# Curtailment Mitigation for PCLRs: Modeling the Effects of Front-of-Meter Netting

Prepared for Google and V-Wire

September 2026

# Context for this report

**This report, prepared for Google and V-Wire, provides an assessment of curtailment risk for Provisional Controllable Load Resources (PCLRs) in ERCOT and the potential role of front-of-meter resources in mitigating those risks. The analysis presented herein was conducted by Aurora using its proprietary modeling suite and SCED power flow model, and represents Aurora's independent perspective and analysis. It does not necessarily reflect the views of Google, Alphabet Inc., V-Wire, or any of their affiliates, nor of Aurora's other clients.**

The report provides an overview of the evolving ERCOT large-load interconnection framework and the challenges associated with enabling data center energization while maintaining system reliability.

- The analysis quantifies curtailment exposure for representative ERCOT data center sites and evaluates the key drivers of curtailment risk under a range of future system conditions. Modeling is conducted under five separate weather years, ranging from mild to extreme.
- The study goes on to measure the impact of curtailment mitigation through front-of-meter resource co-siting. It introduces front-of-meter netting, a soon to be proposed regulatory change, and compares curtailment outcomes across netted and non-netted cases.
- The study concludes with a section on sensitivity analysis, stress testing the impact of transmission outages, PCLR deployment rates and co-sited BESS duration.

## Disclaimer

- This report does not advocate for any specific policy or market design change but rather aims to evaluate the impact of front-of-meter netting on large load curtailment.
- The modeling is based on Aurora’s Central view for load growth, supply and commodities prices. Details on Aurora’s assumptions and modeling methodology can be found in the appendix of the report.

# Agenda

# Executive Summary

1

**Rapid growth in ERCOT's large load interconnection queue has created demand for accelerated pathways to power; ERCOT's Provisional Controllable Load (PCLR) construct enables faster interconnection for qualifying loads.**

- Data center development has driven a surge in large load interconnection requests across the U.S., with ERCOT's Large Load Interconnection Queue expanding to more than 470GW as of July 2026.
- In response, ERCOT has introduced new interconnection options through its Batch Study framework, including the Provisional Controllable Load (PCLR) construct.

2

**PCLRs are exposed to ERCOT-directed curtailment during periods of local grid congestion and broader capacity shortfalls, introducing uncertainty around consistent power supply.**

- In Aurora’s modeling, fully grid exposed standalone PCLRs experience curtailment in all five weather years assessed, with the majority of curtailment being driven by local events.
- Under the Central, 2013-style weather year, average annual curtailment ranges from 50 to 241 hours across the three sites studied between 2028 and 2030.
- Curtailment outcomes vary across weather years, ranging from 35 hours in the mildest weather year to 550 hours in the most extreme. Corresponding curtailed energy volumes range from 0.35% to 3.47%.

3

**With Front-of-the-meter netting, co-sited resources mitigate curtailment risk and provide lead time to PCLRs during local curtailment events.**

- Under the Central weather year (2013), a co-sited FTM[1] netting enabled 4-hour battery reduces curtailment hours by 83% relative to a standalone PCLR, compared to a 53% reduction for an equivalent battery without FTM netting, on average across the three sites modeled.
- FTM-netted loads benefit from operational flexibility offered by the battery, which temporarily shields load during the onset of a local curtailment event, creating a ramp window for load management.

1) Front-of-the-meter.

# ERCOT's Large Load Interconnection Queue has reached 474GW, 421% higher than the current peak load record

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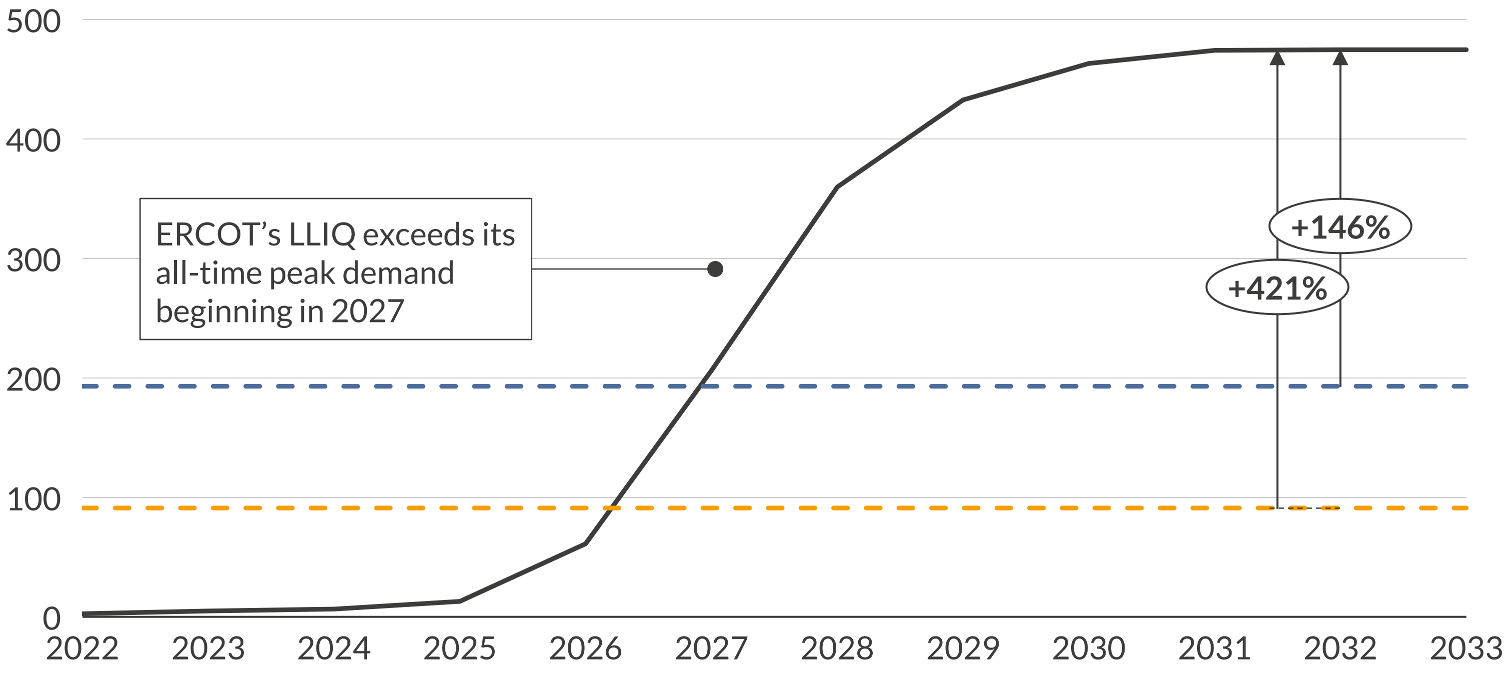
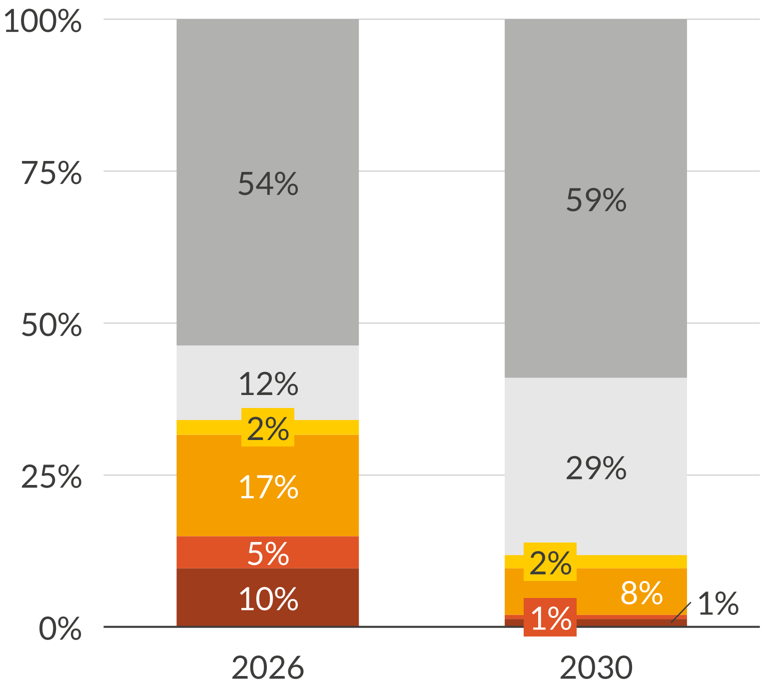
**ERCOT's existing and projected large load capacity**
GW




**Large load interconnection queue[1]**
GW




- The full realization of ERCOT's LLIQ would require load growth **exceeding 400% of the current peak demand record** and more than **doubling the existing installed generation fleet.** While rapid access to a secure grid connection remains a top priority for developers, it is unlikely that all proposed loads will ultimately be accommodated.
- Of large loads seeking interconnection, only 7% have had Planning Studies approved for 2030, creating **great uncertainty around load realization.**

Large load capacity — Installed generator resource nameplate capacity — Current peak load record

No Studies Submitted — Under ERCOT Review — Section 9.4 Requirements Only[3] — Section 9.4/9.5 Requirements Met[3] — A2E but not operational[2] — Observed Energized

1) LLIQ data as of July 29, 2026. 2) Approved to Energize. 3) Section 9.4 requirements govern the completion and commitment phases for interconnecting large loads.

Sources: Aurora Energy Research, ERCOT Update Senate Committee on Business and Commerce presentation (July 29, 2026)

# Some large loads will now be subject to a batch study process, and some may not receive immediate firm interconnection

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**Proposed Batch Study timeline[1]**

**Study outcomes**

- **Batch 0 study report** (including results and required transmission upgrades)
- Updated Load Commissioning Plan (LCP) with MW allocations by year from 2028 to 2032
- Estimated **financial security** requirements for upgrades

**Commitment decision**

- Developers must decide within **60 days:**
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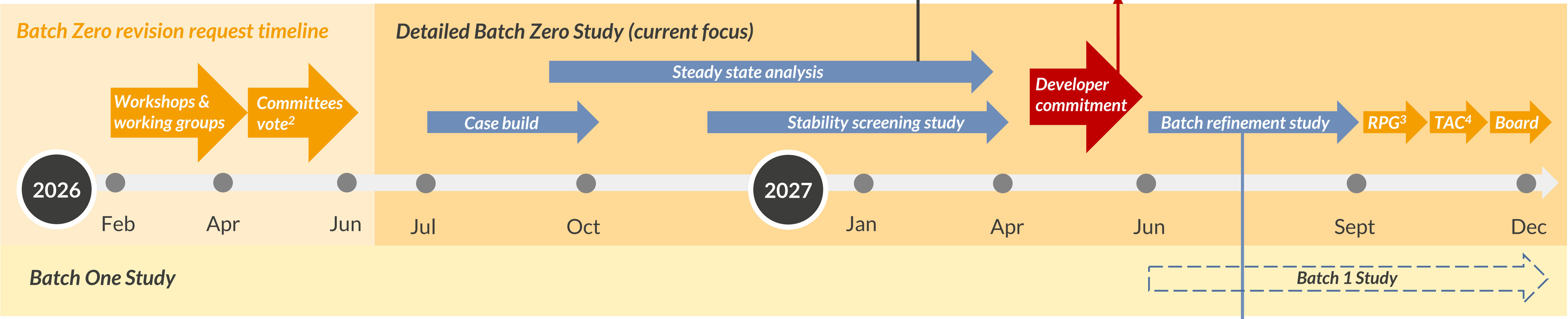


**Refinement study**

- **Refine transmission upgrades** for the committed load
- No changes to MW allocations or financial obligations
- Finalize the **transmission plan** prior to PRS/ROS/TAC/Board[2] review

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Involved parties: ERCOT | ERCOT + TSP[5] | ILLE[6] developer

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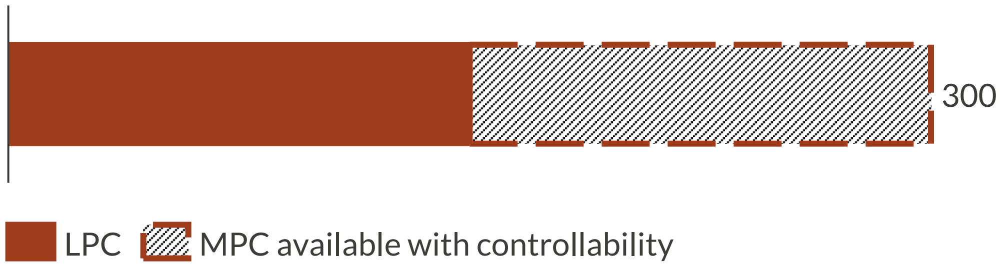
Sources: Aurora Energy Research, ERCOT, PUCT, Texas Legislature

# In exchange for speed to power, large loads can offer flexibility via several distinct mechanisms

## Provisional Controllable Load Resource (PCLR)

- PCLR introduces a framework in which ERCOT distinguishes between a grid-backed planning allocation (LPC[1]) and a larger dispatchable operating range (MPC[2]), allowing loads to energize ahead of full transmission upgrades while remaining subject to SCED dispatch.
- PCLRs are temporary by design; unlike standard CLRs, they are expected to de-register once full firm power becomes available.
- While transmission upgrades are developing, PCLRs enable flexible loads to energize up to their MPC[2] subject to available local transmission headroom.
- Operationally, PCLRs give ERCOT visibility and control over flexible load behavior through curtailment, serving as a reliability lever to manage transmission constraints during infrastructure buildout.

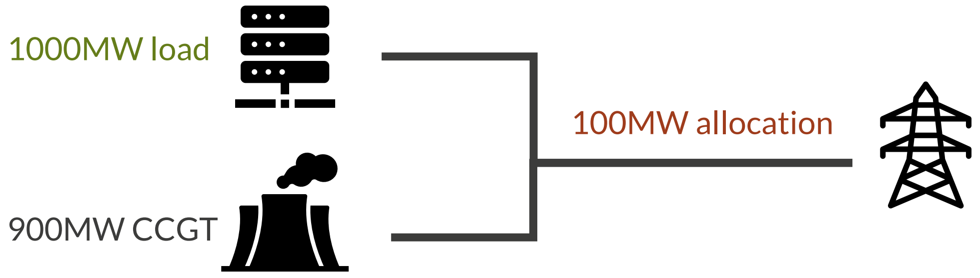
**PCLR design – controllable load, illustrative service**
MW




## Withdrawal-Limited Private Use Network (WLPUN)

- A WLPUN is the standard option for BYOG[3] within the Batch Zero framework.
- Large loads submit a request to build a new generation resource behind the same POI and are assigned a limited capacity they can withdraw from the grid.
- For these loads, limited firm service allocations restrict operational flexibility, as non-firm headroom is unavailable and behind-the-meter generation must shoulder much of the supply requirement.
- Withdrawal limits reduce maximum strain on the grid. However, this mechanism does not offer ERCOT the same level of transparency into load behavior compared to PCLRs.

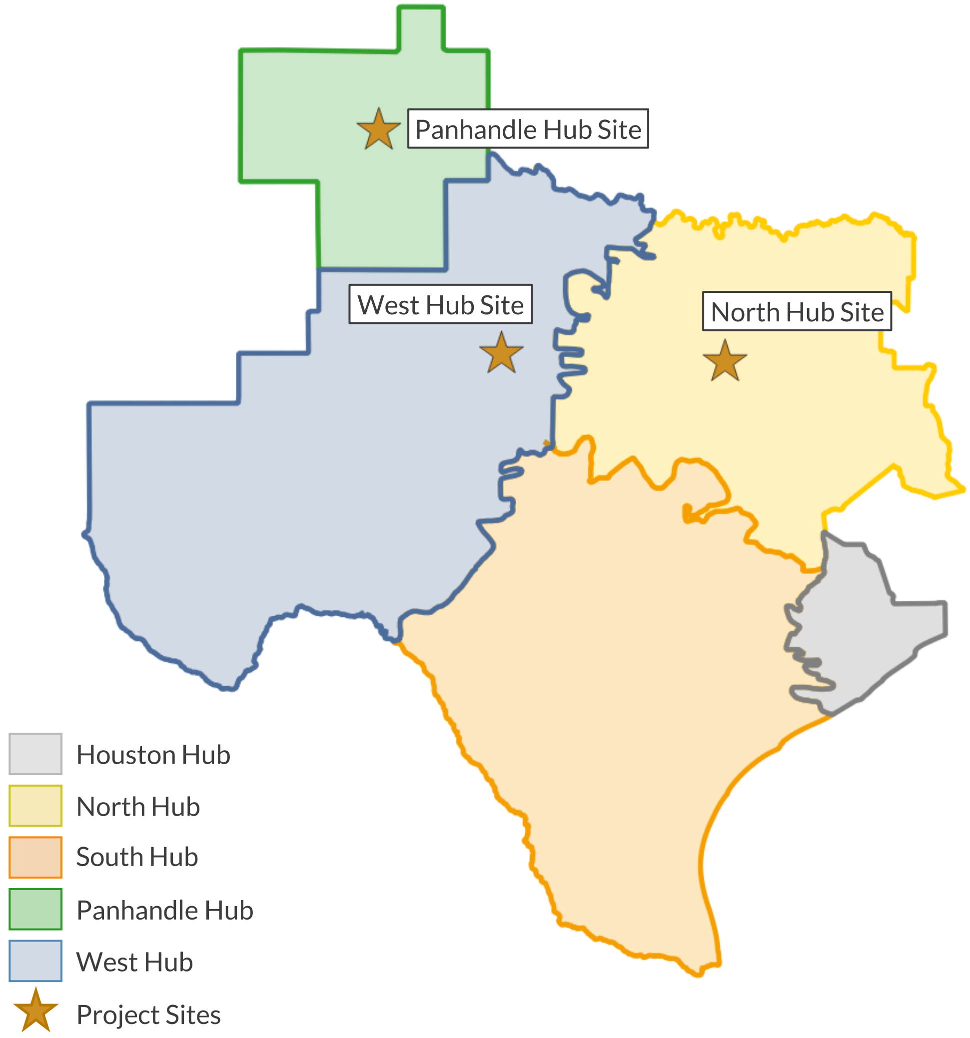
**WLPUN design – generation-backed load, illustrative service**




1) Low Power Consumption, the level of grid withdrawal that large loads are limited to prior to related transmission upgrades. 2) Maximum Power Consumption. 3) Bring Your Own Generation.

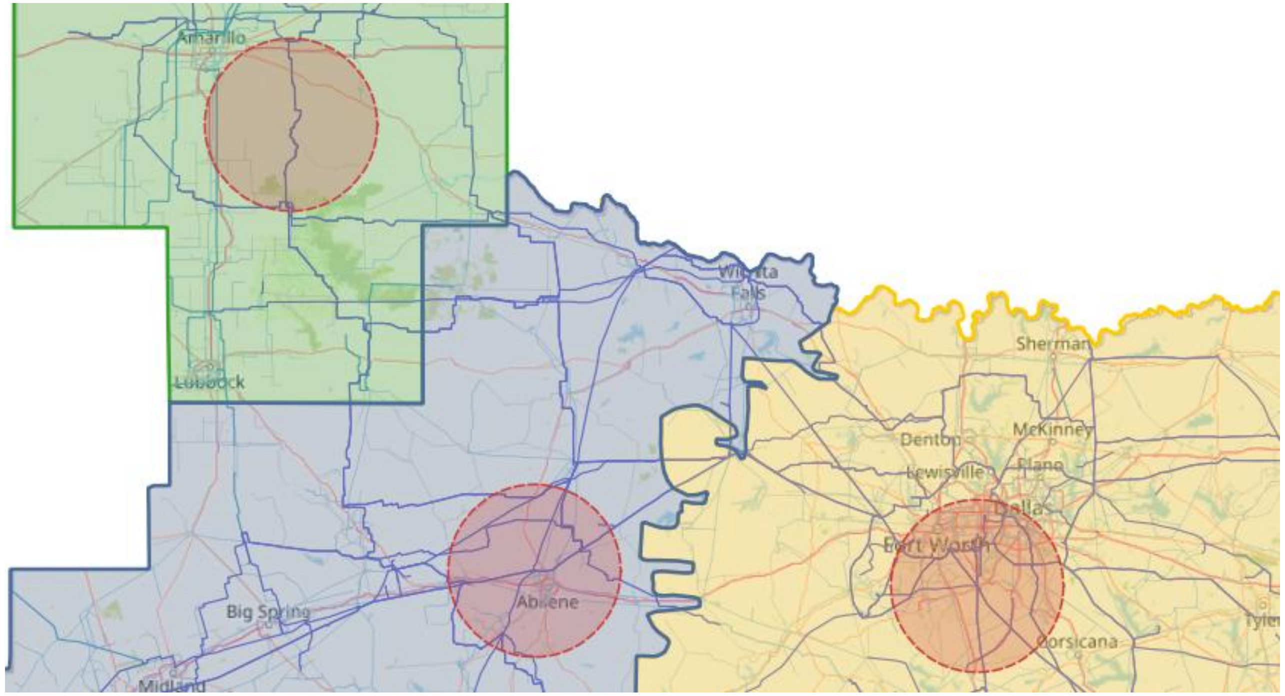
Sources: Aurora Energy Research; ERCOT; Sharma Frank, A., *PCLR Builds the Moat for AI Loads, Prosperous Infrastructure* (Luminary Strategies, 2026)

# Aurora selected 3 well-connected, representative data center sites to model 600MW PCLR additions and examine forecasted curtailment dynamics




| Modeled PCLR | Voltage at POI | Region | Capacity | Entry Year |
|---|---|---|---|---|
| **West Hub Site** | 345kV | West | 600MW | 2028 |
| **North Hub Site** | 345kV | North | 600MW | 2028 |
| **Panhandle Hub Site** | 345kV | Panhandle | 600MW | 2028 |

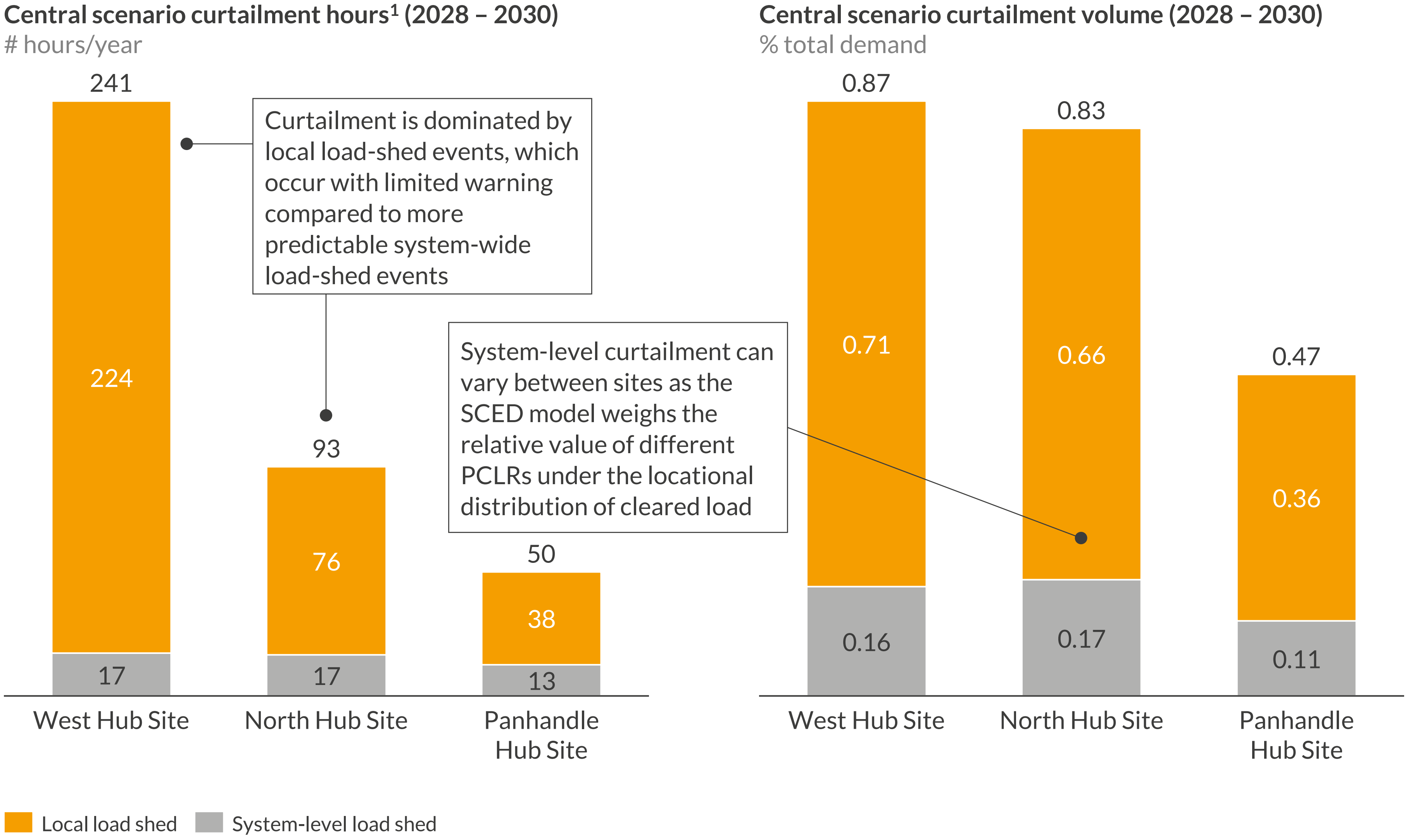
**ERCOT transmission topography near the assets**




Network: Existing <100kV lines Existing 100+kV lines Existing 345kV lines

Sources: Aurora Energy Research

# Central | Even with a conservative demand forecast and moderate weather profiles, curtailment risk could be material for PCLRs




- All three sites see moderate curtailment risk for a 600MW PCLR in the Central scenario, requiring between 0.45% and 0.9% curtailment on average from 2028 to 2030.
- The West Hub and North Hub sites see over 150% more curtailment by volume than the Panhandle Hub site. Curtailment risk is lower in the Texas Panhandle, an area with historically low demand and significant renewable deployment.
- While the West Hub site sees approximately the same curtailment volume as the North Hub site, it has over double the number of curtailment hours, indicating the prevalence of partial curtailment events.

