

Frequently Asked Questions (FAQs)

The Cost of Constraining New Solar and Wind Resources

1. What does this study examine?

The Corporate Energy Buyers Association (CEBA) commissioned a study, which was performed by NERA. NERA conducted the analysis by comparing scenarios in which new solar and wind projects are constrained against scenarios in which these generation resources are allowed to compete based on economics under a permitting-neutral framework. The analysis examines impacts on electricity prices, energy expenditures, resource deployment, reliability, and generation investment over seven years beginning in 2027 through 2033.

2. What are the study's primary findings on affordability?

The study finds that constraining new solar and wind deployment increases energy costs for American households and businesses.

Beginning 2027 through 2033:

- Constraining new solar and wind resources could cost the U.S. an additional \$121.2 billion in electricity and natural gas costs beginning in 2027 through 2033.
 - Combined household electricity and natural gas expenditures could increase by approximately \$81.2 billion over the seven-year period, or \$11.6 billion annually.
 - Commercial and industrial customers across the U.S. are projected to pay an additional \$40 billion, or \$5.7 billion annually, in electricity costs alone over the modeled period, if new solar and wind deployment are constrained.
 - On average, U.S. electricity prices increase by up to 6.1% more when new solar and wind resources are constrained compared to modeled scenarios in which those resources could compete economically. Electricity prices could be higher in every modeled region when new solar and wind deployment is constrained.
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3. How large are the modeled regional impacts?

Regional impacts differ significantly.

The study finds that constraining new solar and wind resources could increase electricity prices in the following modeled regions by:

- 22.2% in ERCOT (Texas)
- Approximately 10.8% in NYISO (New York)
- Approximately 9.3% in the West
- Approximately 5.2% in ISO-New England

- Approximately 4.8% in MISO
 - Approximately 4.7% in the Southeast
 - Approximately 3.1% in PJM
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4. What are the findings for ERCOT (Texas)?

ERCOT could experience the largest modeled cost increases from constraining new solar and wind resources among the regions.

The study estimates that beginning in 2027 through 2033:

- Average electricity prices are projected to be as much as 22.2% higher when new solar and wind resources are constrained compared to scenarios where they could compete on economics.
 - Economywide, residential and commercial/industrial customers in ERCOT could see \$21 billion in additional electricity costs over the seven-year period when new solar and wind resources are constrained, or \$3 billion annually.
 - Households could see a \$1 billion increase in annual costs, or \$7 billion on a cumulative basis.
 - Commercial and industrial customers could see a \$2 billion annual increase in costs, or \$14 billion on a cumulative basis.
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5. Why do electricity prices increase when new solar and wind deployment are constrained?

When new solar and wind resources are unavailable, the model selects other, more expensive generation resources — primarily natural gas-fired generation — to meet electricity demand. The study concludes that allowing all technologies to compete on economics lowers electricity prices.

6. What impact does the study have on businesses?

The study finds significant impacts on commercial and industrial (C&I) customers.

Beginning in 2027 through 2033:

- C&I electricity costs could increase by approximately \$5.7 billion annually when new solar and wind deployment is constrained.
- Total cumulative C&I electricity costs could increase by approximately \$40 billion over the seven-year study period.

These impacts are in addition to the household energy cost increases estimated in the analysis.

7. How does growing electricity demand affect the results?

The study evaluates both business-as-usual demand growth (EIA's Annual Energy Outlook 2026) and higher-demand scenarios (Electric Power Research Institute's "Powering Intelligence 2026" Medium Growth scenario) that assumes additional electricity demand from large loads, including manufacturing and data centers.

Under higher-demand conditions:

- Electricity prices generally increase
- More generating resources are required
- The economic value of lower-cost resources increases

The study finds that allowing new solar and wind deployment helps moderate price increases associated with higher load growth.

8. Supply Chain Constraints Undermine Viability of Near-Term, Gas-Heavy Buildout

The study notes that constraining new solar and wind deployment requires substantially more natural gas combined-cycle capacity: all modeled scenarios included new natural gas additions. NERA estimates that constrained scenarios require natural gas combined-cycle capacity additions that exceed EIA projections by 60% to 72% through 2033.

