

Texas Electric Grid 101: Your Questions Answered

How much electric power are we going to use this summer?

In May 2024, Texas [set six records for daily power consumption](#). And with summer temperatures forecast to be above normal again, more electricity will be needed to cool our homes and businesses.

Over the past decade, total consumption has increased by 29% (379,000 MWh to 487,000 MWh) but generation has increased by 25% from 433,000 MWh to 541,000 MWh, according to EIA numbers.

Can Texas handle the electric demand during summertime?

A recent report by the [North American Energy Reliability Corporation](#) found that Texas has an elevated risk of not having sufficient operating reserves should demands skyrocket during the summer.

Texas' elected officials and state grid operators are well aware of these issues, as net electric generation has not been able to keep up with our booming population and economy.



In June 2024, the Electric Reliability Council of Texas reported that there will be [a 16% chance of an electric grid emergency and a 12% chance of rolling blackouts in August](#).

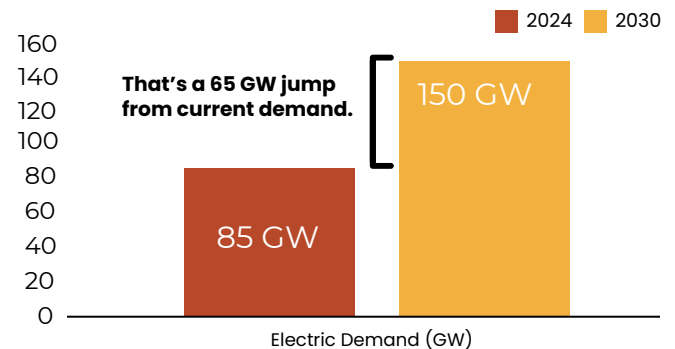
ERCOT predicts the grid would be most stressed between 8 p.m. and 9 p.m. when solar energy production goes away and wind energy could become more variable.

How much electricity will we need in the future?

In June 2024, the Public Utility Commission of Texas (PUC) said [ERCOT expects power demand to nearly DOUBLE by 2030](#), increasing from 85 gigawatts to 150 gigawatts.

The PUC expects 60% of the new demand to come from Bitcoin mining and data centers, including those run by artificial intelligence.

Projected Electric Demand 2024–2030



Source: ERCOT (June 12, 2024)

Want to learn more?

Watch [PUC's testimony](#) on the state's energy demand.

Texas 2036 highlights growing need for energy

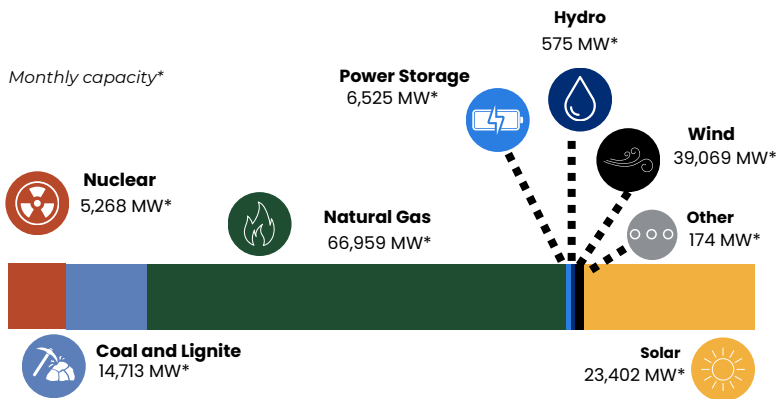
In March 2024, Texas 2036 released the [Future of Texas Energy](#) dashboard, which projected a doubling of power would be needed between now and 2050.

Given these new ERCOT projections, we're now looking at potentially doubling even that estimate.



Source: The Future of Texas Energy

How do we generate the power we need?



Source: ERCOT Fuel Mix data (June 13, 2024)

Today, Texas' electric power comes from a mix of different resources including natural gas, coal, solar, wind and nuclear power along with a few others.

The Big Picture: We need to embrace what Texas 2036 likes to call an **"all of the above"** energy policy in which all energy technologies are adopted to create the most reliable and affordable electric grid of the future.

Texas has several new generation options to generate more power.

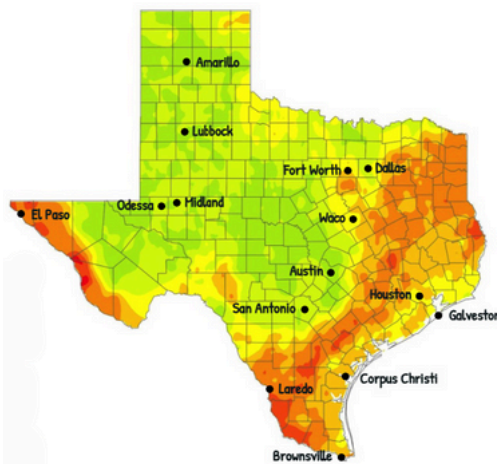
Small Nuclear Reactors

Nuclear power is clean, predictable and reliable, and new small reactors **are getting a lot of attention**.

A long-term strategic plan will be necessary to create the right path for bringing more nuclear energy to Texas.

Geothermal Energy

Maps and data show that the amount of heat energy underneath Texas is estimated to be **many thousands of times larger** than what we would need to power not only our state, but the world. And geothermal energy is clean, abundant, always on, and has a smaller surface footprint than other energy sources.



Source: Adapted from SMU Geothermal Laboratory

Battery Energy Storage

Battery storage has been nicknamed the **"Holy Grail"** of the electric industry, as once electric power is produced, it needs to be consumed.

As of November 2023, Texas had **3.2 gigawatts of storage**, second to California, and that capacity is **expected to double this year to 6.4 GW**.

What will homeowners' electric bills look like?

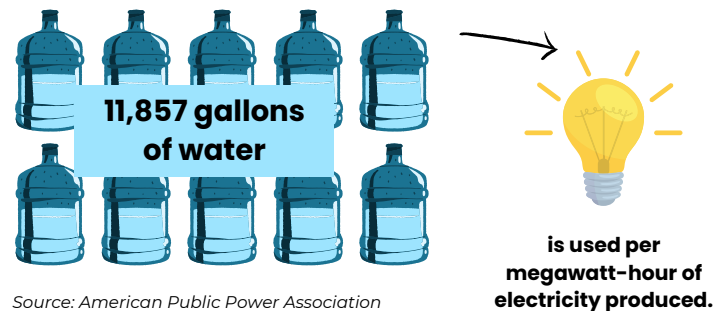
In August 2023, at the height of residential electric consumption, the average electric bill in Texas was \$255 — 38% more than at the same time in 2014.

This trend could continue under current conditions. The **average retail price of electricity in Texas** has increased by 94% since 2001, from 7.68 cents per kilowatt hour to 14.92 cents per kWh.

Worried about your electric bill this summer?

What are you doing to trim your electricity usage? Tell us all about it at texas2036.org.

Two challenges to think about in the future.



Source: American Public Power Association

Water

For a majority of sources of energy (not including solar or wind), generating electricity requires quite a bit of water. As Texas faces significant water challenges with rising temperatures, the role water plays in our electric generation will be key.

Transmission

State senators **met in June 2024 to discuss the future transmission needs** of Texas with the goal of making recommendations to ensure the infrastructure is there to support future demand.

Did you know?

One of the **key drivers of electric demand is data centers**. Data center inventory in North Texas increased by 173% in the second half of 2023, pushing its total to 565.3 megawatts.