1) Quantity of hours with any curtailment present.

Sources: Aurora Energy Research, ERCOT

# Front-of-meter netting agreements are a proposed construct that enables co-sited generation capacity to be attributed to a PCLR

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## Front-of-meter netting agreement overview

- A front-of-meter netting agreement is a contract between a PCLR[1] and co-sited generation resource that attributes the generator's capacity to the PCLR from the perspective of SCED and the grid operator.

## Co-siting *without* a netting agreement (non-netted configuration):

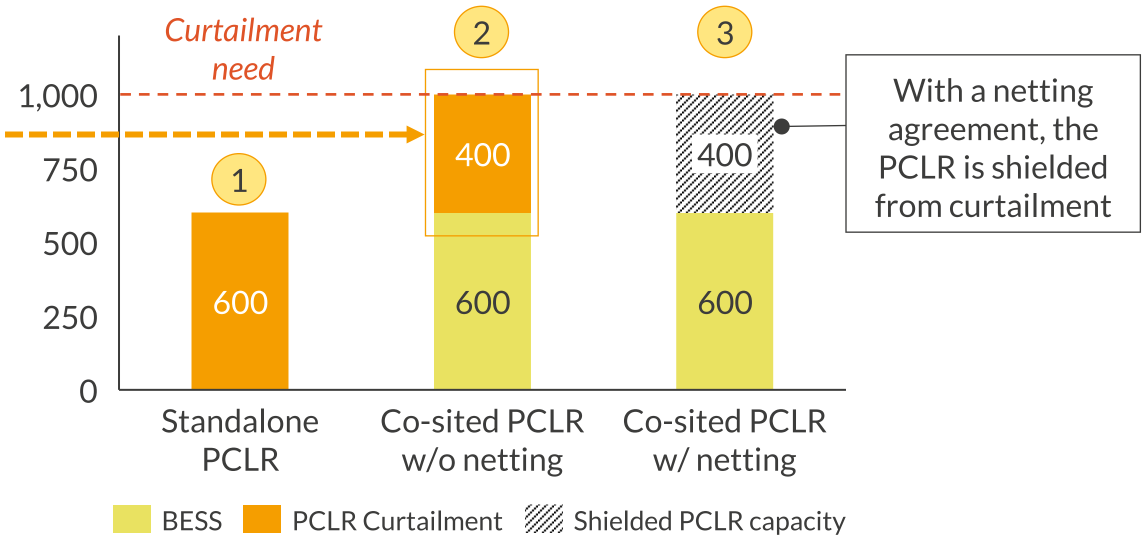
- Large loads taking ERCOT's PCLR designation assume curtailment risk. Some of this risk can be offset by co-siting with a front-of-meter dispatchable resource such as a gas peaker or BESS.
- However, ERCOT's Market Management System (MMS) mandates distinct Resource IDs, meaning there is no way for SCED to attribute the co-sited generator to the load that financed it.
- If SCED requires more capacity than the co-sited generator can provide, SCED will dispatch ***additional*** capacity from the PCLR load itself, often happening with little notice.

## Co-siting *with* a netting agreement (netted configuration):

- During periods of local congestion, the PCLR demand is covered MW for MW by the co-sited resource. While the asset has sufficient dispatch capability, PCLR conditional capacity is protected from curtailment.
- The PCLR shield persists so long as the co-sited resource is available, **affording the data center operator valuable lead time to manage their load.**

**Impact of netting during a local curtailment event, *ILLUSTRATIVE***

MW




A local curtailment event occurs with **little warning; SCED seeks 1,000MW of local capacity** to dispatch

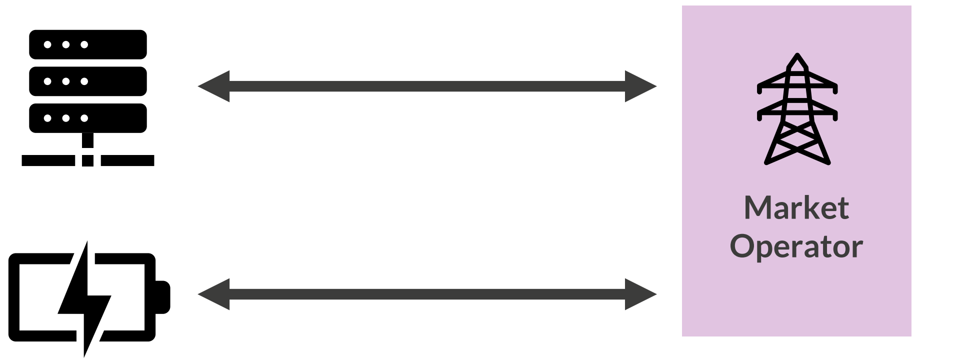
1. In the standalone configuration the **PCLR is fully exposed to SCED** and it's entire 600MW capacity is called to curtail.
2. In the co-sited configuration **without** netting, the PCLR is only **partially covered.** SCED's needs exceed the BESS capacity and the PCLR is curtailed.
3. With a front-of-meter netting agreement in place, **SCED attributes the capacity of the BESS to the PCLR**, shielding the PCLR from SCED. The shield persists so long as the co-sited resource is available to SCED.

1) Provisional Controllable Load Resource. 2) High Impact Large Load, Conditional High Impact Large Load.

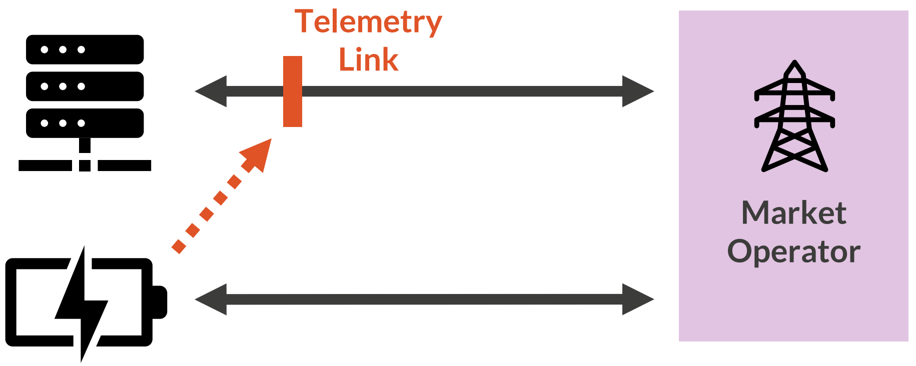
Sources: Aurora Energy Research, Global Capacity Alliance

# Netting agreements are implemented through a telemetry link, creating a curtailment shield for the PCLR during periods of severe local congestion

**Front-of-meter BESS co-sited *without* a netting agreement**




**Front-of-meter BESS co-sited *with* a netting agreement**

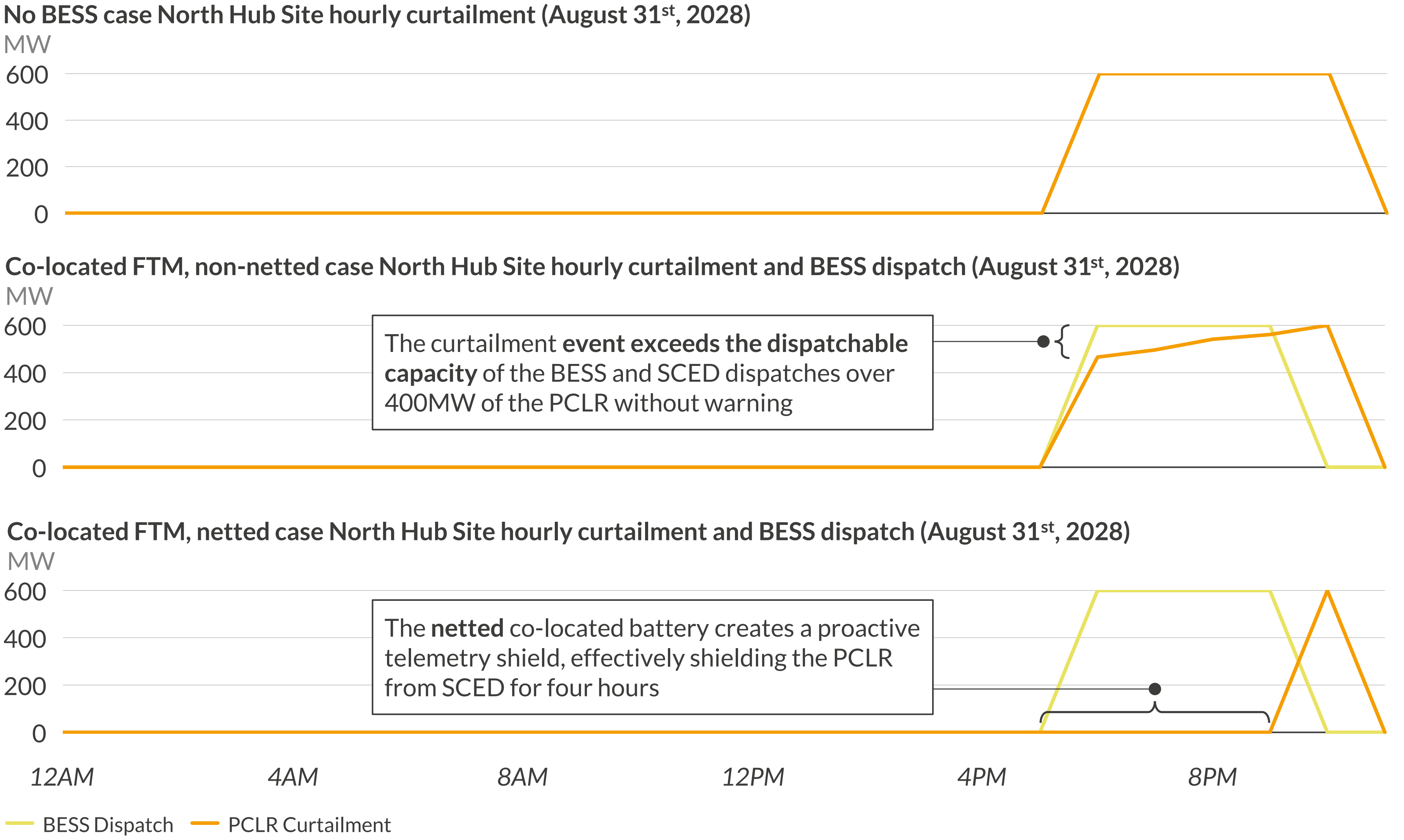



| Item | Description | Non-netted case | Netted case |
|---|---|---|---|
| Hardware connection | The BESS and the PCLR are connected independently to the bus | ✓ | ✓ |
| Bidding behavior | The Qualified Scheduling Entity (QSE) bids the BESS below the PCLR in merit order | ✓ | ✓ |
| Telemetry Link | PCLR has a "Telemetry Link" that allows the QSE to dynamically firm the load while the BESS is offered and equivalently offsetting. | ✗ | ✓ |
| Local curtailment shield | The PCLR is protected against curtailment events driven by local congestion | ✗ | ✓ |
| System-level curtailment shield | The PCLR is protected against curtailment events driven by system-level scarcity | ✗ | ✗ |

- In the **Non-netted case**, the BESS and the PCLR are treated as independent by SCED. The QSE managing both is assumed to successfully bid the BESS ahead of the PCLR in the merit order, but curtailment events that exceed the mitigating capacity of the BESS will then cause PCLR curtailment. The BESS capacity is not attributed to the PCLR.
- In the **Netted case,** the QSE managing both assets temporarily firms the PCLR in SCED by raising it's Low Power Consumption (LPC) limit while the equivalently offsetting resource is available and bid into the market. This Telemetry Link ensures the mitigation of the BESS is attributable to the PCLR.

Sources: Data & Modeling: Aurora Energy Research, Architecture & Telemetry Link Concept: V-Wire

# A 4-hour netted front-of-the-meter BESS can provide a PCLR with up to four hours of lead time during an extended curtailment event



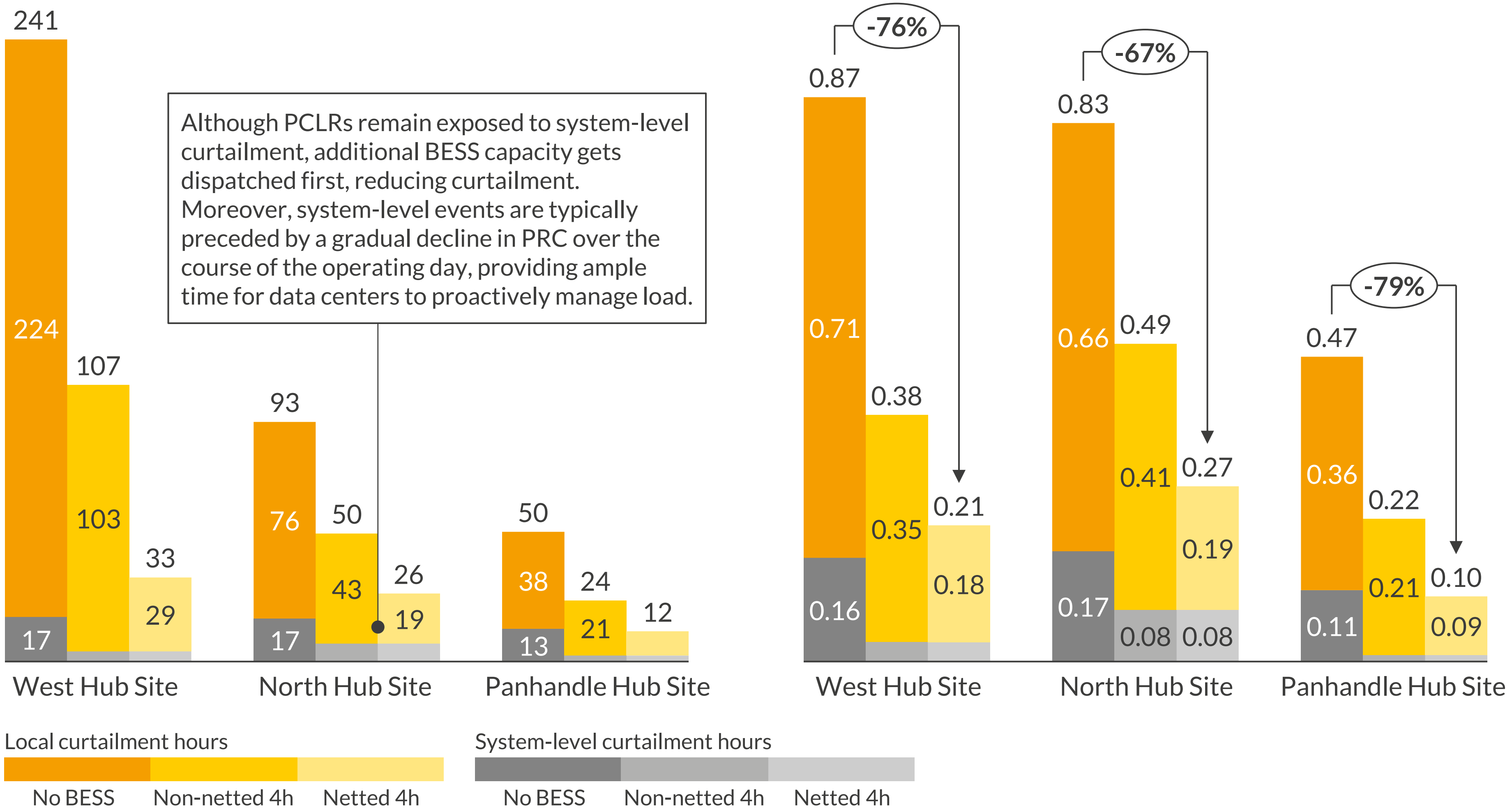

Sources: Aurora Energy Research

- During a local curtailment event on August 31st, 2028, the North Hub Site PCLR is subject to **five hours of full 600MW curtailment**.
- In the non-netted case, the front-of-the-meter BESS has minimal impact on curtailment. Additionally, the PCLR is given no lead-time to prepare for the event, as the immediate dispatch from SCED requires capacity beyond what the battery can provide by itself.
- The netted front-of-the-meter BESS fully mitigates curtailment in the first four hours of the event. Once the BESS has fully discharged, the PCLR is again exposed to curtailment for the last hour, with the benefit of having had four hours of advanced notice.

# Across sites, the usage of FTM netting reduces total curtailment by ~50% compared to the non-netted case

**Central scenario curtailment hours[1] (2028 – 2030)**
# hours/year

**Central scenario curtailment volume (2028 – 2030)**
% total demand




- The addition of a co-located 600MW BESS significantly benefits PCLR curtailment metrics even before employing the FTM netting construct, reducing total curtailment volume by ~50% across sites.
- FTM netting provides additional curtailment savings beyond a standard BESS, reducing total curtailment by 74% across sites relative to a PCLR without a co-located battery.
- Many curtailment events **exceed the real-time discharge capability of the BESS**. As a result, PCLRs can be curtailed in the non-netted case even while the BESS is discharging. In the netted case, **the netting agreement enabled Telemetry Link removes this risk**, further reducing curtailment.

1) Quantity of hours with any curtailment present.

