

Executive Summary

Tennessee's energy system is diverse, relying on a portfolio of sources to supply many uses.

This system has served residents well. Over much of the past 15 years, Tennessee residents and businesses have enjoyed low and stable energy prices, fueling the state's economic and population growth. Tennessee enjoys the **8th lowest state-level residential electricity prices** and the **5th lowest state-level industrial electricity prices** ([EIA](#)). But prices have been trending higher in recent years, both nationally and in Tennessee. (See *Figure ES-1*)

Today the state faces a possible inflection point that puts **energy at the forefront of economic policy**. Going forward, Tennessee faces four important energy challenges.

Four Energy Challenges

1. Electricity load growth

For a variety of reasons, including new energy-intensive general use technologies (e.g., artificial intelligence), **electricity demand growth is positive after decades of being close to zero**. The load growth is concentrated in certain parts of the state, amounting to 1.9 percent over the past year. This realized growth in Tennessee is slower than in other parts of the country, but much faster than over the preceding 15 years. (See *Figure ES-2*, which does not include 2024 load growth of 1.9 percent.)

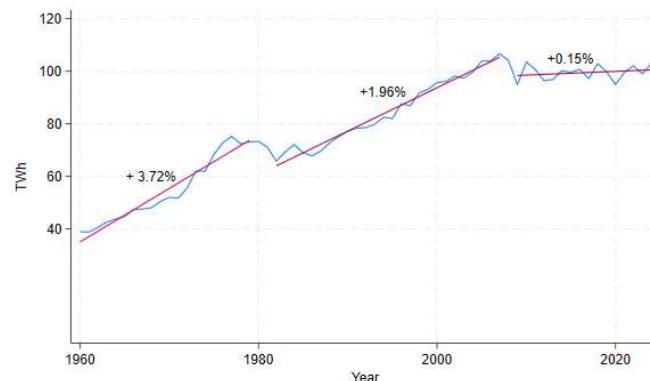
Looking forward, anticipation of continued load growth at rates not seen since before the financial crisis contributes to thinking about energy policy. Recent upward revisions in forecasts contribute to the urgency around serving growing demand.¹ Forecasts are uncertain, but supporting additional

Figure ES-1: Tennessee and U.S.
Monthly Nominal Average Retail Electricity Prices, 2001-2025



Source: Baker School calculations using EIA data

Figure ES-2:
Tennessee Annual Electricity Load Growth, 1960-2023



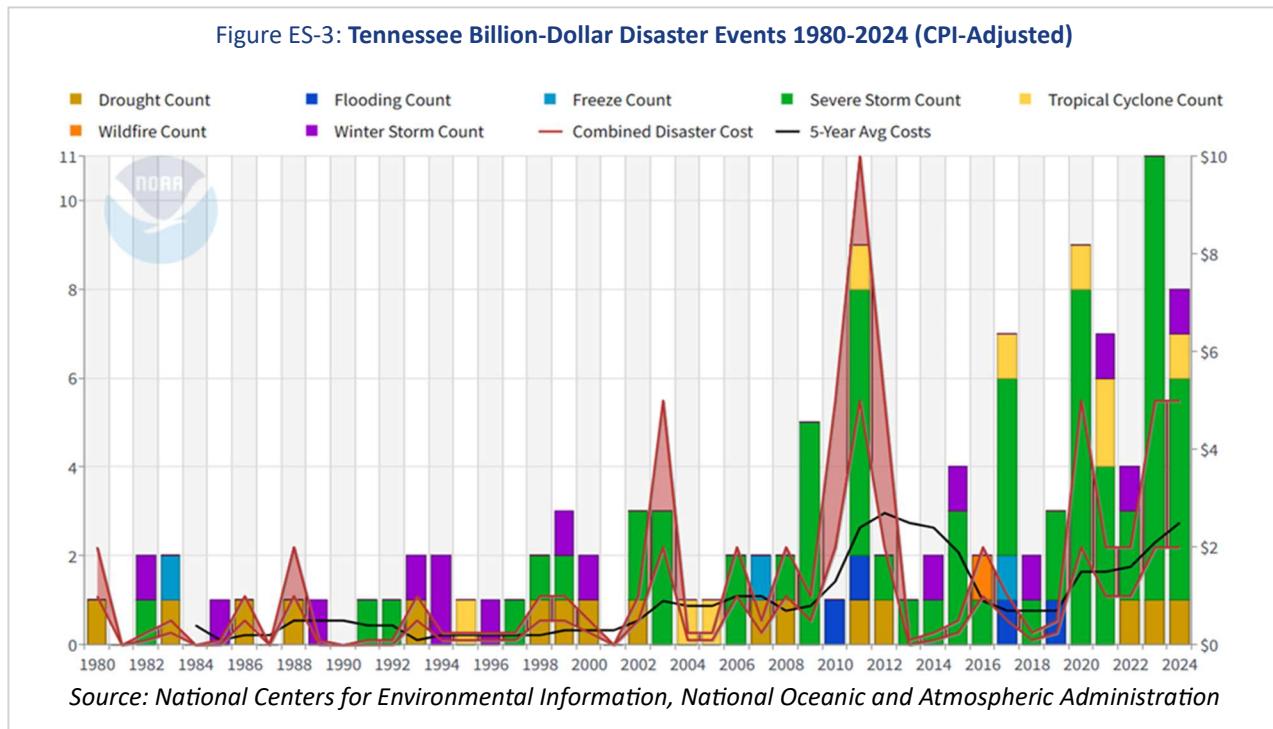
Source: Baker School calculations using EIA data

