 9 [FIO data reveals sharp rise in homeowners premiums in climate-exposed ZIP codes | Insurance Business](#)
- 10 [Who Bears the Burden of Climate Action? Working Paper 34525 | National Bureau of Economic Research](#)
- 11 [The Macroeconomic Impact of Climate Change: Global vs. Local Temperature - Working Paper 32450 | National Bureau of Economic Research](#)
- 12 [The Effects of Climate Change on GDP in the 21st Century - Working Paper 2025-02 | Congressional Budget Office](#)
- 13 [Climate Emergency: Tipping the Odds in Our Favour | Institute and Faculty of Actuaries](#)
- 14 [State Energy Data System 2023: Prices and Expenditures - Table E8. Primary energy, electricity, and total energy expenditure estimates | EIA](#)
- 15 [Clean Energy and Climate Plan for 2050 | Massachusetts Executive Office of Energy and Environmental Affairs](#)
- 16 [Rate of Return Equals Cost of Capital: A Simple, Fair Formula to Stop Investor-Owned Utilities From Overcharging the Public | American Economic Liberties Project](#)
- 17 [Retail Electricity Price and Cost Trends - 2024 Update | LBNL & NREL](#)
- 18 [Retail Electricity Price and Cost Trends - 2024 Update | LBNL & NREL](#)
- 19 [Grid technology could save billions but for a policy vacuum | UtilityDive](#)
- 20 [Building a Better Grid: How Grid-Enhancing Technologies Complement Transmission Buildouts | The Brattle Group](#)
- 21 [Building a Better Grid: How Grid-Enhancing Technologies Complement Transmission Buildouts | The Brattle Group](#)
- 22 [Virtual Power Plants \(VPPs\) Could Save US Utilities \\$15-\\$35 Billion in Capacity Investment Over 10 Years | The Brattle Group](#)
- 23 [A \\$55/month Tesla Powerwall lease program in Vermont just got a lot bigger | electrek; Green Mountain Power Kept 1,100 Homes Lit Up During Storm Outage | Greentech Media](#)
- 24 [Virtual Power Plants - Electricity Affordability Toolkit | RMI](#)
- 25 [CT PURA Docket 22-06-05 Motion No. 3 | The United Illuminating Company; CT PURA Docket 22-06-05 Final Decision | CT PURA](#)
- 26 [BQDM program demonstrates benefits of non-traditional utility investments | Utility Dive](#)
- 27 [From poles to pipelines: Unpacking soaring energy bills in Mass. | Boston Globe](#)
- 28 [CT General Statutes - Section 16A-3A 2025 Integrated Resources Plan - Transmission Solutions White Paper | CT DEEP](#)
- 29 [2024 Annual Markets Report | ISO New England](#)
- 30 [Aging Electric Infrastructure in the United States | University of Wisconsin College of Engineering - Interdisciplinary Professional Programs; What Does It Take to Modernize the U.S. Electric Grid? | U.S. Department of Energy](#)
- 31 [Half of Distribution Transformers Are Approaching End of Life. | PV Magazine USA](#)
- 32 [2023 Forest Inventory and Analysis Business Report \(Table B-11\) | US Forest Service Research and Development](#)
- 33 [The Cost of \(Not\) Cutting Trees | American Public Power Association](#)
- 34 [NYSEG Begins Tree Trimming Across Entire Service Territory to Increase Reliability | NYSEG](#)
- 35 [Understanding Vegetation Management – Balancing Natural Beauty with Reliable Electric Service | Eversource](#)
- 36 [U.S. Billion-Dollar Weather and Climate Disasters \(2025\) | NOAA National Centers for Environmental Information \(NCEI\)](#)
- 37 [Extreme Precipitation | U.S. Environmental Protection Agency](#)
- 38 [Mapped: How climate change affects extreme weather around the world | Carbon Brief](#)
- 39 [How Climate Disasters Turned Into a Trillion-Dollar US Industry | Bloomberg](#)
- 40 [U.S. Billion-Dollar Weather and Climate Disasters \(2025\) | NOAA National Centers for Environmental Information \(NCEI\)](#)
- 41 [National Grid wants to raise electric rates to pay for storm damage from 2 years ago | CBS Boston](#)
- 42 [2024 Annual Report | CT PURA](#)
- 43 [Dan Haar: Eversource asking customers to pay \\$634M bill for CT storms | CTInsider](#)

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