Sources: Aurora Energy Research

# Agenda

# Data center development is booming across the U.S., and secure grid connection is a top consideration for developers

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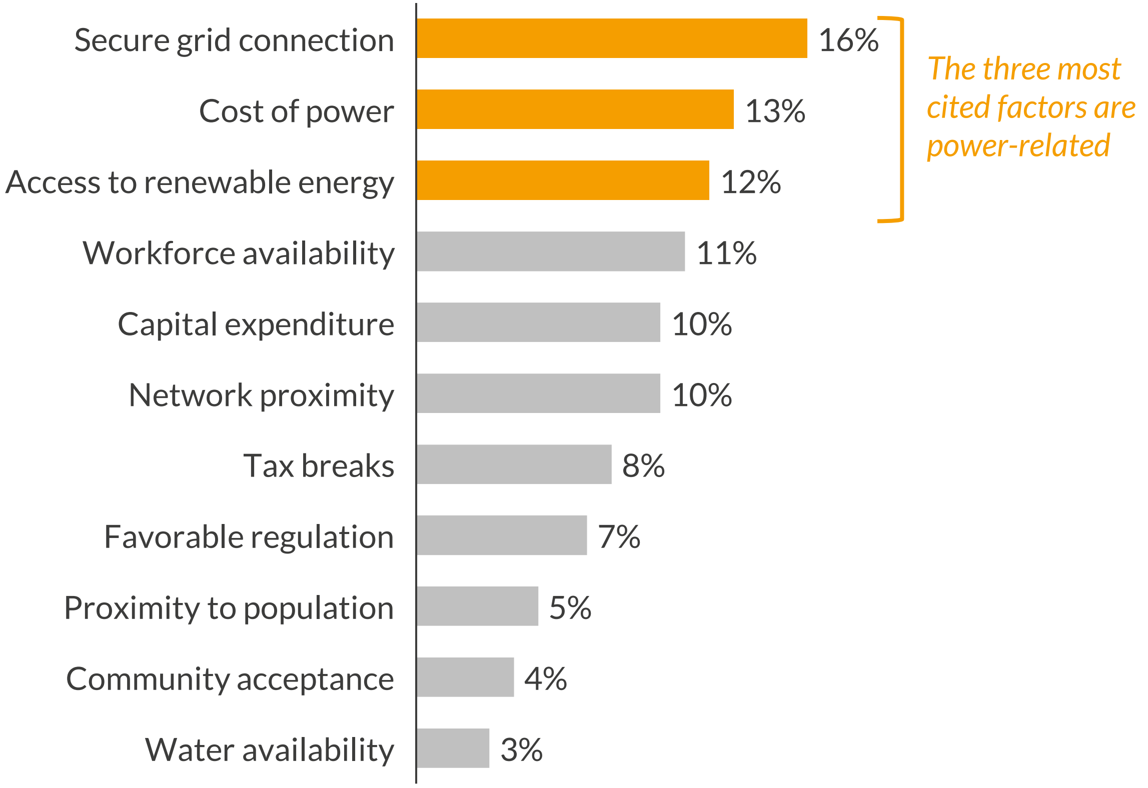
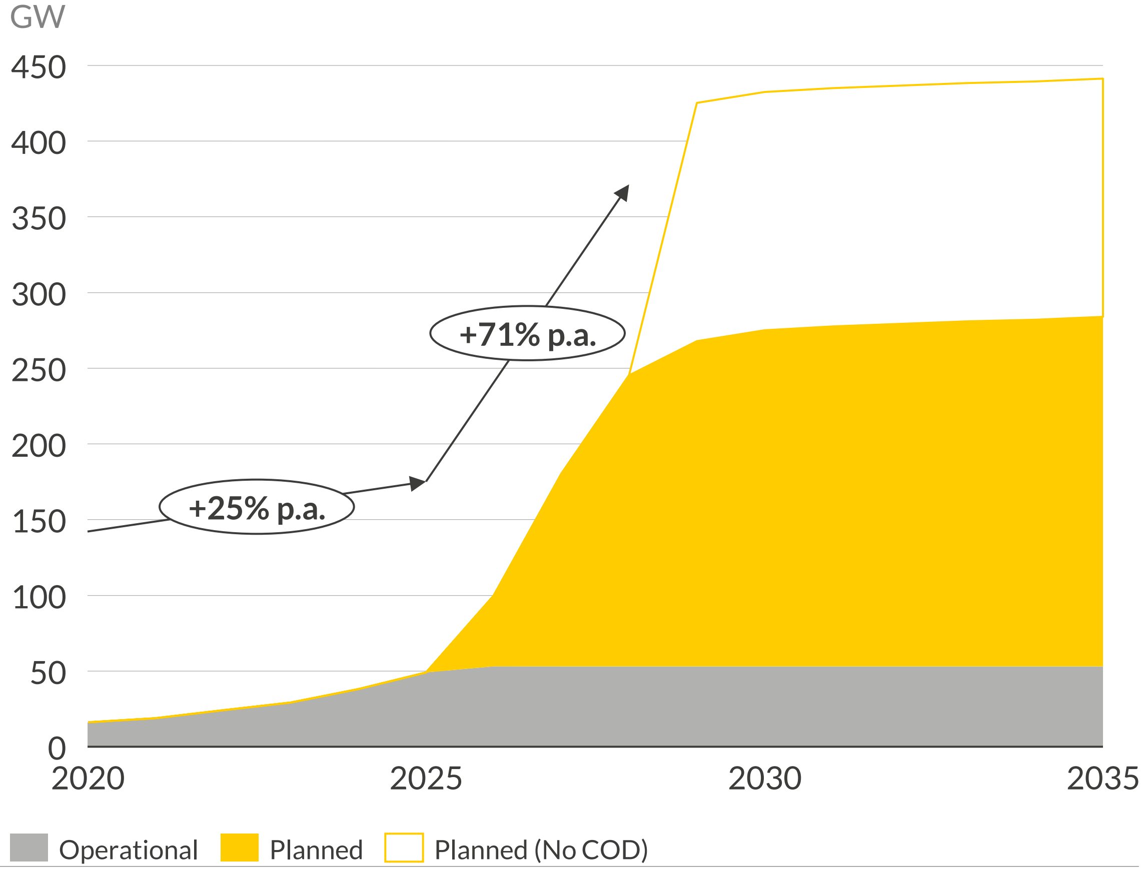
Speed to power is critical for data centers. Securing a grid connection is the largest barrier to data-center energization today and is cited as the top factor for site selection. Utilities across the U.S. are managing record volumes of load interconnection requests; slow study processes and grid upgrades ensue, further exacerbated by ongoing reforms triggered by questions over reliability and cost allocation. To date, actual data center capacity additions have been modest, averaging 25% growth per annum since 2020. Planned facilities have ambitious energization targets for the coming years that may not represent power-related challenges today.

### Key factors for data center site selection[1]




### U.S. data center capacity by status and target COD[2,3]




1) From "Data Center Construction Trends" survey, which reflects responses from over 171 global industry professionals, with results showing the percentage of respondents who ranked each factor among their top site selection drivers. 2) Commercial Operation Date, as reported by the developer. 3) Based on publicly available data for projects that have submitted interconnection requests, acquired permits and/or acquired site control. Data as of April 15, 2026.

Sources: Aurora Energy Research, Baxtel, Data center dynamics

# Texas is an attractive option for data center development due to its ample land, cheap power, and "open for business" mentality

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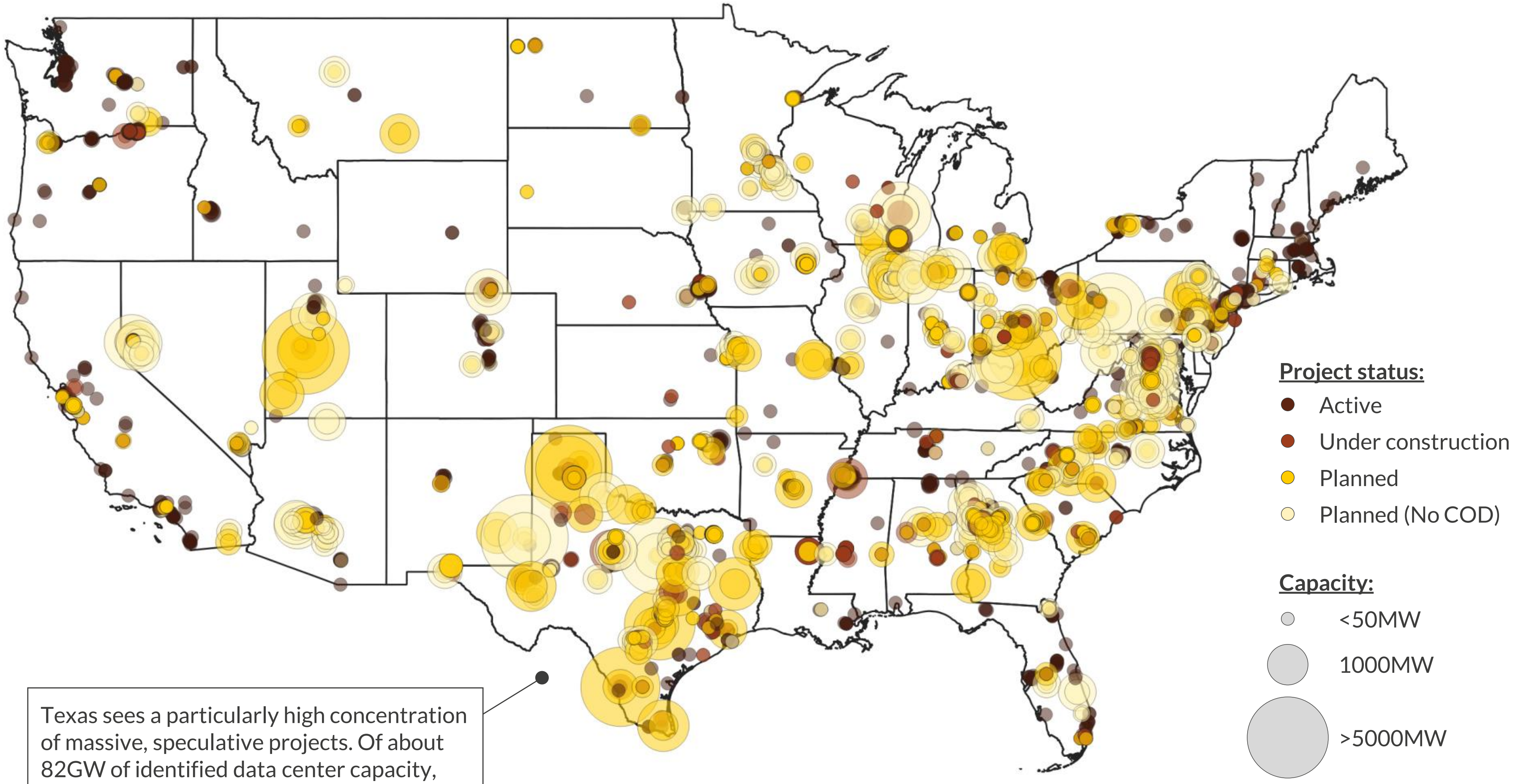
**Aurora tracked data center pipeline by size and developer status[1]**




Texas sees a particularly high concentration of massive, speculative projects. Of about 82GW of identified data center capacity, over 68GW are in the "planned" stages.[1,3]

- Data center development is accelerating across the broader U.S., with project concentrations in regions offering speed to power, low energy prices, and strong broadband infrastructure.
- ERCOT, WECC, and PJM are seeing meaningful development activity. Activity in SPP is more limited but remains notable, particularly in Oklahoma and parts of western Kansas and Nebraska.
- Many of the 200GW[2]+ of data center projects tagged as "Planned" are considered speculative, and only a portion are expected to materialize. However, even a small share of projects reaching commercialization would significantly affect local and regional power consumption.

1) Based on publicly available data for projects that have submitting interconnection requests, acquired permits, and/or acquired site control. 2) This capacity figure is based on Aurora's 3rd party information, which considers some haircuts to development pipelines. 3) Large load interconnection requests in ERCOT far exceed those available in public data.

Sources: Aurora Energy Research, Baxtel

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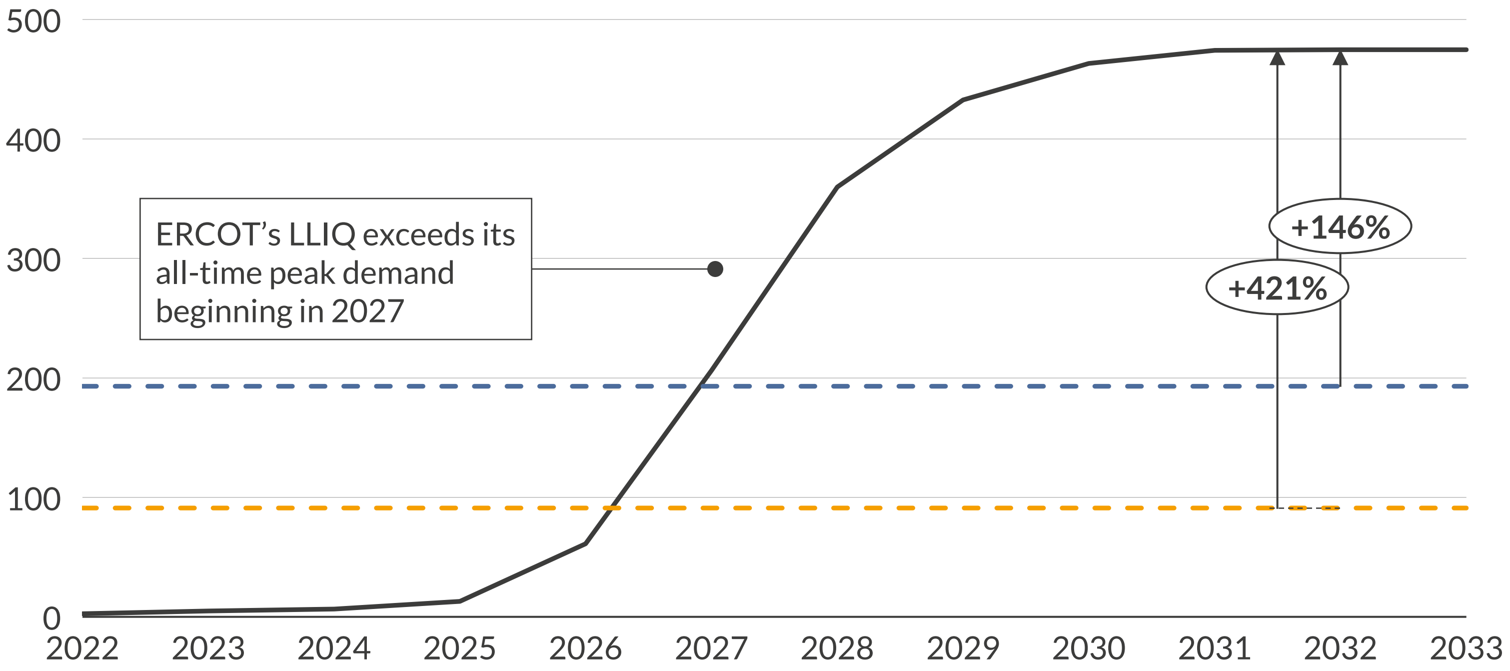


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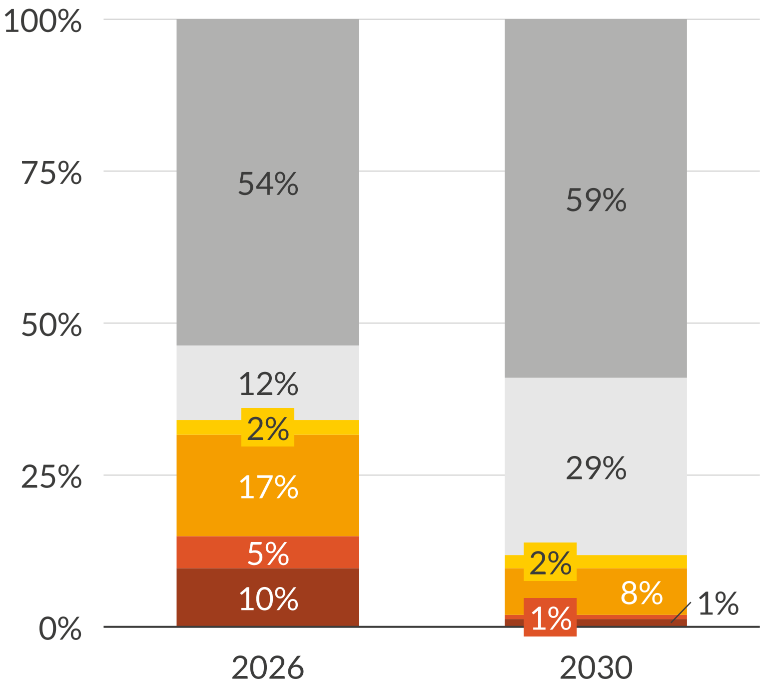


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# ERCOT's approach to load growth management has evolved rapidly and been transformative, yielding an overhaul of the interconnection process

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Driven by a surge of large load interconnection requests, ERCOT overhauled its existing large load study process. The accelerated development of **the Batch Zero framework has introduced flexible load pathways for data centers**, balancing grid reliability with speed-to-power.

**Mar 2022:** ERCOT begins tracking large load interconnections and enacts an interim study process. The queue size is less than 3GW.

2025

**May 2025:** The PUCT approves NPRR1234 and PGRR115, formalizing the LLIS[1] process and setting modeling, reliability, and telemetry requirements for large loads. The first LLWG[2] meeting is held the following day on May 16.

**Jun 2025:** After being passed in May, Senate Bill 6 comes into effect on June 20. SB 6 directed the PUCT and ERCOT to establish large load interconnection standards, set curtailment requirements, and hold loads accountable for transmission upgrade costs.

**Oct 2025:** The large load queue surpasses 200GW before the end of 2025.

**Dec 2025:** ERCOT issues a market notice laying out the stakeholder engagement plan for a batch study framework and introduces Batch Zero at a PUCT Open Meeting.

2026

**Feb 2026:** ERCOT hosts the first Large Load Batch Study Process Workshop, initiating an expedited stakeholder engagement process to develop the necessary revision requests for Batch Zero.

**Mar 2026:** ERCOT files NPRR1325 and PGRR145, which formally outline the Batch Zero requirements and process.

**Apr 2026:** The frameworks for PCLR and WLPUN are introduced and filed as comments under Batch Zero.

**Jun 2026:** Batch Zero is approved by the PUCT. The deadline for large loads to file for consideration is July 10. By the end of July, the large load interconnection queue reaches 474GW.

**Aug 2026:** On August 3, Gov. Abbott issues a directive requiring an audit of data center interconnections requests before additional projects can advance. As a result, ERCOT announces it will no longer meet the August 7 deadline to classify loads under Batch Zero. The publication of ERCOT's LTLF and December 2026 CDR also face delays.

1) Large Load Interconnection Study. 2) Large Load Working Group.

Sources: Aurora Energy Research, ERCOT, PUCT

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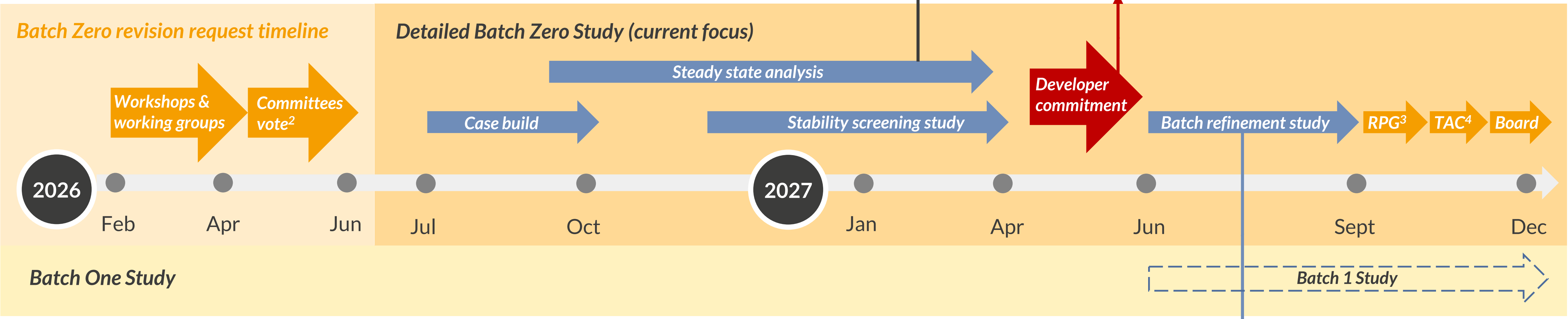


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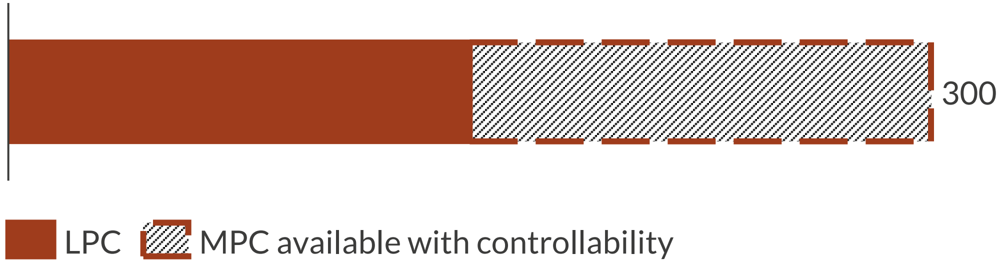
**PCLR design – controllable load, illustrative service**

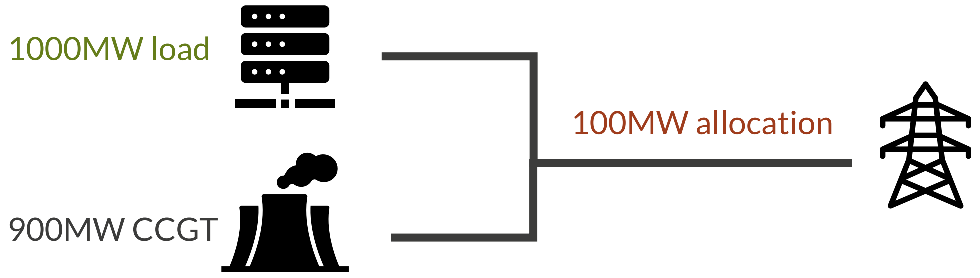
MW




## Withdrawal-Limited Private Use Network (WLPUN)

- A WLPUN is the standard option for BYOG[3] within the Batch Zero framework.
- Large loads submit a request to build a new generation resource behind the same POI and are assigned a limited capacity they can withdraw from the grid.
- For these loads, limited firm service allocations restrict operational flexibility, as non-firm headroom is unavailable and behind-the-meter generation must shoulder much of the supply requirement.
- Withdrawal limits reduce maximum strain on the grid. However, this mechanism does not offer ERCOT the same level of transparency into load behavior compared to PCLRs.

**WLPUN design – generation-backed load, illustrative service**




1) Low Power Consumption, the level of grid withdrawal that large loads are limited to prior to related transmission upgrades. 2) Maximum Power Consumption. 3) Bring Your Own Generation.

Sources: Aurora Energy Research; ERCOT; Sharma Frank, A., *PCLR Builds the Moat for AI Loads, Prosperous Infrastructure* (Luminary Strategies, 2026)

# Agenda

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# Provisional Controllable Load Resources would be available to the grid operator for dispatch during periods of grid congestion or system tightness

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## Provisional Controllable Load Resource Dispatch (Curtailment)

- Like all Controllable Load Resources, a PCLR would be available to ERCOT as a resource in SCED[1] and **must comply with dispatch instructions**.
- This would give ERCOT the authority to dispatch (curtail PCLRs). PCLR curtailment could happen **under two types of grid conditions:**

### 1 Local grid congestion

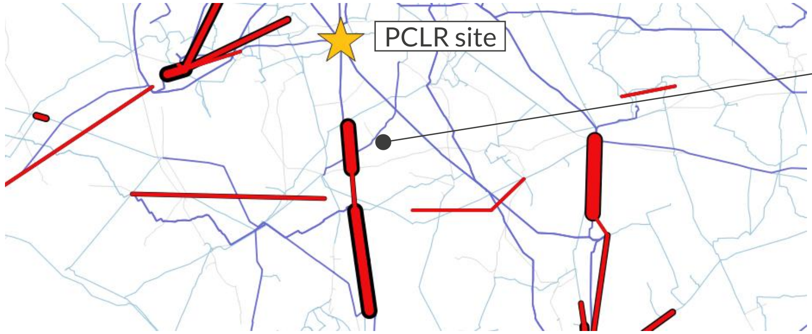
- PCLRs may be located in areas **with insufficient transmission capacity**, leaving them vulnerable to curtailment during peak demand periods or transmission outages.
- When serving a PCLR would cause **significant system congestion**, ERCOT may curtail the load rather than incur the cost of re-dispatching generation. These curtailment decision are made using the Adjusted Bid Cap mechanism.

### 2 Global (system-level) capacity shortfall

- During system-wide capacity shortages, ERCOT may initiate emergency load-shedding procedures.
- PCLRs would be dispatched as a controllable resource and would be **curtailed before ERCOT sheds firm load**.
- Unlike local grid events, **system-wide shortfalls often come with ample warning**.