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electricity use growing at annual rates of 2-3 percent would **require doubling the scale of the electricity system in coming decades.**

2. Physical shocks

Disruptions from weather and other sources affect both energy demand and supply and have arrived with increasing frequency in Tennessee. (See Figure ES-3.) These shocks can lead to critical peak demands for energy services and simultaneously interrupt the supply system. Shocks beyond weather affecting the state itself, including from cyberattacks and supply interruptions elsewhere, have also affected the state in recent years. The future energy system needs to be prepared for future disruption, including by diversifying sources of energy and providing for redundancies that increase both the robustness and resilience of the system.



3. Fuels Volatility

Tennessee is an energy importer and is connected to distant markets in ways that present both physical and financial risks to state residents. The reliance on fuels is one example. As the electricity system grows more reliant on natural gas, the ability to ensure timely delivery of fuel is a paramount concern. Recent disruptions in natural gas supply have raised consciousness of the cost of interruption. Similarly, price fluctuations due to distant causes pose cost risks for the state. Tennessee energy users must compete for fuels in an increasingly connected global marketplace.

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4. Affordability and competitiveness

Maintaining affordable energy supplies is important for residents and businesses. The Tennessee economy has built a strong manufacturing base in part thanks to affordable and reliable energy supplies. Maintaining that base through a period of growth will require careful attention to balancing the costs of new infrastructure that will ultimately be paid by end users.

To meet the challenges facing the state, Tennessee's leaders may consider **three main strategies to support a secure and affordable energy future.**

Future Energy Strategies

Facilitate Growth

Tennessee's energy system will need to expand, including the construction of additional generation and transmission assets. Efforts to increase efficiency can bend the curve on needed supply additions, but efficiency alone cannot meet the energy challenge. Permitting is mostly possible, but navigating the process of winning local acceptance and managing financial risks of long-lived capital-intensive investments can be aided by policymakers.

Embrace Innovation

Embracing innovation locally and beyond the borders of Tennessee is a second important strategy. While innovative technologies are not well-suited for immediate challenges, in the long run they are essential. Opportunities exist in advanced nuclear technology, critical minerals, hydrogen technology, and batteries. Immediate solutions must rely on demonstrated technology, but prospects of new efficiencies and markets depend on continued investment in research and development today. Like infrastructure costs, the costs of successful innovations will ultimately be paid by end users. The ability for Tennessee to export energy technology to other parts of the country and other parts of the world increases the customer base that can pay for successful innovations.

Minimize Policy Uncertainty

Providing clear and certain energy policy will help attract investment and ultimately lower the cost of delivering energy. New construction costs will ultimately be borne by end users. Acceptance of those costs depends on effective engagement. Policy incentives for particular supply options, whether renewables or nuclear or fossil, impact relative prices and lead investors to make different choices. Unanticipated changes in the policy menu can contribute to uncertainty about the future, deterring investment and leading to higher-cost decisions. Whipsawing policy raises construction costs and the costs of meeting the energy challenge. Policy continuity across political cycles reduces adjustment costs and facilitates the lowest possible cost.