The study cites industry literature highlighting:

- Gas turbine manufacturing backlogs
- Rising turbine costs
- Supply-chain constraints driven by rapid electricity demand growth

These factors could make it more difficult to rely primarily on natural gas additions to meet load growth over the modeled seven-year period (2027-2033).

9. Does the study conclude that natural gas should not be built?

No.

The study does not conclude that natural gas generation should be eliminated or prevented from being built.

In every scenario analyzed, new natural gas-fired generation is added to the system. The study finds that allowing solar, wind, and natural gas resources to compete on economics produces a more diversified generation portfolio and lower overall energy costs than scenarios that constrain new solar and wind deployment.

10. Does the study assume unlimited new solar and wind deployment?

No.

The model includes constraints that account for intermittency, generation profiles, transmission limitations, and resource availability.

The analysis also assumes that existing transmission infrastructure remains unchanged and does not model for future transmission expansion.

As a result, new solar and wind deployment remain subject to operational and economic constraints within the model.

11. How does the study account for transmission needs or intermittency associated with new solar and wind?

In the unconstrained scenarios, the capacity-expansion model selects a mix of resources (both existing and new) on a least-cost basis that optimizes the use of existing transmission capacity to meet demand.

The NewERA model also constrains intermittent new solar and wind resources using two mechanisms: region- and load block-specific caps that limit their share of total generation (typically 50–85%), and resource-specific energy profiles that restrict hourly availability based on maximum potential output. When these limits are reached, the model selects other resources — such as natural gas or clean firm generation (nuclear, hydro, geothermal) — to meet demand at least cost.

12. Does the study evaluate any specific legislation or regulatory proposal?

No.

The study explicitly states that the scenarios are not intended to represent any specific federal, state, or local policy proposal.

Instead, the analysis evaluates the broader economic effects of constraining new solar and wind deployment under a range of future electricity demand conditions.

13. What does "permitting neutrality" mean?

The study does not evaluate preferential treatment for any resource. Instead, it compares a constrained scenario against one in which new solar and wind projects can compete alongside other technologies without deployment restrictions.

14. How was the analysis conducted?

The analysis was conducted by NERA Economic Consulting on behalf of CEBA.

NERA evaluated four scenarios comparing electricity markets where new solar and wind development is constrained versus scenarios where those resources are allowed to compete based on economics.

The study examined impacts under both business-as-usual demand growth and higher electricity demand driven by data center expansion.

NERA used its NewERA model, which:

- Represents more than 17,000 generating units
- Covers 63 U.S. electricity regions
- Simulates generation dispatch, retirements, and capacity expansion decisions
- Projects electricity prices, fuel prices, and generation investment outcomes

NERA also used a state-level electricity rate model to estimate impacts on delivered electricity prices paid by residential, commercial, and industrial customers.

The study evaluated impacts beginning in 2027 through 2033 and reported both national and regional results, including for ERCOT (Texas), PJM, MISO, NYISO, CAISO, ISO-NE, SPP, the Southeast, and the West.

15. What assumptions were used regarding future electricity demand?

The study uses electricity demand projections from the EIA's Annual Energy Outlook 2026 and for the high-demand scenarios incorporates additional data center demand projections from Electric Power Research Institute, specifically the "Powering Intelligence 2026" report and its "medium" scenario.

The high-demand scenarios assume substantial growth in data center electricity consumption driven by artificial intelligence, cloud computing, and digital infrastructure expansion.

16. What are some important limitations of the study?

As with any modeling exercise, results depend on assumptions.

Important limitations include:

- It does not model a specific policy proposal.
- It does not model future transmission expansion.
- It does not include all real-world siting and supply chain constraints.
- It assumes fuel prices and electricity demand are unaffected by market outcomes.
- Results depend on assumptions regarding technology costs, fuel prices, tax incentives, and future demand growth.

Accordingly, actual market outcomes could differ from the modeled results.

17. What are the key policy implications of the study?

The study suggests that policies that unnecessarily constrain economically competitive generation resources may increase costs for consumers and businesses.

The analysis indicates that constraining new solar and wind resources can:

- Increase electricity costs
- Raise household energy expenditures
- Increase commercial and industrial electricity costs
- Increase consumers' exposure to natural gas price volatility

Key conclusion: the study does not recommend a specific policy but provides evidence that technology-neutral approaches may produce lower-cost electricity outcomes than approaches that constrain new solar and wind deployment.