## 1 Local curtailment (driven by grid congestion)

### Illustrative transmission line constraints



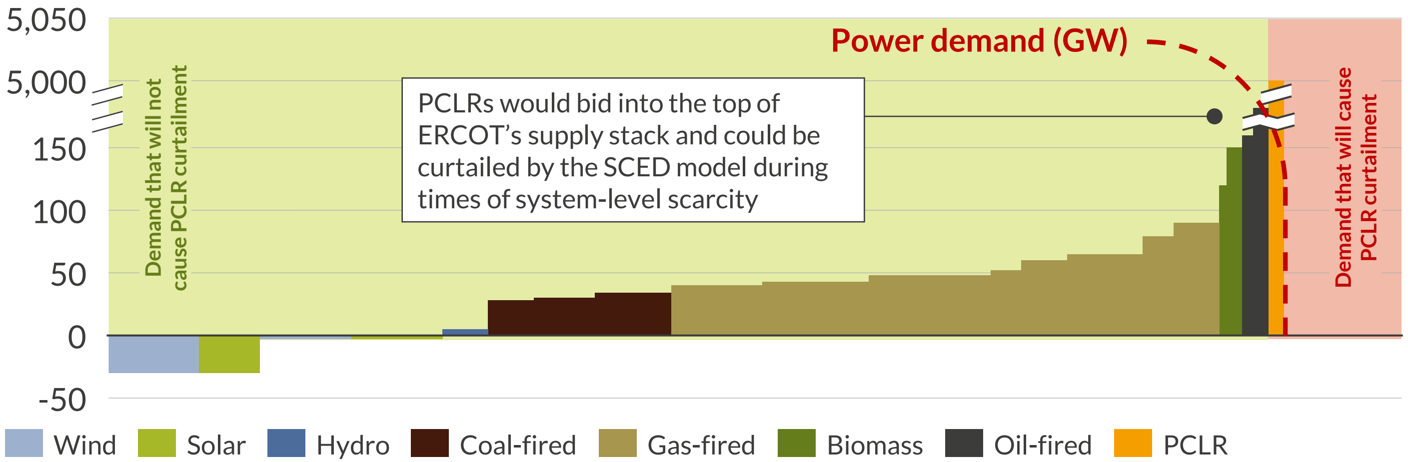

Local transmission constraints drive curtailment risk if a PCLR is in an area that relies on imports from other regions and is susceptible to persistent congestion

**Network**
- Existing 100+kV lines
- Existing 345kV lines

**Constrained lines**
Increasing congestion rent

## 2 System-level curtailment (driven by global capacity shortfalls)

### Illustrative Marginal Cost curve during high load hour, $/MWh




1) Security-constrained economic dispatch.

# Aurora leveraged its SCED nodal model to assess how local transmission constraints and system-wide scarcity can drive PCLR curtailment

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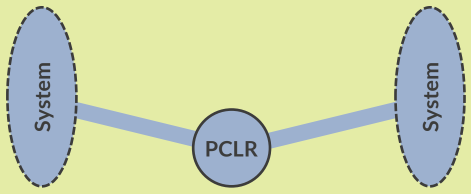
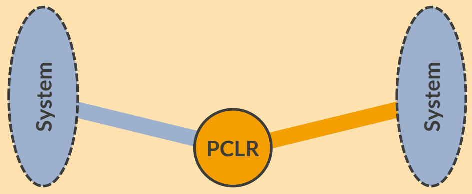
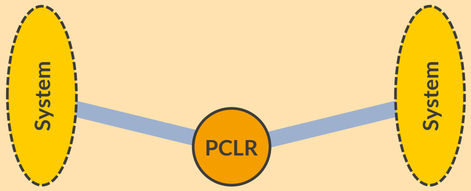
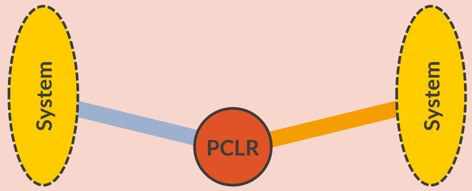
*Modeled curtailment emerges from the* ***complex interaction of generator dispatch, electricity demand, and network constraints****. Under* ***SCED[1] co-optimization of supply, load, and constraints****, a PCLR will be curtailed only when serving it is* ***uneconomical due to local constraints[2]*** *in the transmission network or when* ***system-level scarcity demands curtailment*** *to avoid or lessen firm load shed.*

**Illustrative curtailment situations for a PCLR**

More constrained →

More scarce ↓

| | Locally unconstrained | Locally constrained |
|---|---|---|
| No system-level scarcity | <br>▪ Load served in full<br>▪ No constraints mean generation can reach the data center, so the curtailable load is fully served | <br>▪ Curtailment from local congestion<br>▪ Supply exists elsewhere on the system, but local transmission constraints limit power delivery to the PCLR site |
| System-level scarcity | <br>▪ Curtailment from system-level scarcity<br>▪ Global capacity shortfall forces SCED to dispatch the PCLR to avoid a supply/demand imbalance | <br>▪ Curtailment from both local congestion and system-level scarcity<br>▪ Both local constraints and a global capacity shortfall reduce power delivery to the PCLR |

Low curtailment risk — Moderate curtailment risk — High curtailment risk

1) Security-constrained economic dispatch. 2) PCLRs that are driving significant local constraints are subject to an adjusted bid cap, whereby they are forced to bid lower in ERCOT's supply stack and are therefore more likely to face curtailment under the economic dispatch model.

Sources: Aurora Energy Research

# Aurora modeled three site configurations and various alternative scenarios to forecast PCLR curtailment expectations under different conditions

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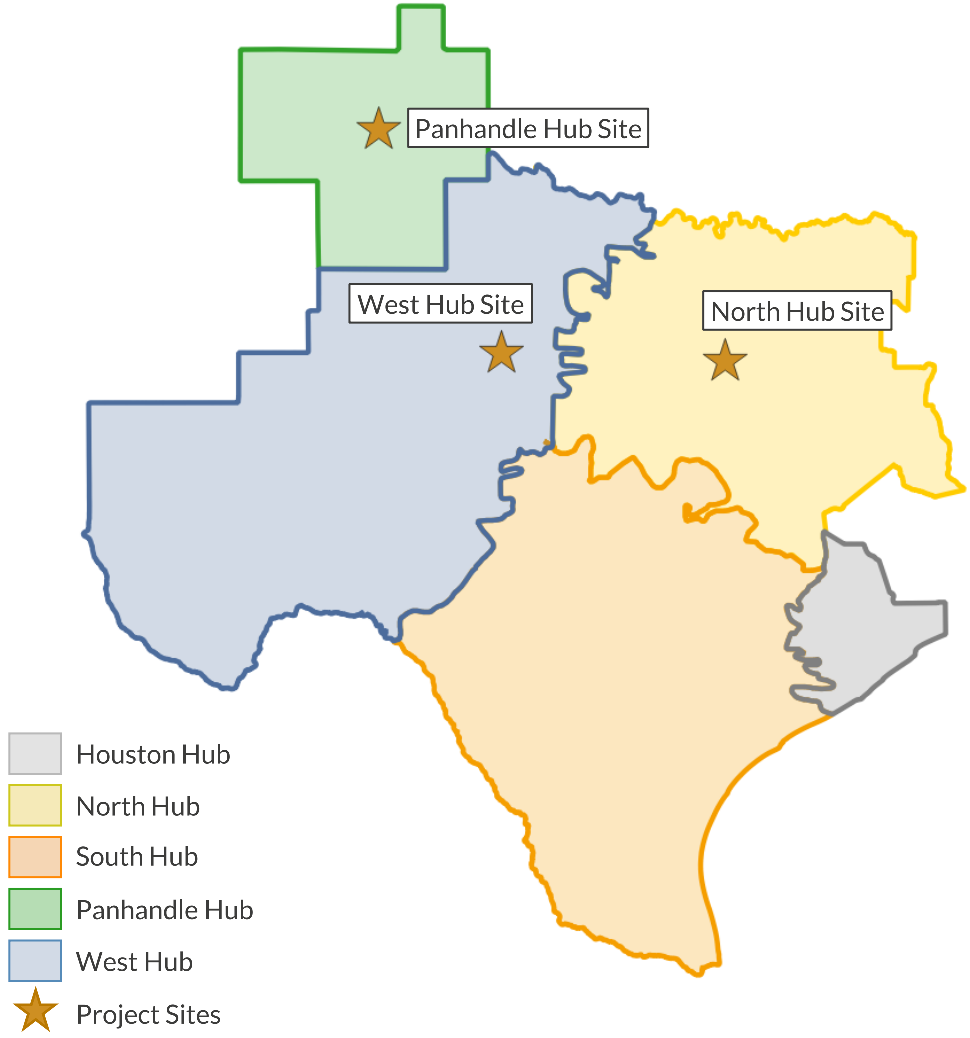
## Summary of sensitivities

| Sensitivity | Input changes (relative to Central case) | | Input details |
|---|---|---|---|
| **Weather Years** | **Demand** | | Load levels and volatility across sensitivities are based on historically observed temperatures of each weather year. Variation in total load reflects the heating and cooling demand of each year, with extreme weather events, such as winter storms and summer heat waves, driving higher energy consumption in those periods. |
| | **Production** | | Weather conditions like solar irradiance, wind speed, and temperature are captured by renewable capacity factor profiles and thermal plant availability assumptions. |
| | **Capacity** | | To isolate and test system resilience under different weather conditions, generation capacity is held fixed across the Central case and all weather year sensitivities. |
| | **Weather year characteristics** | **2011** | One of the hottest summers on record in Texas drove high cooling demand and strong renewable production. |
| *Aurora uses correlated demand and renewables profiles from each WY modeled to ensure consistency in results[1]* | | **2017** | A mild summer kept cooling demand and system scarcity low relative to other weather years. |
| | | **2022** | Elevated summer temperatures and Winter Storm Elliott contributed to system tightness across multiple months. |
| | | **2023** | An extreme summer heat wave with 55 days above 100˚F drove some of the highest levels of system scarcity across all weather years. |
| **Line Outages** | **Transmission line capacity** | | A crucial import corridor, the Venus Switch to Sam Switch 345kV line, was selected to go on outage from 2028 to 2030 to examine curtailment under a scenario with forced usage of smaller lines and other import paths. |
| **PCLR Energization** | **Data center capacity** | | To test the effects of a heightened PCLR energization rate on site-specific curtailment, more than 5GW of additional data center capacity was added near the North Hub Site facility. Of this additional capacity, 50% was modeled as firm load and 50% was modeled as PCLRs. |
| **Battery Duration** | **Co-located BESS duration** | | Quantifying the change in curtailment savings when a 2h battery system is used instead of a 4h battery. |

1) Historical metered demand, solar irradiance, and wind speed for each ERCOT hub and renewable zone are used to inform model inputs.

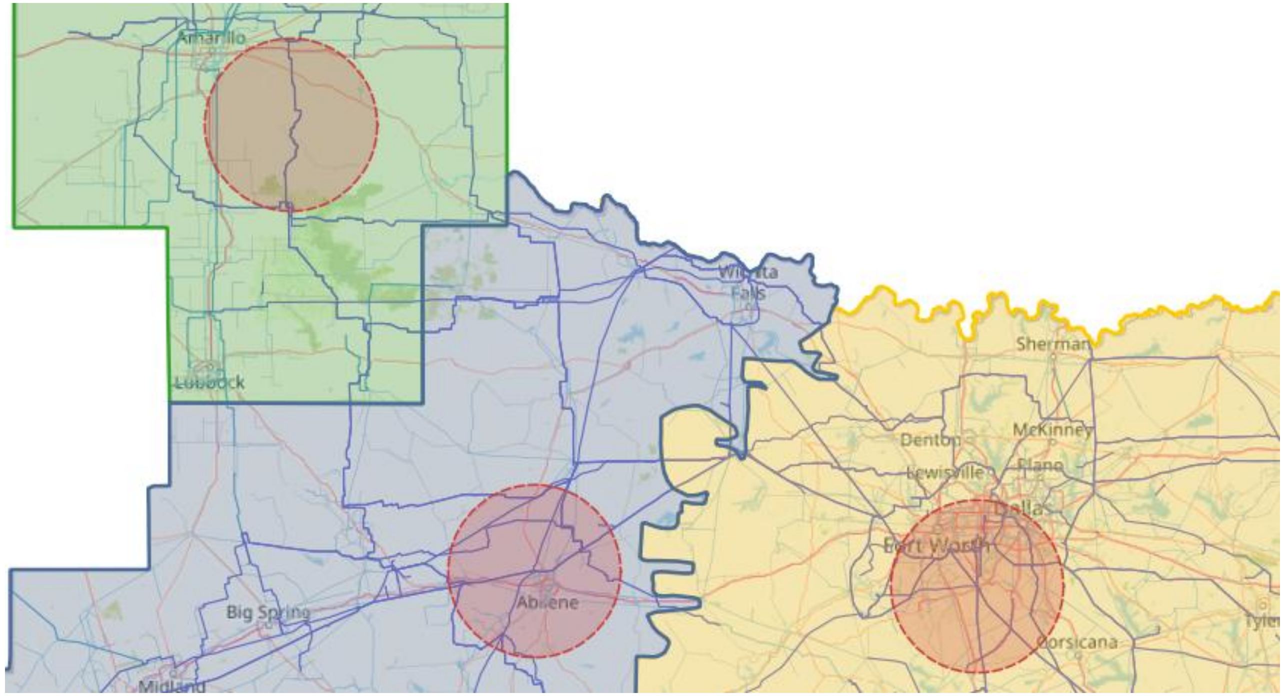
Sources: Aurora Energy Research, SPP

# Aurora selected 3 well-connected, representative data center sites to model 600MW PCLR additions and examine forecasted curtailment dynamics




| Modeled PCLR | Voltage at POI | Region | Capacity | Entry Year |
|---|---|---|---|---|
| **West Hub Site** | 345kV | West | 600MW | 2028 |
| **North Hub Site** | 345kV | North | 600MW | 2028 |
| **Panhandle Hub Site** | 345kV | Panhandle | 600MW | 2028 |

## ERCOT transmission topography near the assets




**Network:** Existing <100kV lines Existing 100+kV lines Existing 345kV lines

Sources: Aurora Energy Research

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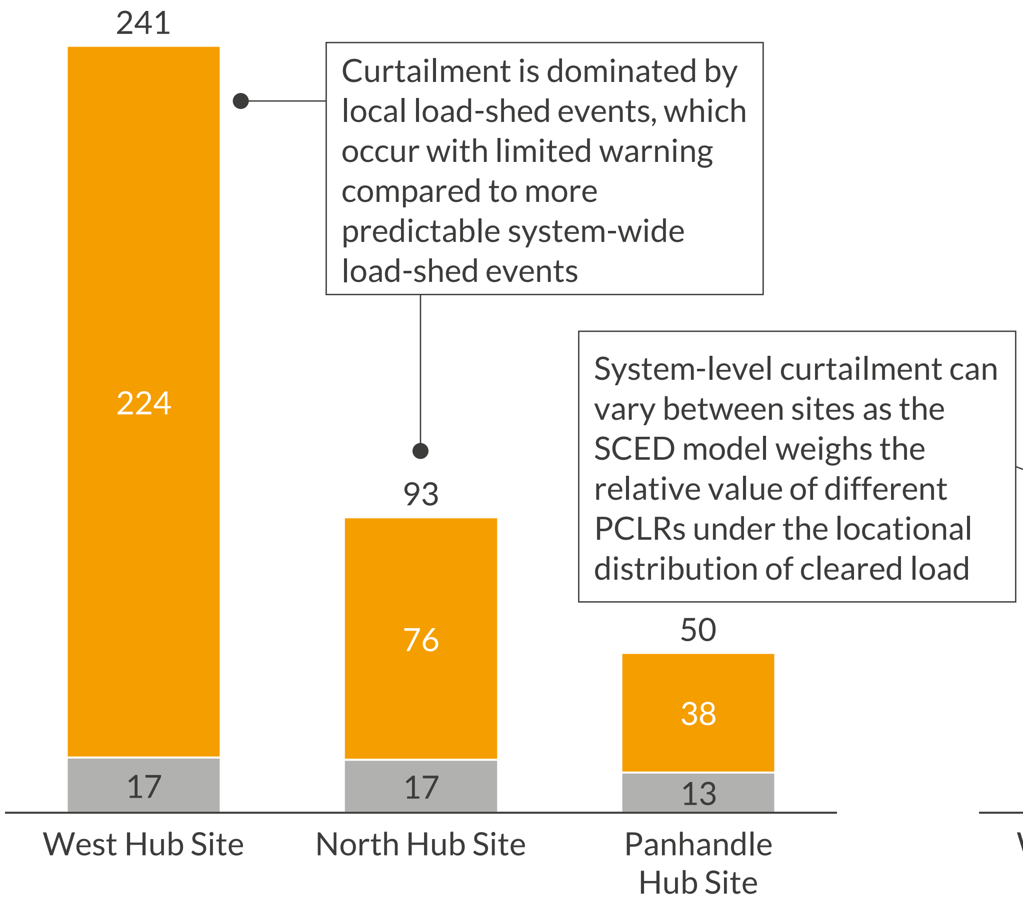
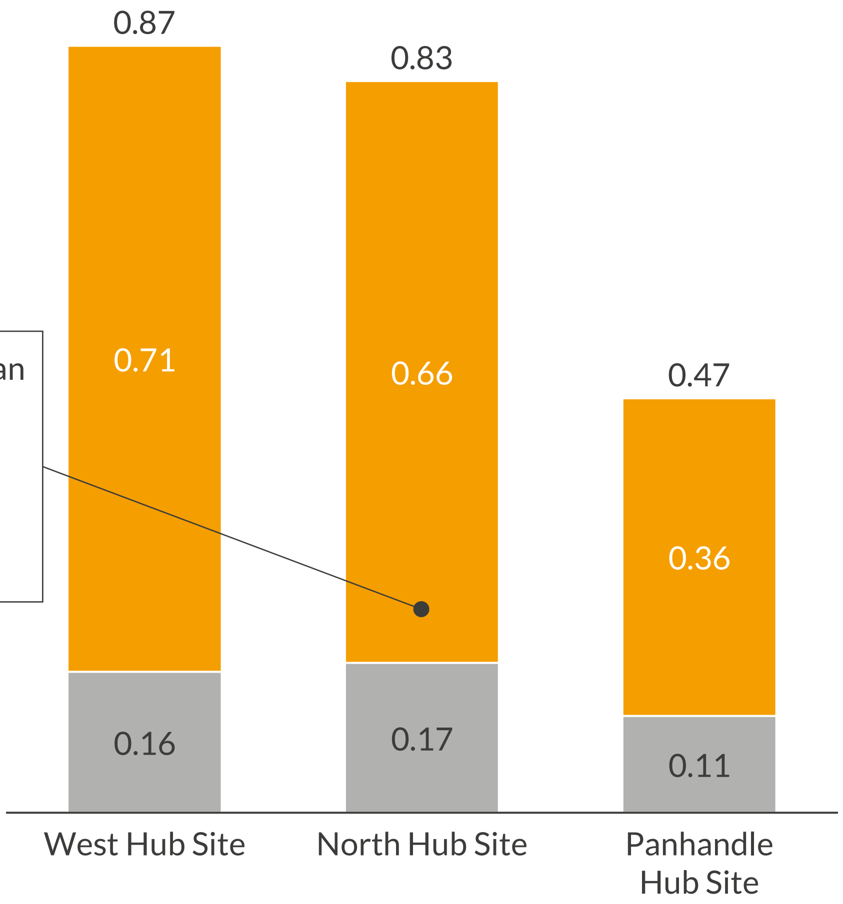
# Central | Even with a conservative demand forecast and moderate weather profiles, curtailment risk could be material for PCLRs

**Central scenario curtailment hours[1] (2028 – 2030)**
# hours/year




**Central scenario curtailment volume (2028 – 2030)**
% total demand




Local load shed   System-level load shed

- All three sites see moderate curtailment risk for a 600MW PCLR in the Central scenario, requiring between 0.45% and 0.9% curtailment on average from 2028 to 2030.
- The West Hub and North Hub sites see over 150% more curtailment by volume than the Panhandle Hub site. Curtailment risk is lower in the Texas Panhandle, an area with historically low demand and significant renewable deployment.
- While the West Hub site sees approximately the same curtailment volume as the North Hub site, it has over double the number of curtailment hours, indicating the prevalence of partial curtailment events.

1) Quantity of hours with any curtailment present.

Sources: Aurora Energy Research, ERCOT

# Weather years | As a summer peaking market, 2011, 2023, and 2022 stand out as the most volatile weather years, while 2017 is among the mildest

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| Year | | Heating degree days[1, 2] | Cooling degree days[1, 2] | Extreme temperature days[3] | Wind production,[4] % | Solar production,[4] % |
|---|---|---|---|---|---|---|
| 2010 | | 2,517 | 3,307 | 29 | | |
| 2011 | Extreme | 2,038 | 3,768 | 71 | | |
| 2012 | | 1,710 | 3,422 | 34 | | |
| 2013 | Central | 1,872 | 3,249 | 28 | | |
| 2014 | | 2,513 | 2,938 | 15 | | |
| 2015 | | 2,227 | 3,229 | 15 | | |
| 2016 | | 1,629 | 3,288 | 18 | | |
| 2017 | Low | 1,251 | 3,246 | 10 | | |
| 2018 | | 1,983 | 3,411 | 23 | | |
| 2019 | | 2,175 | 3,256 | 14 | | |
| 2020 | | 1,869 | 3,038 | 9 | | |
| 2021 | | 2,067 | 2,996 | 8 | | |
| 2022 | High | 1,868 | 3,447 | 47 | | |
| 2023 | Extreme | 1,854 | 3,510 | 55 | | |
| 2024 | | 1,814 | 3,469 | 23 | | |
| 2025 | | 1,775 | 3,285 | 7 | | |

Weather Year Sensitivities | HDD[2] | CDD[2] | Extreme temperature days[3] | Wind capacity factor | Wind CF at high load hours | Solar capacity factor | Solar CF at high load hours

1) Data taken for DFW. 2) Cooling degree days and heating degree days are calculated using a 65°F base temperature, representing the daily difference between the mean temperature and this threshold—positive when above 65°F for CDD and when below 65°F for HDD, summed over the period. 3) Extreme temperature days have max temperature at or above 100°F. 4) Wind and solar capacity factors (CF) shown as the annual average and as an average over the top 20 total load hours of that year.

Sources: Aurora Energy Research, NOAA

# Weather years | Curtailment outcomes worsen across extreme weather years; the North Hub site sees 2.67% curtailment in the 2023 Weather Year scenario

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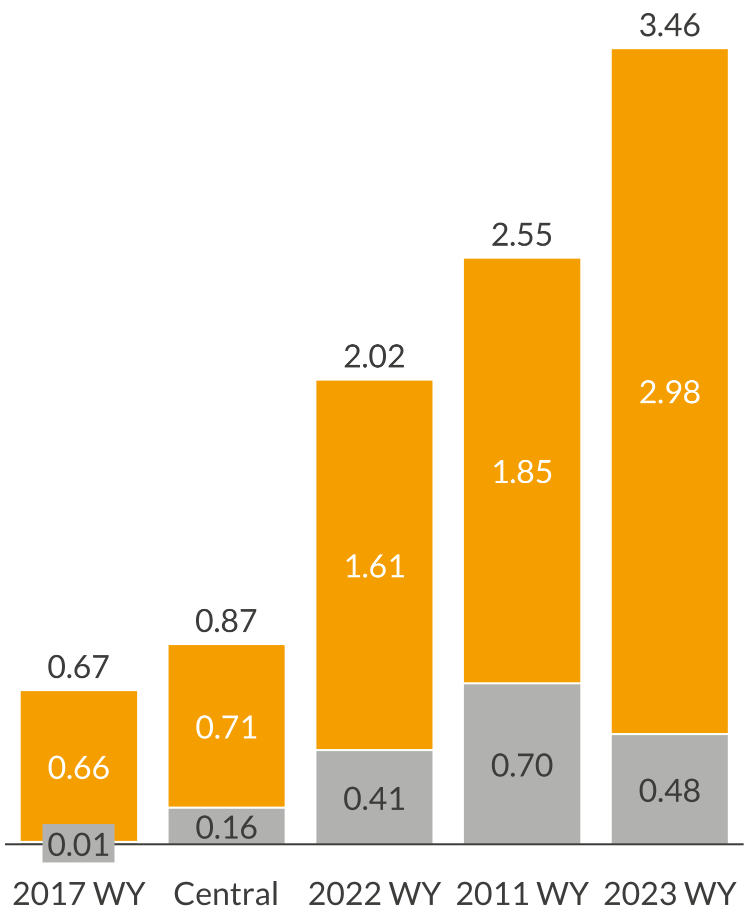
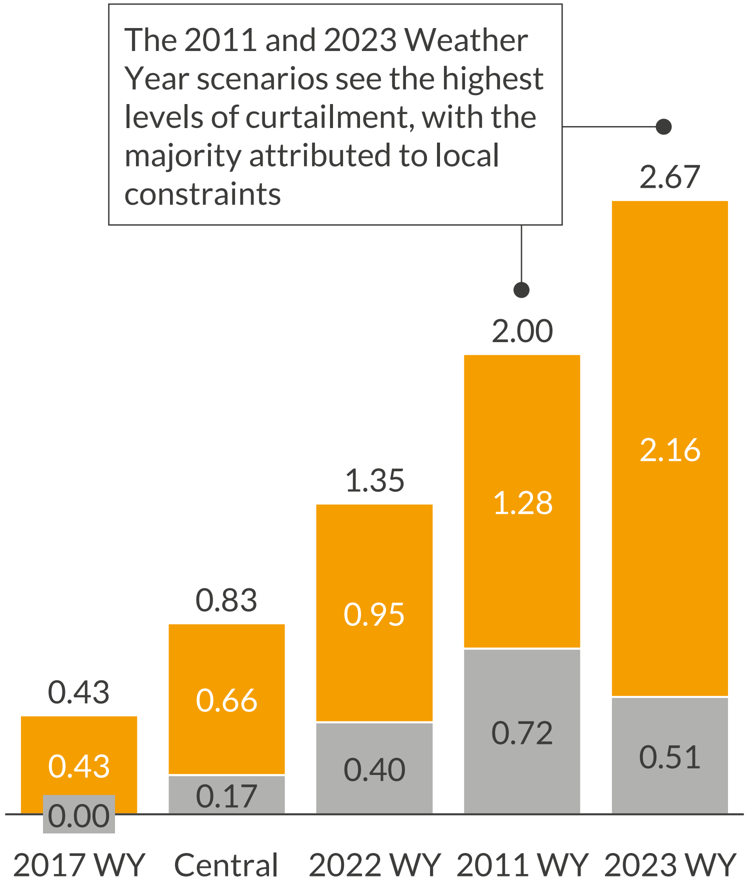
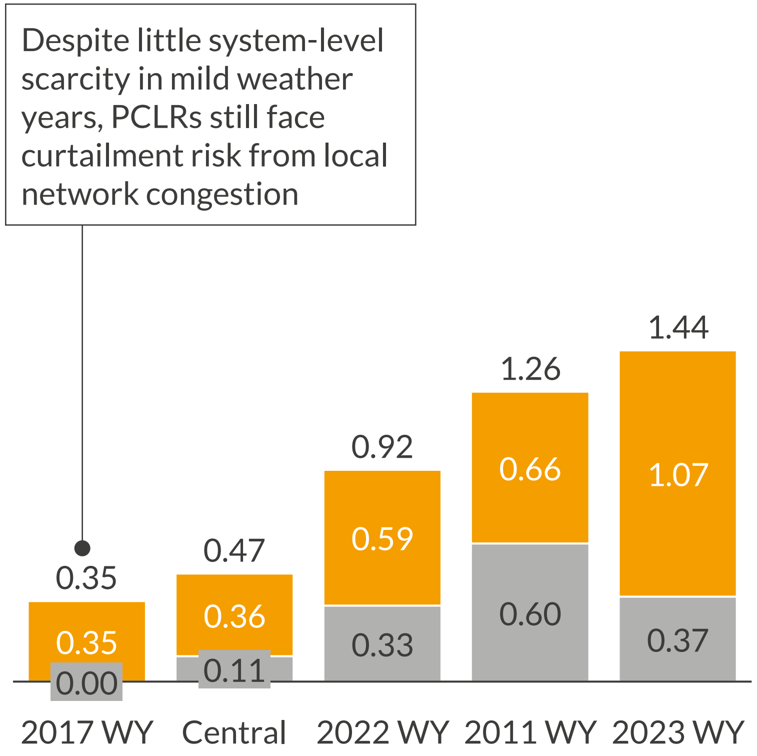
**West Hub Site curtailment volume (2028 – 2030)**
% total demand




**North Hub Site curtailment volume (2028 – 2030)**
% total demand




**Panhandle Hub Site curtailment volume (2028 – 2030)**
% total demand




Local load shed System-level load shed

Sources: Aurora Energy Research, ERCOT

# Curtailment Events | Events look substantially different across the 3 sites, with the West Hub site experiencing a high prevalence of local, low-severity events

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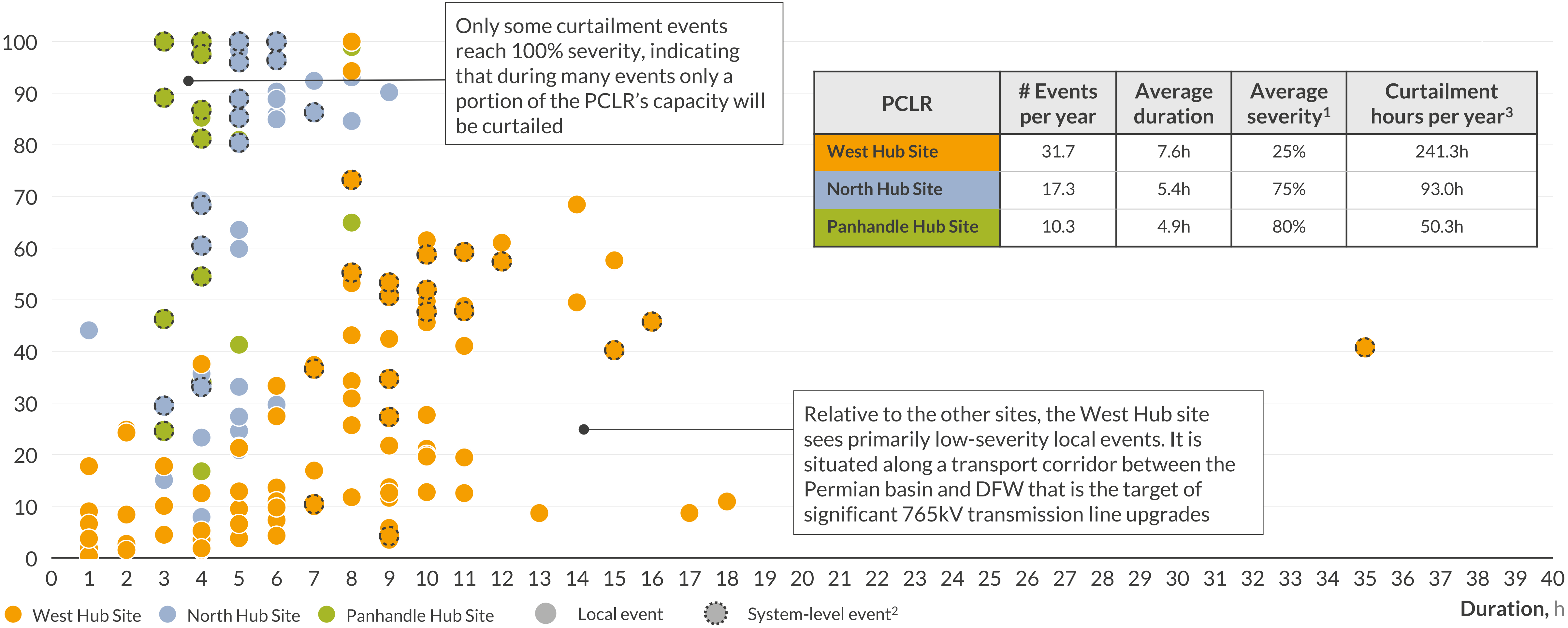
**Curtailment events in the Central scenario, 2028-2030**
% Severity[1]




| PCLR | # Events per year | Average duration | Average severity[1] | Curtailment hours per year[3] |
|---|---|---|---|---|
| West Hub Site | 31.7 | 7.6h | 25% | 241.3h |
| North Hub Site | 17.3 | 5.4h | 75% | 93.0h |
| Panhandle Hub Site | 10.3 | 4.9h | 80% | 50.3h |

1) Severity indicates the average portion of the PCLR's capacity curtailed during the event. 2) An event with any system-level curtailment over its duration. 3) Quantity of hours with any curtailment present.

Sources: Aurora Energy Research

# Agenda

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# Front-of-meter netting agreements are a proposed construct that enables co-sited generation capacity to be attributed to a PCLR

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## Front-of-meter netting agreement overview

- A front-of-meter netting agreement is a contract between a PCLR[1] and co-sited generation resource that attributes the generator's capacity to the PCLR from the perspective of SCED and the grid operator.

## Co-siting *without* a netting agreement (non-netted configuration):

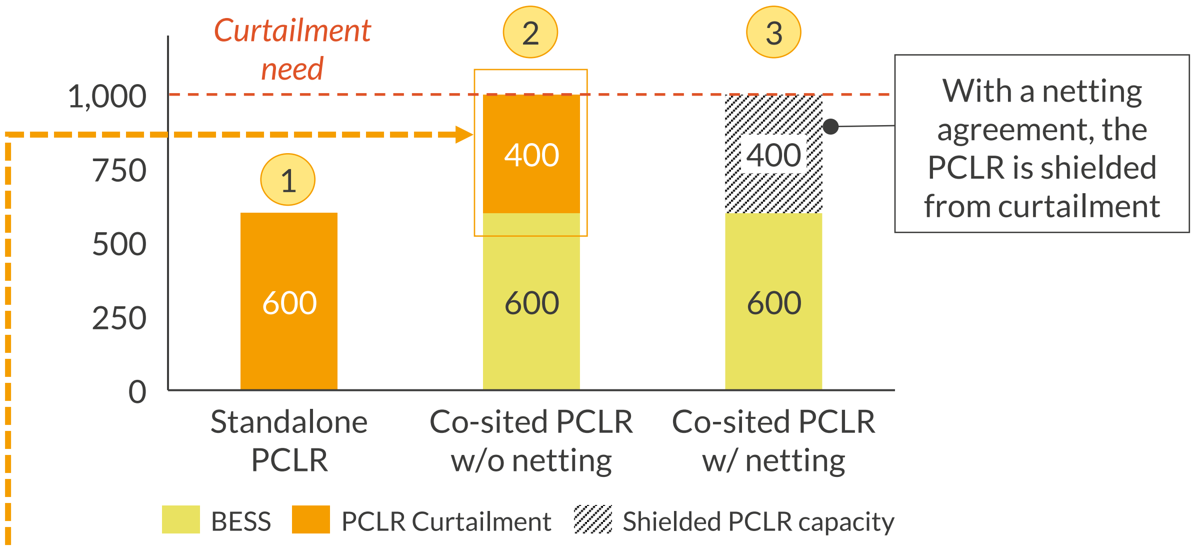
- Large loads taking ERCOT's PCLR designation assume curtailment risk. Some of this risk can be offset by co-siting with a front-of-meter dispatchable resource such as a gas peaker or BESS.
- However, ERCOT's Market Management System (MMS) mandates distinct Resource IDs, meaning there is no way for SCED to attribute the co-sited generator to the load that financed it.
- If SCED requires more capacity than the co-sited generator can provide, SCED will dispatch ***additional*** capacity from the PCLR load itself, often happening with little notice.

## Co-siting *with* a netting agreement (netted configuration):

- During periods of local congestion, the PCLR demand is covered MW for MW by the co-sited resource. While the asset has sufficient dispatch capability, PCLR conditional capacity is protected from curtailment.
- The PCLR shield persists so long as the co-sited resource is available, **affording the data center operator valuable lead time to manage their load.**

**Impact of netting during a local curtailment event, *ILLUSTRATIVE***

MW




A local curtailment event occurs with **little warning; SCED seeks 1,000MW of local capacity** to dispatch

1. In the standalone configuration the **PCLR is fully exposed to SCED** and it's entire 600MW capacity is called to curtail.
2. In the co-sited configuration **without** netting, the PCLR is only **partially covered.** SCED's needs exceed the BESS capacity and the PCLR is curtailed.
3. With a front-of-meter netting agreement in place, **SCED attributes the capacity of the BESS to the PCLR**, shielding the PCLR from SCED. The shield persists so long as the co-sited resource is available to SCED.

1) Provisional Controllable Load Resource. 2) High Impact Large Load, Conditional High Impact Large Load.

Sources: Aurora Energy Research, Global Capacity Alliance

# Netting agreements are implemented through a telemetry link, creating a curtailment shield for the PCLR during periods of severe local congestion

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**Front-of-meter BESS co-sited *without* a netting agreement** | **Front-of-meter BESS co-sited *with* a netting agreement**


| Item | Description | Non-netted case | Netted case |
|---|---|---|---|
| Hardware connection | The BESS and the PCLR are connected independently to the bus | ✓ | ✓ |
| Bidding behavior | The Qualified Scheduling Entity (QSE) bids the BESS below the PCLR in merit order | ✓ | ✓ |
| Telemetry Link | PCLR has a "Telemetry Link" that allows the QSE to dynamically firm the load while the BESS is offered and equivalently offsetting. | ✗ | ✓ |
| Local curtailment shield | The PCLR is protected against curtailment events driven by local congestion | ✗ | ✓ |
| System-level curtailment shield | The PCLR is protected against curtailment events driven by system-level scarcity | ✗ | ✗ |

- In the **Non-netted case**, the BESS and the PCLR are treated as independent by SCED. The QSE managing both is assumed to successfully bid the BESS ahead of the PCLR in the merit order, but curtailment events that exceed the mitigating capacity of the BESS will then cause PCLR curtailment. The BESS capacity is not attributed to the PCLR.
- In the **Netted case,** the QSE managing both assets temporarily firms the PCLR in SCED by raising it's Low Power Consumption (LPC) limit while the equivalently offsetting resource is available and bid into the market. This Telemetry Link ensures the mitigation of the BESS is attributable to the PCLR.

Sources: Data & Modeling: Aurora Energy Research, Architecture & Telemetry Link Concept: V-Wire

# Aurora modeled the impact of a co-sited BESS resource on PCLR curtailment across both non-netted and netted configurations

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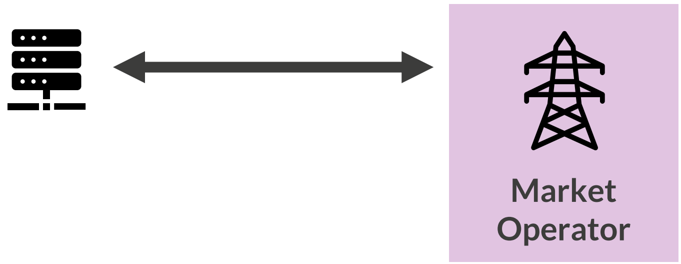
## Summary of site configurations

### No-BESS case

- Configuration: A 600MW Provisional Controllable Load Resource (PCLR) without an additional generation resource.
- A PCLR with no BESS would be fully exposed to curtailment by the market operator (MO) under local constraints. Any local or system-level scarcity can cause curtailment.
- Curtailment events, particularly on the local level, can happen with little advanced notice down to the 5-minute interval. This can interrupt valuable operations and reduces the ability to deploy mitigation strategies like shifting computing loads.

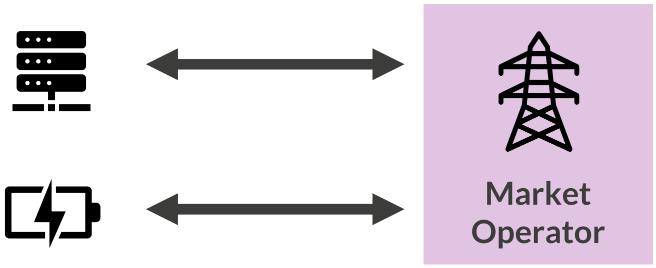
**Curtailment risk: High**




### Non-netted case

- Configuration: A 600MW PCLR and a front-of-meter 600MW BESS **without a netting agreement.**
- BESS dispatch is partially governed by SCED optimization, prioritizing discharge during local curtailment events.
- A PCLR with a non-netted BESS may be curtailed immediately without notice since it is dispatched independently of the co-located BESS.
- This reduces the incentive for the PCLR to fund co-located BESS capacity since it may still face significant curtailment risk without a window of lead-time for load management.

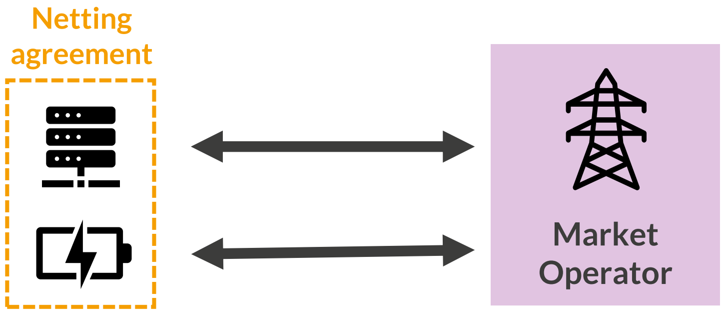
**Curtailment risk: Medium**




### Netted case

- Configuration: A 600MW PCLR and a front-of-meter 600MW BESS **with a netting agreement.**
- BESS dispatch is partially governed by SCED optimization, prioritizing discharge during local curtailment events.
- A PCLR with an FTM-netted BESS will be shielded from curtailment while the BESS has sufficient SOC. This can eliminate curtailment events or provide lead-time to employ mitigation strategies.
- The PCLR is not shielded during times of system-level scarcity regardless of BESS SOC, preserving the MO's emergency response abilities.

**Curtailment risk: Low**



# A 4-hour netted front-of-the-meter BESS can provide a PCLR with up to four hours of lead time during an extended curtailment event

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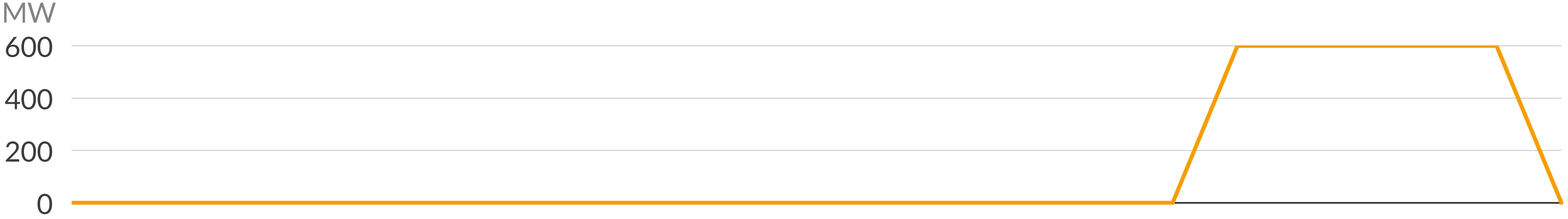
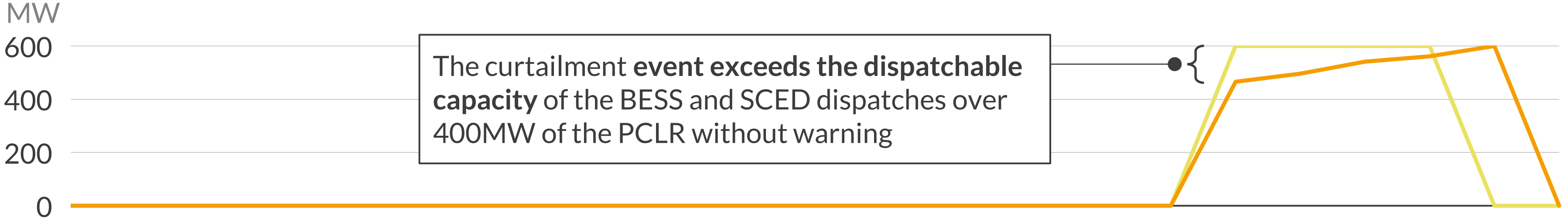
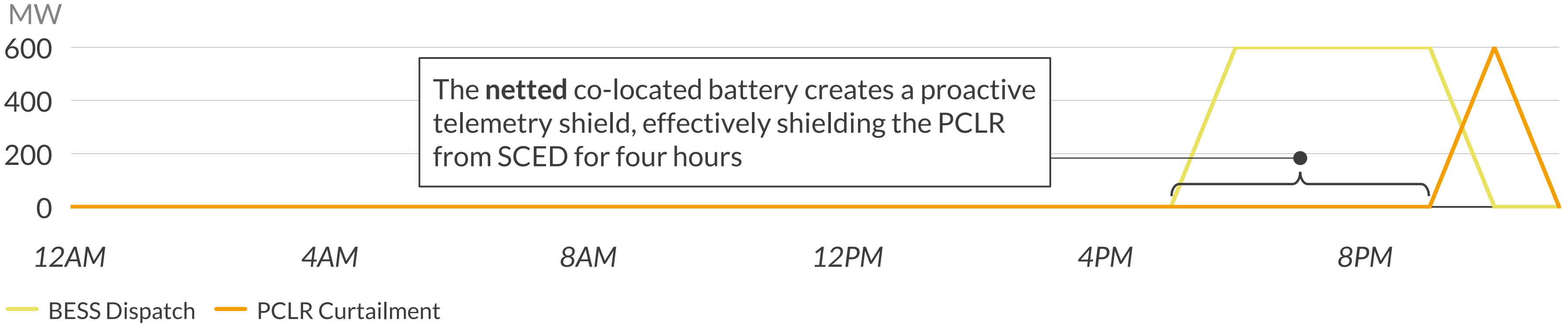
**No BESS case North Hub Site hourly curtailment (August 31st, 2028)**




**Co-located FTM, non-netted case North Hub Site hourly curtailment and BESS dispatch (August 31st, 2028)**




**Co-located FTM, netted case North Hub Site hourly curtailment and BESS dispatch (August 31st, 2028)**



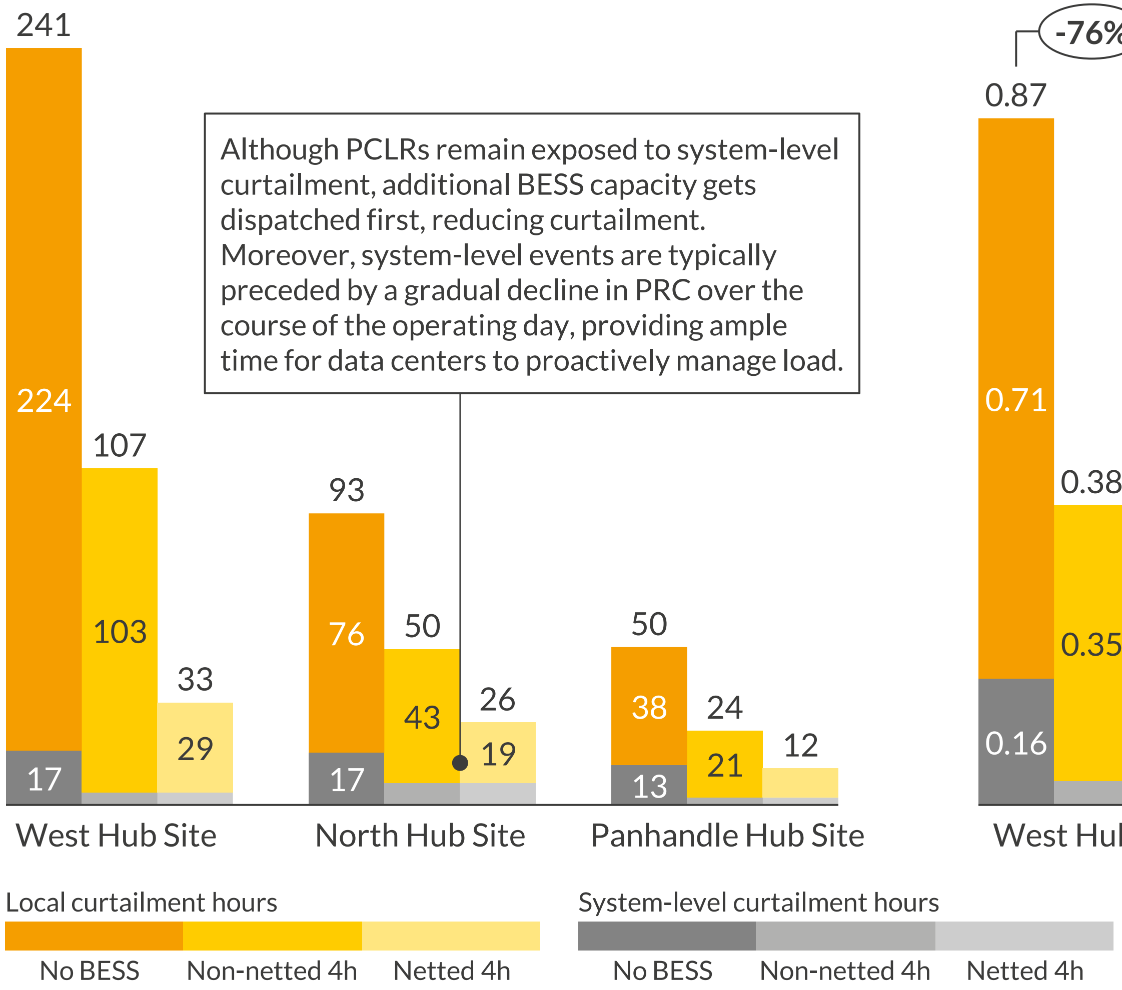

Sources: Aurora Energy Research

- During a local curtailment event on August 31st, 2028, the North Hub site PCLR is subject to **five hours of full 600MW curtailment**.
- In the non-netted case, the front-of-the-meter BESS has minimal impact on curtailment. Additionally, the PCLR is given no lead-time to prepare for the event, as the immediate dispatch from SCED requires capacity beyond what the battery can provide by itself.
- The netted front-of-the-meter BESS fully mitigates curtailment in the first four hours of the event. Once the BESS has fully discharged, the PCLR is again exposed to curtailment for the last hour, with the benefit of having had four hours of advanced notice.

# Across sites, the usage of FTM netting reduces total curtailment by ~50% compared to the non-netted case

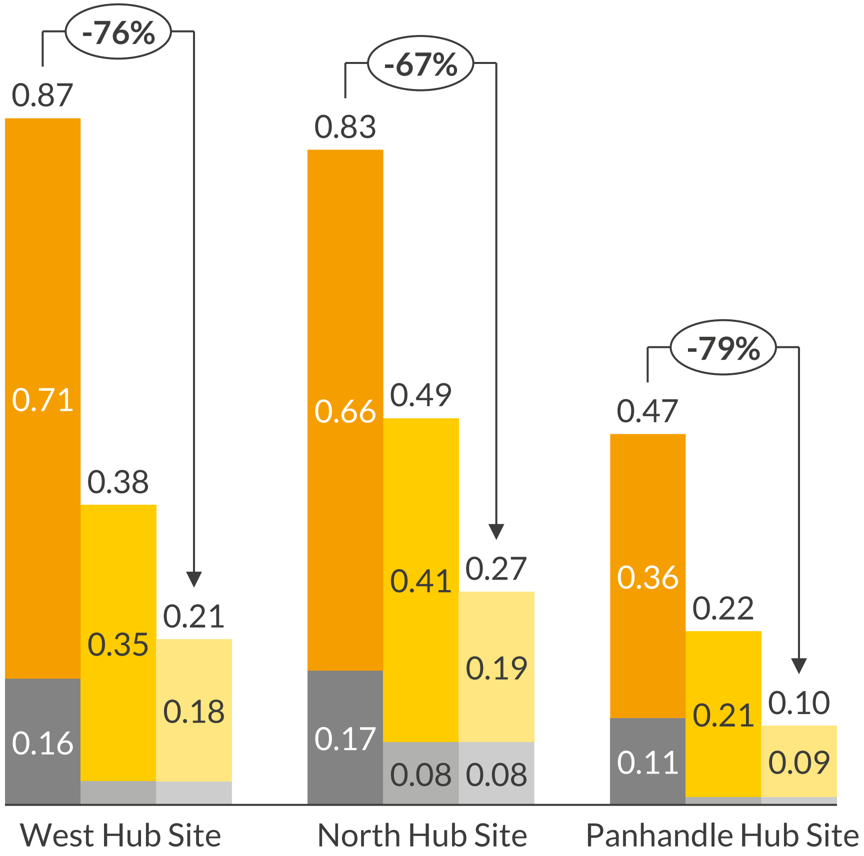
Central scenario curtailment hours[1] (2028 – 2030)

# hours/year




Central scenario curtailment volume (2028 – 2030)

% total demand




- The addition of a co-located 600MW BESS significantly benefits PCLR curtailment metrics even before employing the FTM netting construct, reducing total curtailment volume by ~50% across sites.
- FTM netting provides additional curtailment savings beyond a standard BESS, reducing total curtailment by 74% across sites relative to a PCLR without a co-located battery.
- Many curtailment events **exceed the real-time discharge capability of the BESS**. As a result, PCLRs can be curtailed in the non-netted case even while the BESS is discharging. In the netted case, **the netting agreement enabled Telemetry Link removes this risk**, further reducing curtailment.

1) Quantity of hours with any curtailment present.

Sources: Aurora Energy Research

# Across weather years, a netted BESS offsets curtailment risk more effectively than a non-netted BESS

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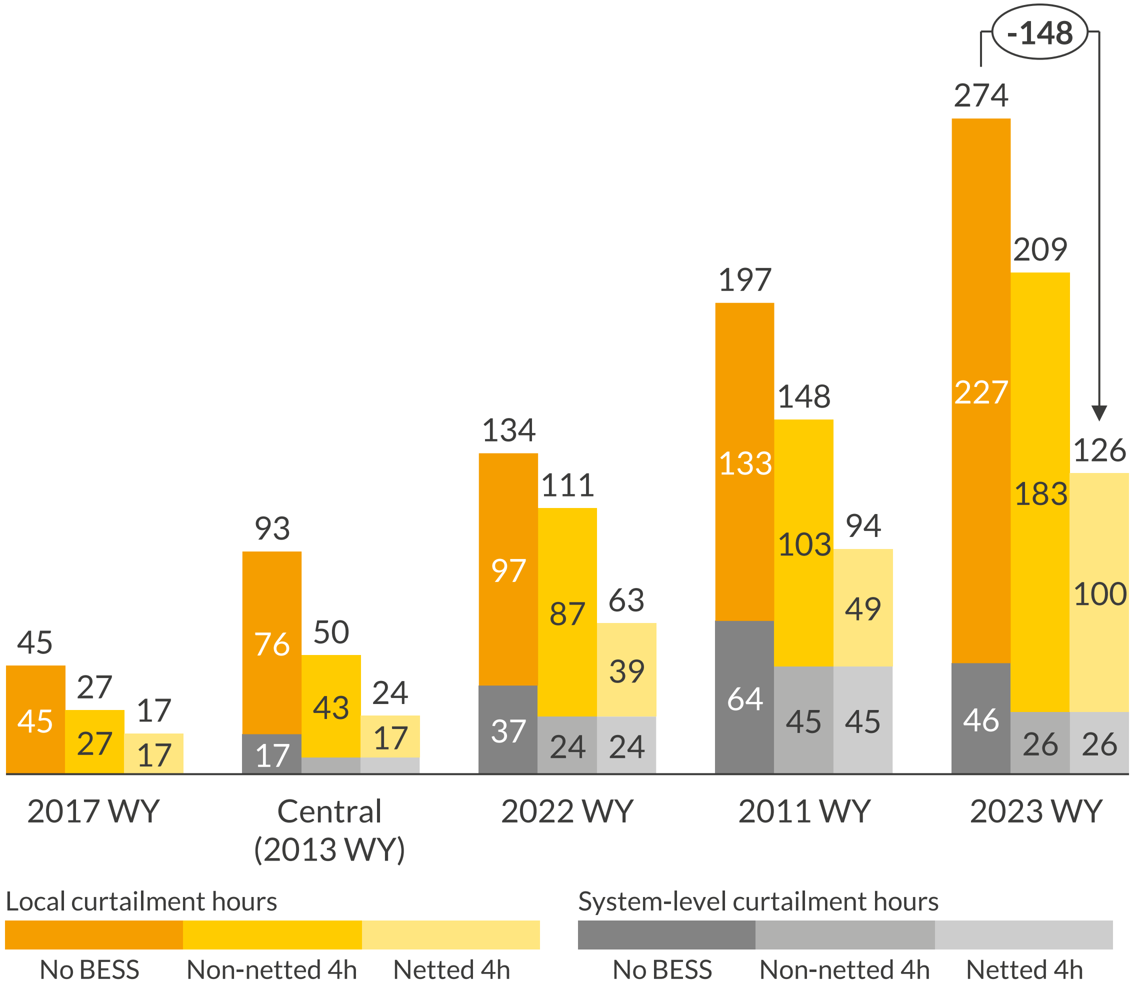
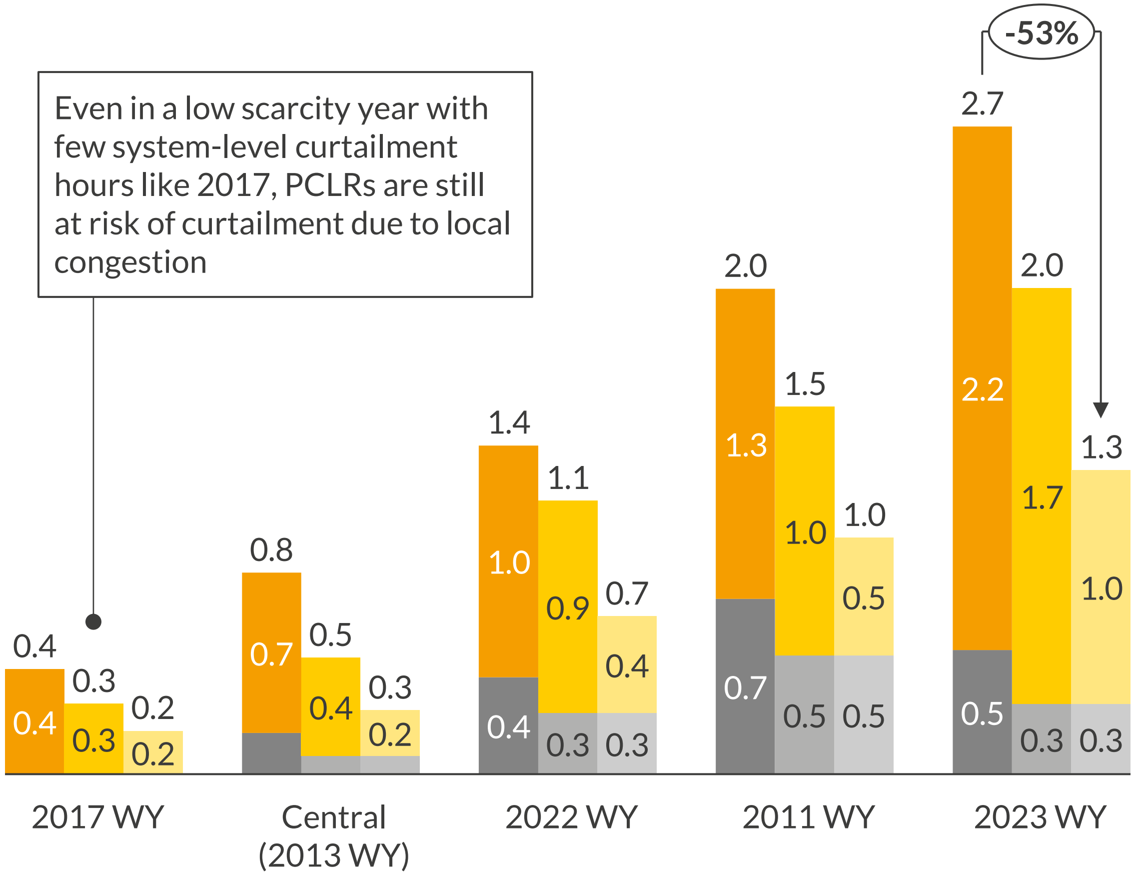
**North Hub Site curtailment hours[1] (2028 – 2030)**
# hours/year




**North Hub Site scenario curtailment volume (2028 – 2030)**
% total demand




1) Quantity of hours with any curtailment present.

Sources: Aurora Energy Research

# Agenda

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# PCLR Energization | The PCLR energization sensitivity examines the North Hub site curtailment under a system with greater PCLR capacity

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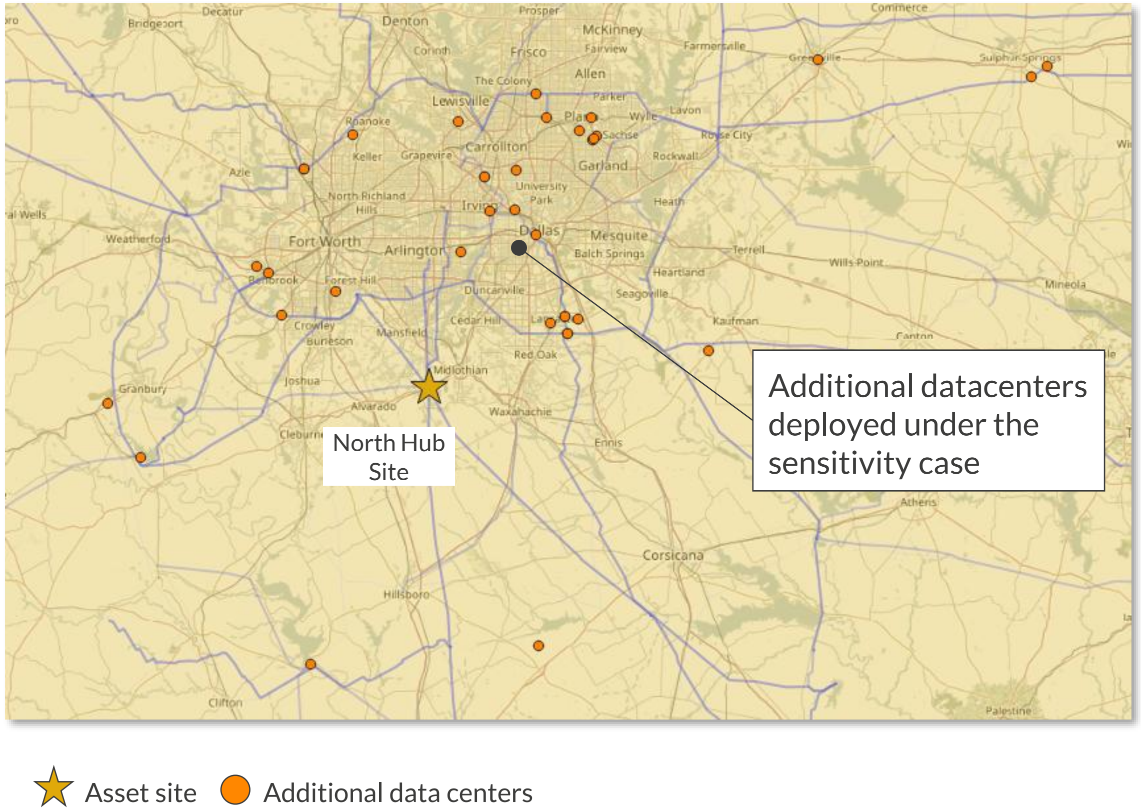
*As data center development and PCLR energization increase in the surrounding region, the North Hub site may face elevated curtailment risk. Aurora assessed this sensitivity by modeling higher deployment levels throughout 2028-2030.*

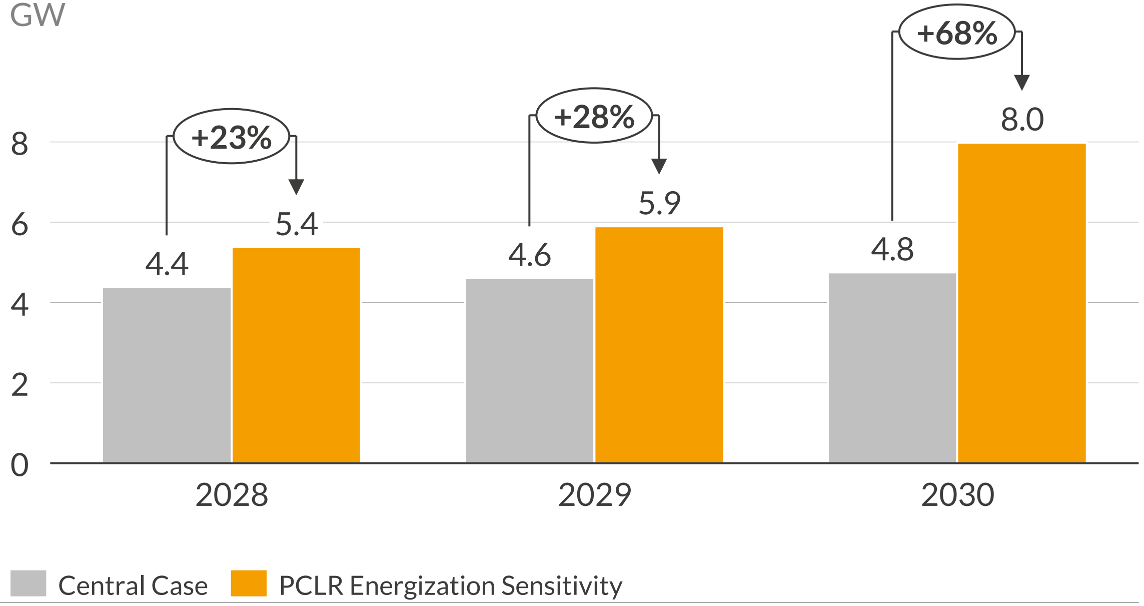
**Map of new and expanded data center sites under the PCLR energization sensitivity, 2030**




**Aurora's data center assumption methodology**

- Aurora uses a third-party data provider to take a view on total data center capacity in its Central case, based on developer and project stage.
- In the PCLR energization study, Aurora uses this data set to expand capacity around the DFW region. Regional data center capacity is increased to 5.4GW in 2028 and 8.0GW by 2030.
- A flat assumption of 50% firm load and 50% PCLR capacity was applied across all added facilities.

**Data center capacity, North Hub**
GW




Sources: Aurora Energy Research, Baxtel

# PCLR Energization | Curtailment of the North Hub site increases with more PCLR energization under a scarcer system with higher load

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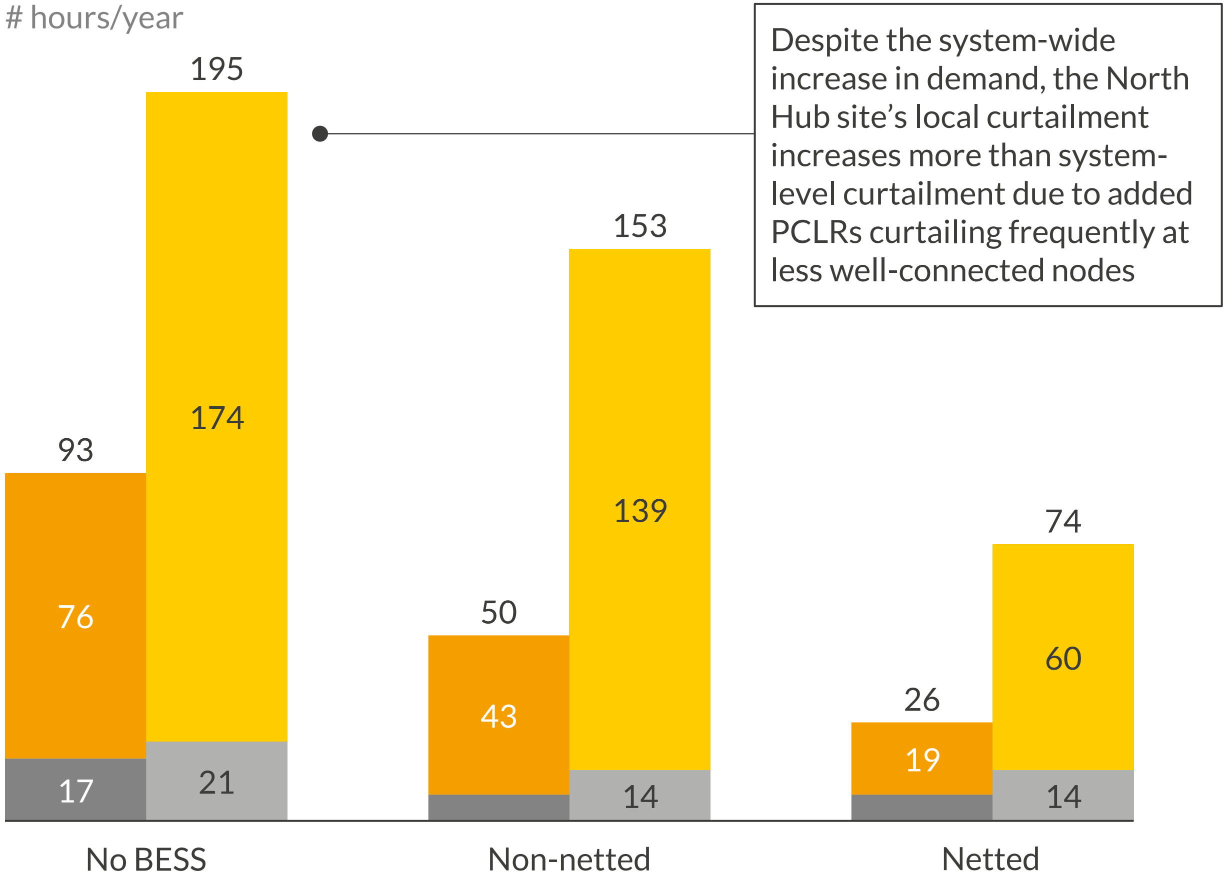
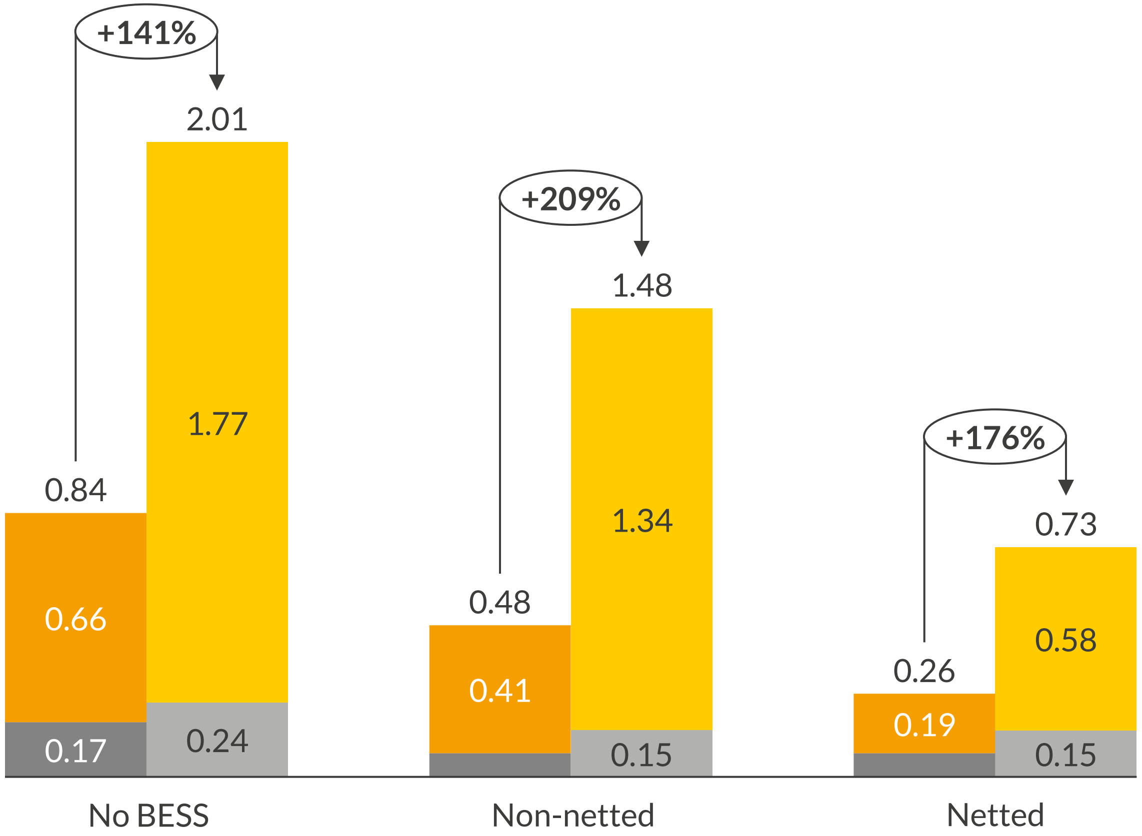
## North Hub Site curtailment hours[1] (2028 – 2030)

# hours/year




## North Hub Site total curtailment (2028 – 2030)

% total demand




Local curtailment hours: Central Case; PCLR Energization Sensitivity

System-level curtailment hours: Central Case; PCLR Energization Sensitivity

1) Quantity of hours with any curtailment present.

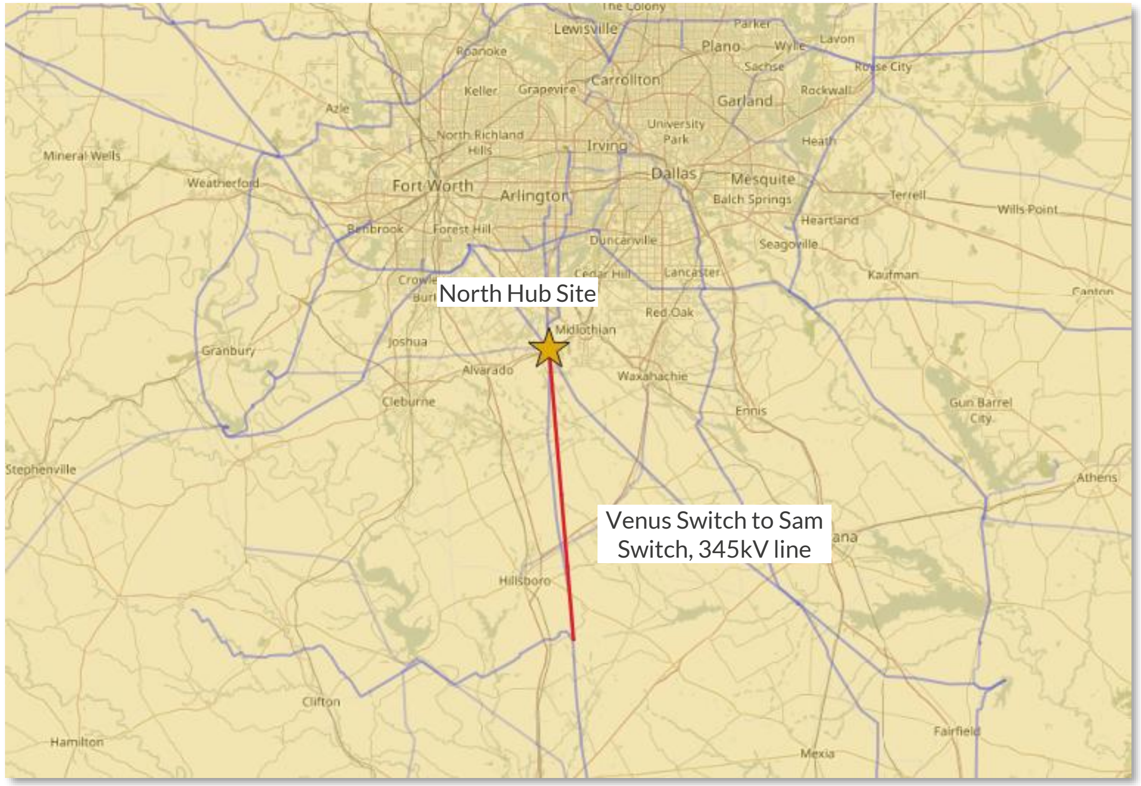
Sources: Aurora Energy Research

# Line Outages | The line outage sensitivity examines curtailment under the loss of a crucial power import path for the North Hub site

AURORA

*As key transmission lines are upgraded to accommodate additional data center load, the North Hub site may face elevated curtailment risk. Aurora assessed this sensitivity by modeling outages on the Venus Switch to Sam Switch line throughout 2028-2030.*

**Map of selected line outage**




★ Asset site

**Venus Switch to Sam Switch details**

| | Description |
|---|---|
| **Voltage** | 345kV |
| **Length** | Approx. 38mi |
| **Counties** | Ellis County, Hill County |
| **Developer** | Oncor |

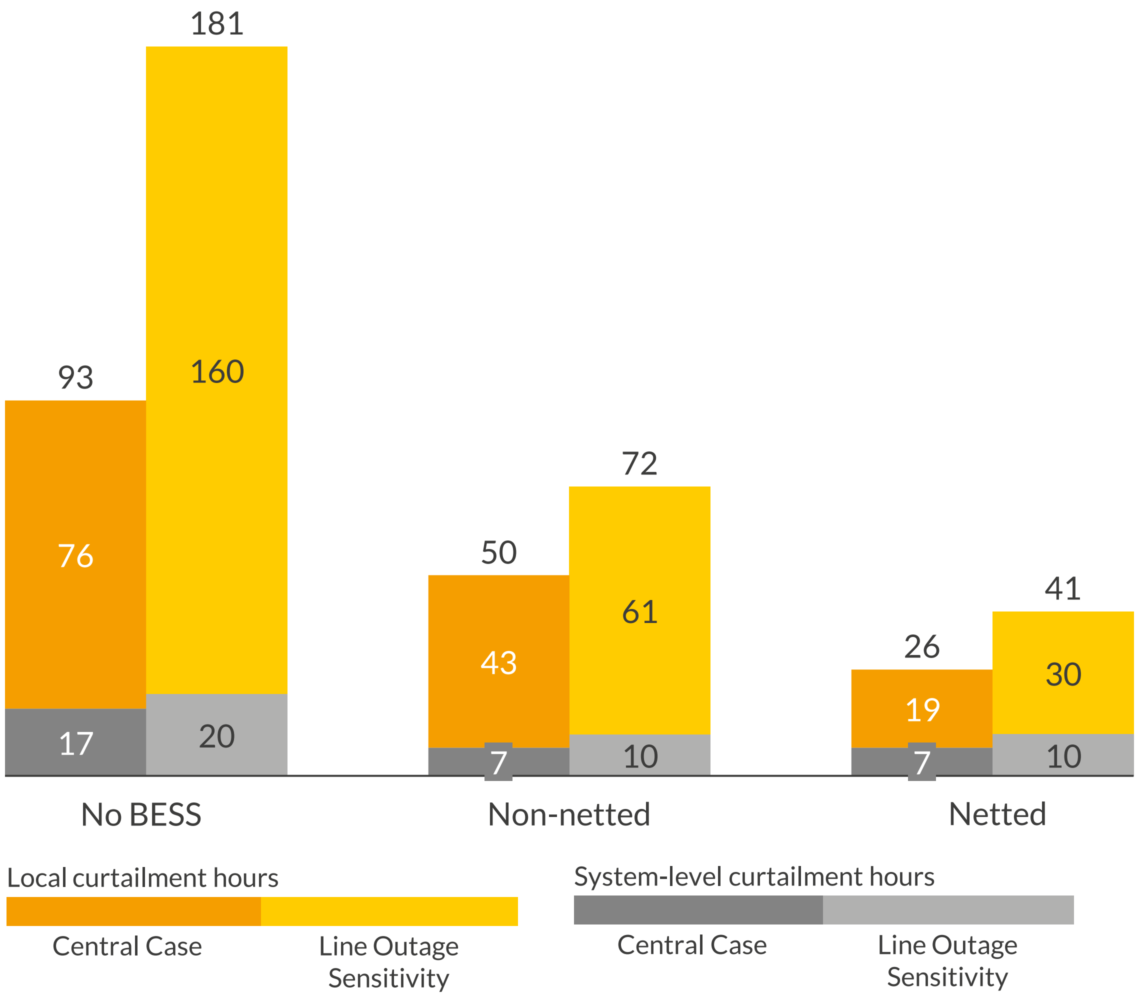
- Line outages due to contingencies or upgrades are a risk to PCLRs when they fall along import paths to the data center sites.
- The Venus Switch to Sam Switch 345kV line runs along a key import corridor for the North Hub Site and the greater Dallas/Fort Worth area.
- The line is a part of Oncor's 345kV rebuild project, approved by ERCOT in February 2025 as a part of a plan to improve the capacity and thermal rating of the broader import corridor.
- In a June 2026 Operations Report, ERCOT indicated that the line was a binding constraint for 7 days throughout the month, with an approximate congestion rent of over $4 million.

Sources: Aurora Energy Research, ERCOT

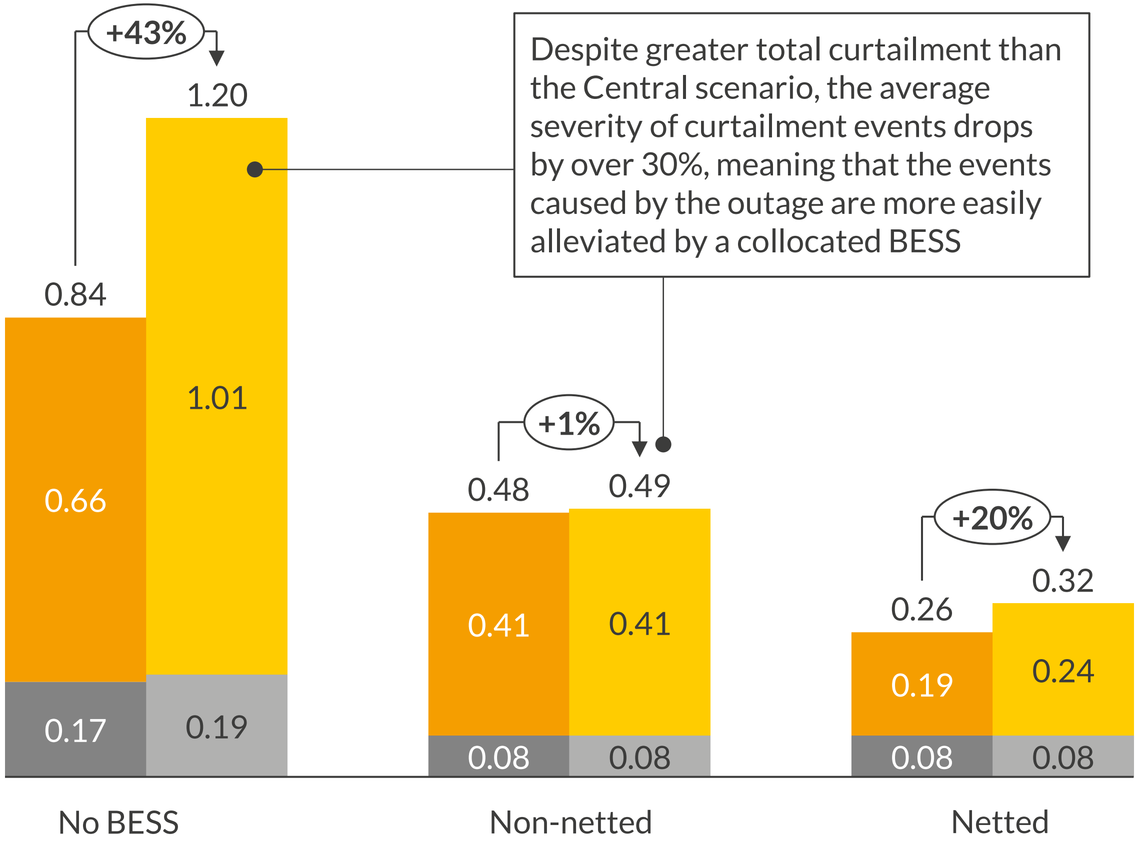
# Line Outages | The effects on curtailment volume of the Venus to Sam Switch outage are mitigated by a 4h BESS in the Central scenario

AURORA

**North Hub Site curtailment hours[1] (2028 – 2030)**
# hours/year




**North Hub Site total curtailment (2028 – 2030)**
% total demand



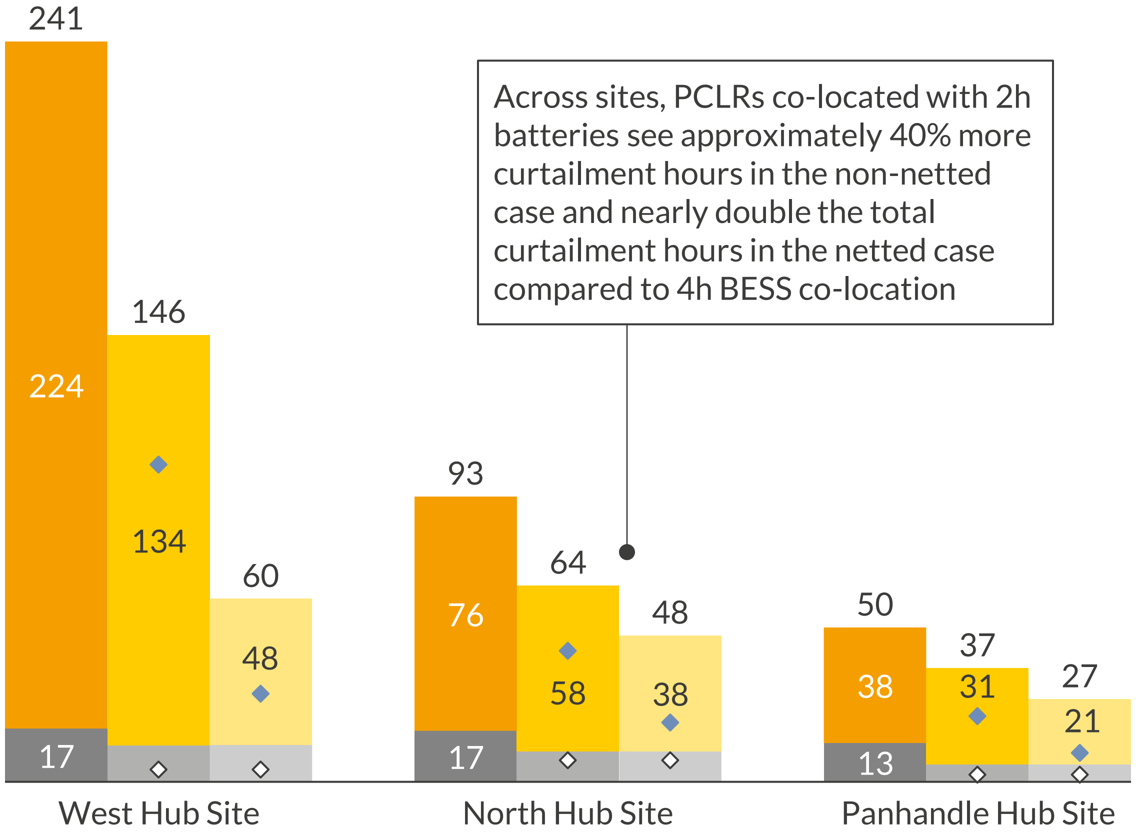

1) Quantity of hours with any curtailment present.

Sources: Aurora Energy Research

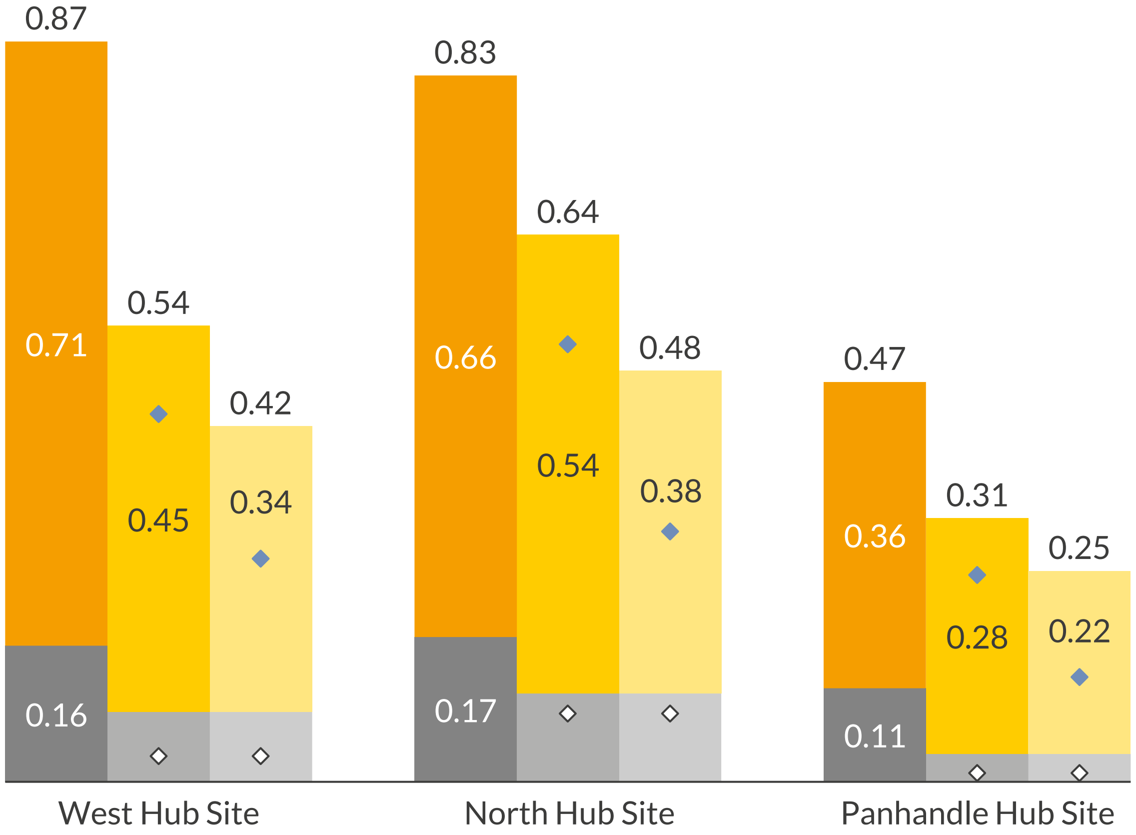
# 2-hour BESS | A shorter-duration battery offers some curtailment protection, but it is less effective than a 4h BESS at curtailment mitigation

AURORA

**North Hub Site curtailment, Central (2028 – 2030)**
# hours/year




**North Hub Site curtailment, Central (2028 – 2030)**
% total demand





1) Local 4h value relative to local 2h baseline.

Sources: Aurora Energy Research

# Agenda

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# Weather Years | The 2011 and 2023 weather years stress-test PCLR curtailment and FTM netting, illustrating persistence of Central results

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| Weather Year | Scenario | Curtailment hours[1] (# hours/year) | | | Total curtailment events (# events/year) | | | Total curtailment (% total demand) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | West Hub Site | North Hub Site | Panhandle Hub Site | West Hub Site | North Hub Site | Panhandle Hub Site | West Hub Site | North Hub Site | Panhandle Hub Site |
| Central (2013) | No BESS | 241.3 | 93 | 50.3 | 31.7 | 17.3 | 10.3 | 0.87 | 0.83 | 0.47 |
| | Non-netted | 107.3 | 49.7 | 23.7 | 15 | 11 | 7 | 0.38 | 0.48 | 0.22 |
| | Netted | 32.7 | 26.3 | 11.7 | 7 | 10 | 5.7 | 0.21 | 0.26 | 0.10 |
| 2011 | No BESS | 423.7 | 196.7 | 120 | 50 | 33.7 | 22.3 | 2.55 | 2.0 | 1.26 |
| | Non-netted | 282.7 | 148 | 82.7 | 31 | 29.3 | 19.3 | 1.84 | 1.51 | 0.81 |
| | Netted | 137 | 94 | 60 | 25.7 | 23 | 14.3 | 1.21 | 0.97 | 0.62 |
| 2017 | No BESS | 201.7 | 45.3 | 35.3 | 27.3 | 6.3 | 5 | 0.67 | 0.43 | 0.35 |
| | Non-netted | 87.7 | 26.7 | 24.3 | 8 | 4.3 | 4.3 | 0.26 | 0.29 | 0.23 |
| | Netted | 28.7 | 17 | 14.7 | 4.3 | 4 | 3.3 | 0.21 | 0.18 | 0.15 |
| 2022 | No BESS | 349.3 | 134 | 89 | 38.3 | 19.3 | 13 | 2.02 | 1.35 | 0.92 |
| | Non-netted | 212.3 | 111 | 74 | 22 | 17.7 | 14 | 1.29 | 1.13 | 0.74 |
| | Netted | 111 | 63 | 39.3 | 21.3 | 13.7 | 9.7 | 0.84 | 0.65 | 0.42 |
| 2023 | No BESS | 550 | 273.7 | 154 | 51.3 | 38.3 | 26.7 | 3.47 | 2.67 | 1.44 |
| | Non-netted | 455.7 | 209.3 | 108.3 | 33.7 | 38 | 20.3 | 2.55 | 2.00 | 1.04 |
| | Netted | 245 | 125.7 | 58.3 | 33.7 | 26.3 | 13.3 | 1.82 | 1.25 | 0.60 |

1) Number of hours with any curtailment.

Sources: Aurora Energy Research

# Aurora forecasts total annual load to hit to 620TWh in 2030 with peak load at 109GW, driven by population, economic, and industrial growth

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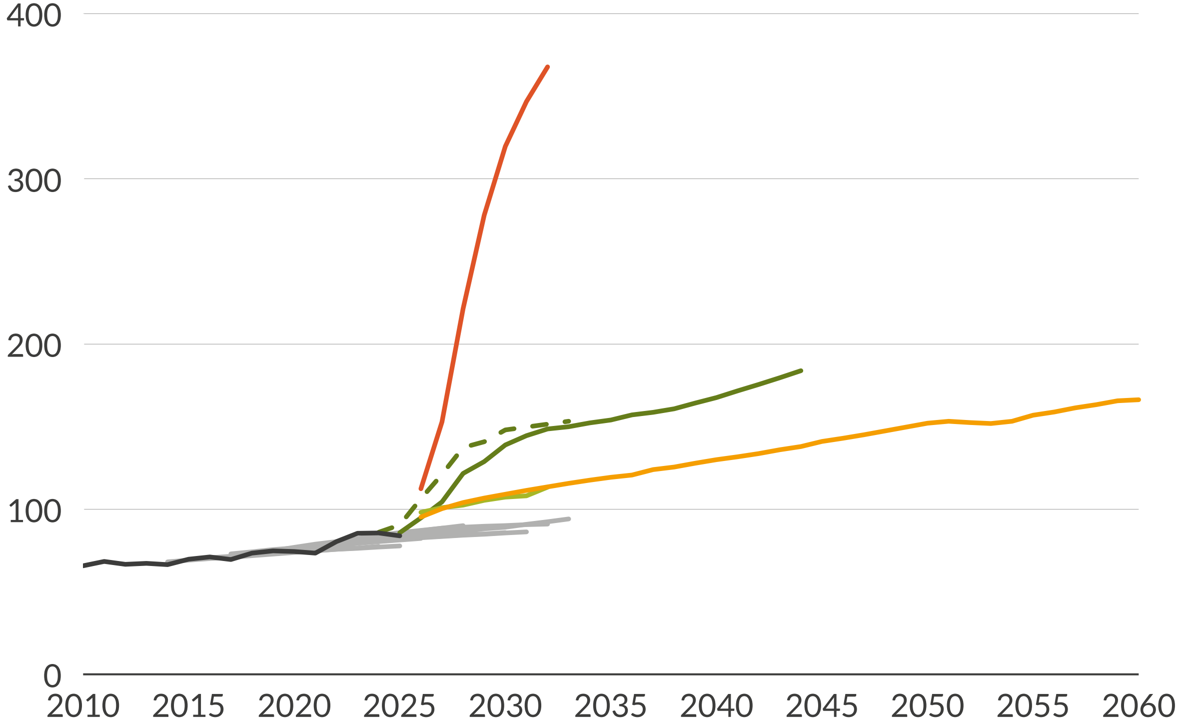
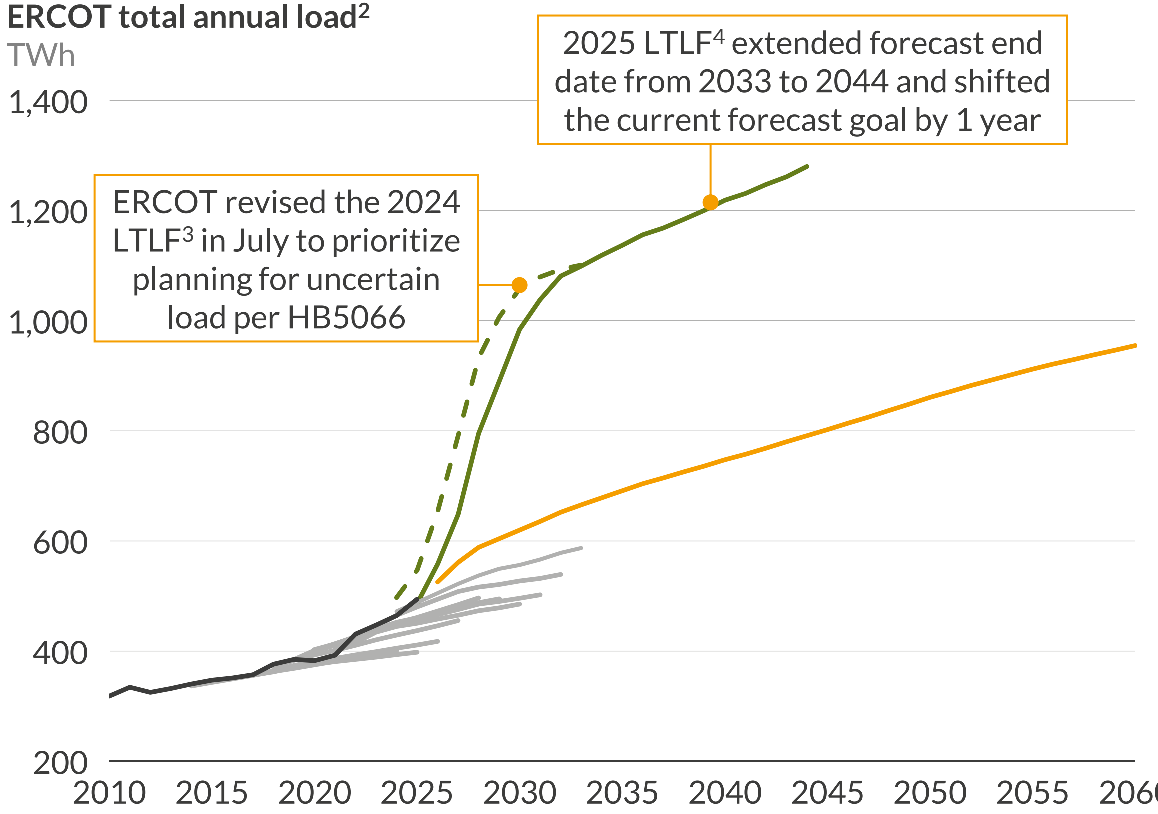
**ERCOT peak load[1]**
GW




**ERCOT total annual load[2]**
TWh




- Aurora assumes a peak load forecast reaching 109GW by 2030, compared to 107GW from ERCOT's 2026 LTLF less queued medium and large loads.
- Future peak and annual demand growth are driven by economic growth, data centers, industrial development, and HVAC.
- Annual energy demand is set to increase alongside peak demand and reaches 620TWh by 2030, compared to 984TWh in ERCOT's 2025 LTLF.
- Beyond 2030, demand growth is driven by population, industrial and data center growth, and transport electrification, offsetting efficiency gains.

Historical
Revised ERCOT 2024 LTLF[3]
Aurora Central
2026 LTLF - Forecast + Medium + Large loads[5]
ERCOT 2025 LTLF[4]
Previous ERCOT forecasts
2026 LTLF - Forecast[5]

1) Summer peak demand. 2) ERCOT 2026 total annual load forecast not yet released. 3) Revised 2024 Long-Term Load Forecast, released July 2024. 4) 2025 Long-Term Load Forecast, released April 2025. 5) ERCOT 2026 LTLF displayed both with and without inclusion of all medium and large loads in the interconnection queue.

Sources: Aurora Energy Research, ERCOT

# Aurora forecasts that data centers in ERCOT will consume 74TWh of power by 2030

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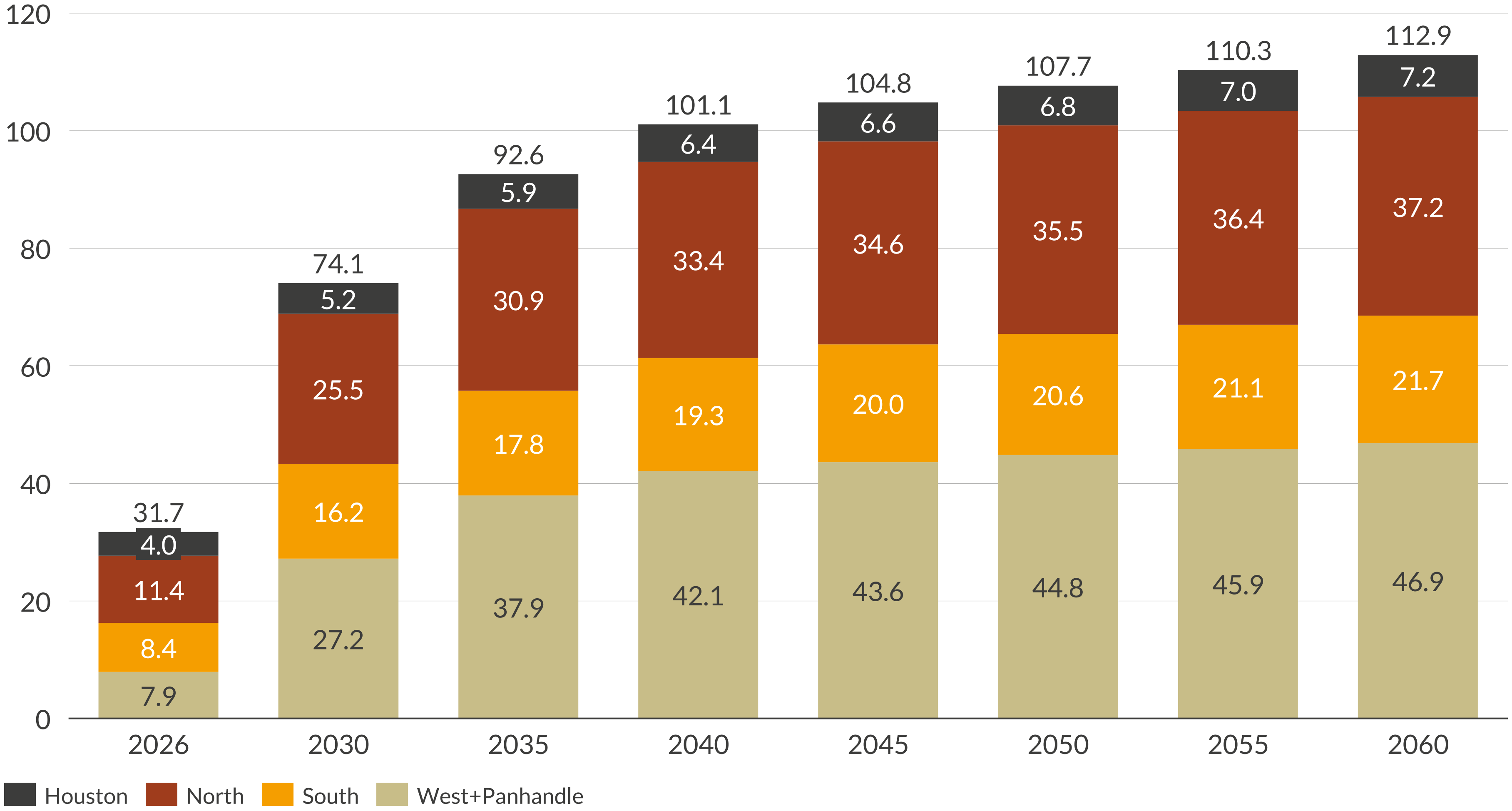
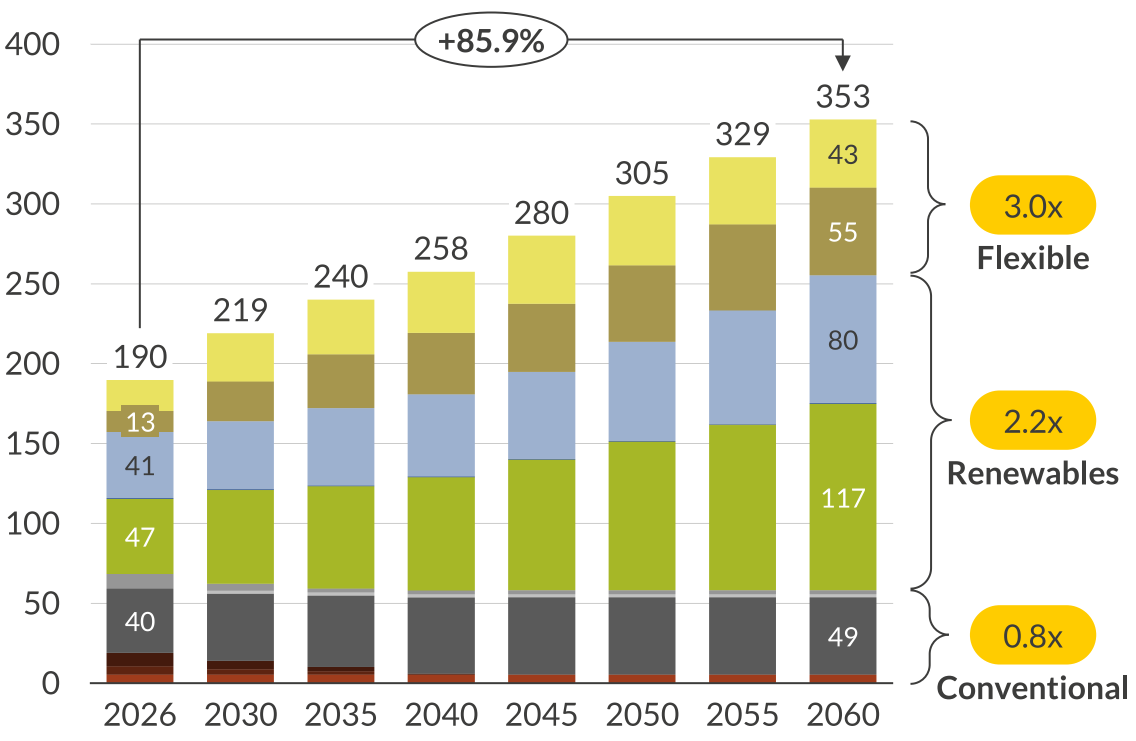
**ERCOT, data-center electricity consumption by region**
TWh

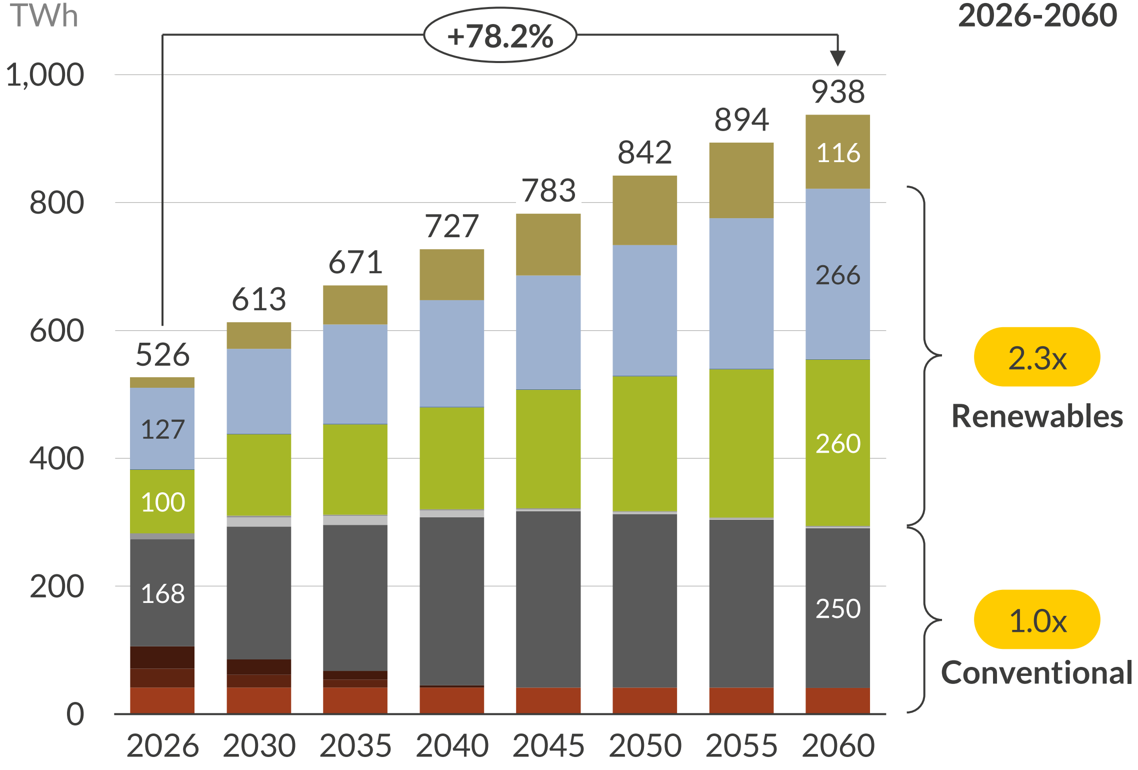



- Despite their greater capacities, new hyperscale data centers are more efficient than other facilities, reducing their energy-consumption footprint relative to their size.
- Within ERCOT, most new builds are concentrated in the West and North regions – driven by low-cost renewable energy and land availability in West, and proximity to existing infrastructure and demand clusters in the Dallas-Fort Worth metroplex in the North.
- While data center growth may post regional reliability challenges, material uncertainty remains around how much load will ultimately come online, given transmission constraints, generation buildout timelines, evolving market conditions, and increased scrutiny through processes like Batch 0.

Sources: Aurora Energy Research, Baxtel

# Renewable capacity reaches 197GW in 2060; batteries grow to 43GW; conventional thermal capacity declines to 58GW




- Installed capacity increases by 86% across the horizon, driven by the growth of renewables, peaking, and battery capacities.
- Conventional capacity declines by 10.3GW from 2026 to 2060 as coal, lignite and steam gas turbine capacity retires with no new build replacement.
- In line with capacity increases, renewables generation increases by 131% between 2026 and 2060.
- Peaking capacity will increase to 55GW in 2060 but run relatively few hours. Peaking production increases 7.4x from 2026 to 2060.

Nuclear | Lignite | Coal | Gas CCGT | Gas CCS | Other thermal | Solar | Other renewables[1] | Hydro | Onshore wind | Gas / oil peaker[2] | Battery storage

1) Other renewables includes biomass. 2) Gas / oil peaker includes OCGT and reciprocating engines.

Sources: Aurora Energy Research

# Unique, proprietary, and integrated in-house modeling capabilities underpin Aurora's superior analysis

AURORA

**5 Integrated Models**

- Global Commodities (AER-GLO)
- Hydrogen (AER-HY)
- Gas (AER-GAS)
- Power markets (AER-ES)
- Nodal/network model (AER-EN)

## INPUTS

- Technology
- Policy
- Demand
- Commodity prices[1]
- Weather patterns

## Dispatch model

- ½ hourly or hourly
- Iterative modeling
- Dynamic dispatch of plant
- Endogenous interconnector flows

**Continuous iteration until an equilibrium is reached**

## Investment decisions module

- Capacity market modeling
- Capacity build / exit / mothballing
- IRR / NPV driven
- Detailed technology assessments

## OUTPUTS

- Capacity mix
- Generation mix
- Wholesale & imbalance prices
- Capacity market prices
- Profit / Loss and NPV
- Electric vehicle charging

## ADDITIONAL INPUTS

- Network snapshot - existing & future
- Nodal load map
- Nodal generation map

## OUTPUTS

- Power flows & losses
- Nodal prices / loss factors

**Up to 70**
specifications modeled for each plant

**c. 85k**
investment hours on modeling capabilities

**~15k**
model runs per week

**100+**
strength of modeling team globally

**Quarterly updates**
through subscription research

1) Gas, coal, oil and carbon prices fundamentally modeled in-house with fully integrated commodities and gas market model

Sources: Aurora Energy Research

# Constraints result in imperfect dispatch; nodal models calculate marginal line congestion costs and allocate to nodal MCC via shift factors

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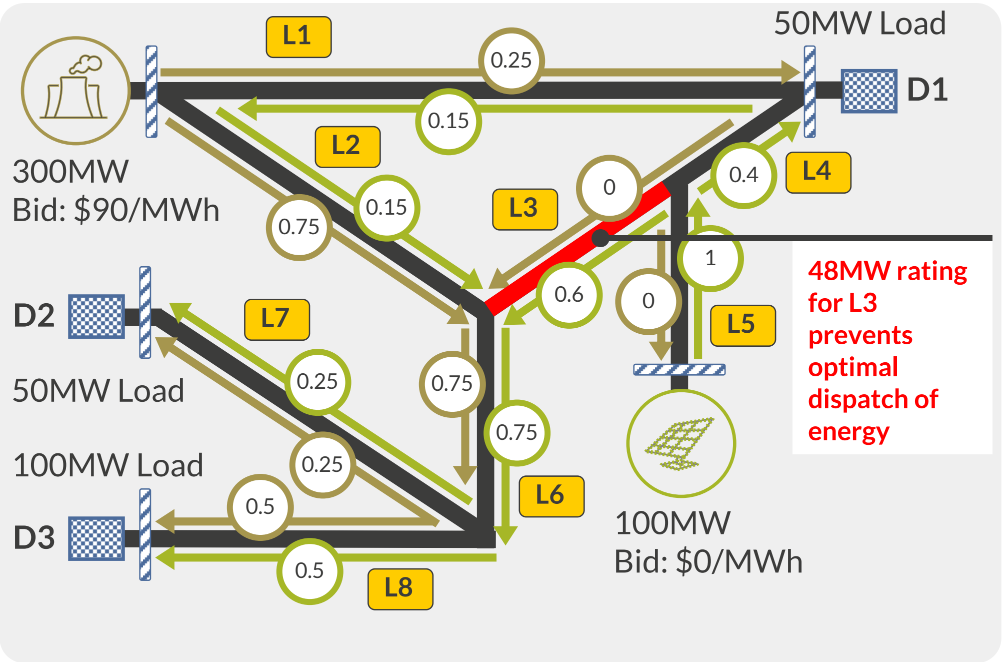


| | *Scenario* 1: No constraints | | *Scenario* 2: 48MW limit on L3 | |
|---|---|---|---|---|
| Plant | | | | |
| Bid | 100MW @ $0/MWh | 300MW @ $90/MWh | 100MW @ $0/MWh | 300MW @ $90/MWh |
| Dispatch | 100MW | 100MW | 80MW | 120MW |
| Solve MCE | $90/MWh | $90/MWh | $90/MWh | $90/MWh |
| Solve MCC[1] | Solve for line shadow price 1 | | Solve for line shadow price 2 | |
| | $-(0.6 \times \mathbf{0})$ | $-(0 \times \mathbf{0})$ | $-(0.6 \times \mathbf{150})$ | $-(0 \times \mathbf{150})$ |
| | $0/MWh | $0/MWh | $-90/MWh | $0/MWh |
| Solve LMP | $90/MWh | $90/MWh | $0/MWh | $90/MWh |

**Solve for line shadow price**

For every constraining line:

1. Increase the line capacity by 1MW
2. Redispatch
3. How much money did you save the system?
   This is the line **shadow price**

**1**

1. Increase any line rating
2. Does not affect dispatch
3. Saves the system **$0**

**2**

1. Increasing L3 1MW allows:
2. The solar plant to turn up 1.67MW
   The thermal plant to turn down 1.67MW
3. Saves the system: **$150**

1) MCC for a specific node is calculated as the sum of line congestion rents multiplied by that nodes shift factors through those lines.

Sources: Aurora Energy Research

# Details and disclaimer

**Publication**
Curtailment Mitigation for PCLR's: Modeling the Effects of Front-of-Meter Netting

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