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Item 13: Far West Load Growth and Transmission Timing Issues

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Board of Directors Meeting

February 9-10, 2026

Purpose

This presentation provides an overview of a growing operational challenge serving demand in Far West Texas that may grow faster than the planned transmission upgrades will be completed over the near term.

For Information Only

This presentation is intended to highlight the near-term Far West Texas load growth issue and some potential impacts and mitigation activities. No action is requested; for discussion only.

Key Takeaways

- While significant new transmission projects are coming to the Far West area, the Load growth in the area may occur faster that the incremental import capacity is added.
- Even if crypto miners reduce output due to high prices, with continued load growth, there is a risk of local loadshed being needed in the area during low wind conditions at night, especially during transmission and thermal resource outages.

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Far West Texas Area

- This Far West area contains wind, solar, ESR, and thermal Resources*.
- On the Load side, it includes oil/gas load, crypto and non-price-sensitive data centers, as well as residential and commercial load.

When wind and solar generation is available in the Far West area, the combination of these Resources plus the power that can be reliably imported is sufficient to serve the current Load in the area.

* Thermal Gens in area are: Ector County (ECEC) 376 MW, Falcon (FLCNS) 140 MW, Odessa Ector (OECCS) 1,280 WM, Permian (PB2SES) 475 MW, Quail Switch (QALSW) 556 MW. Total of 2,827 MW.

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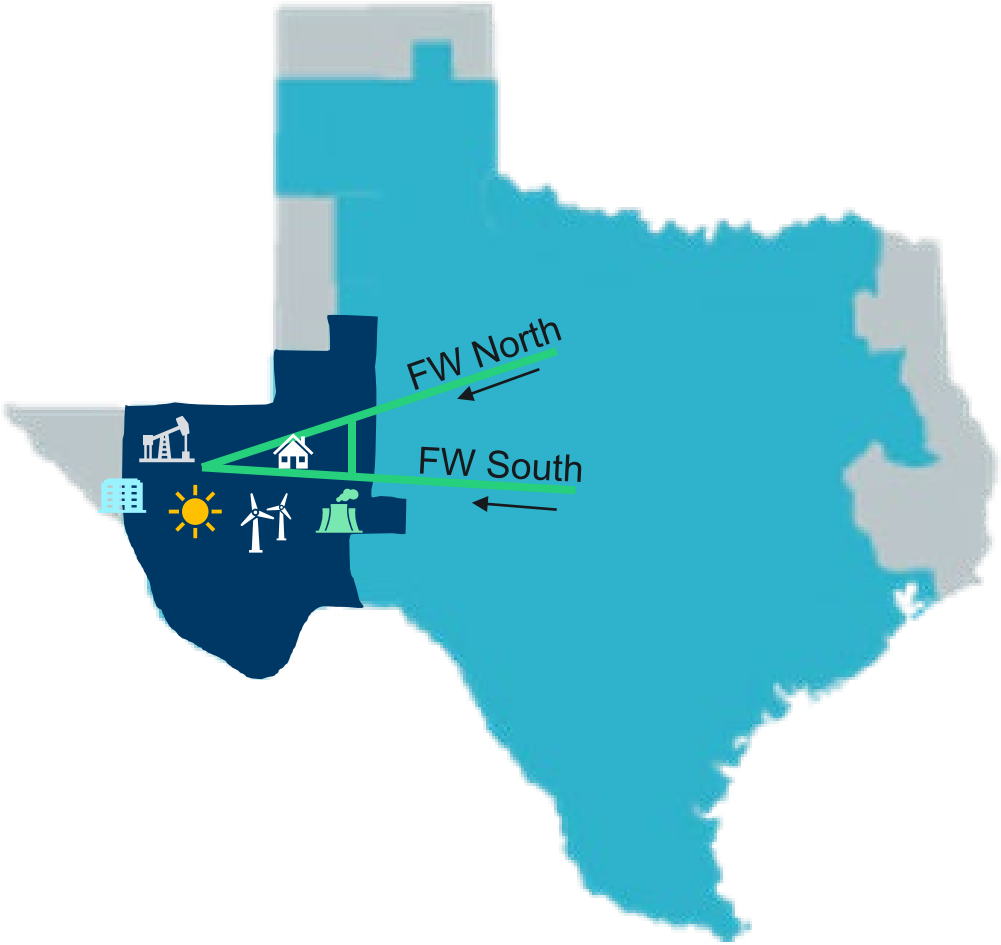
Far West Import Constraints



- During extended low wind conditions at night, the imports to the Load in the area, offset by the flows from the remaining Resources, may overload the thermal capacity of individual transmission lines.
- As the Load in the area continues to grow, *or even at current Load levels during transmission or dispatchable Resource outages*, these exceedances may rise to levels that would risk an outage across the entire Far West area if a contingency were to occur.
- ERCOT is monitoring two import constraints whose limits must be treated as Interconnection Reliability Operating Limits (IROLs) requiring action up to pre-contingency loadshed to prevent them from being exceeded and prevent the risk of widespread, uncontrolled outages.

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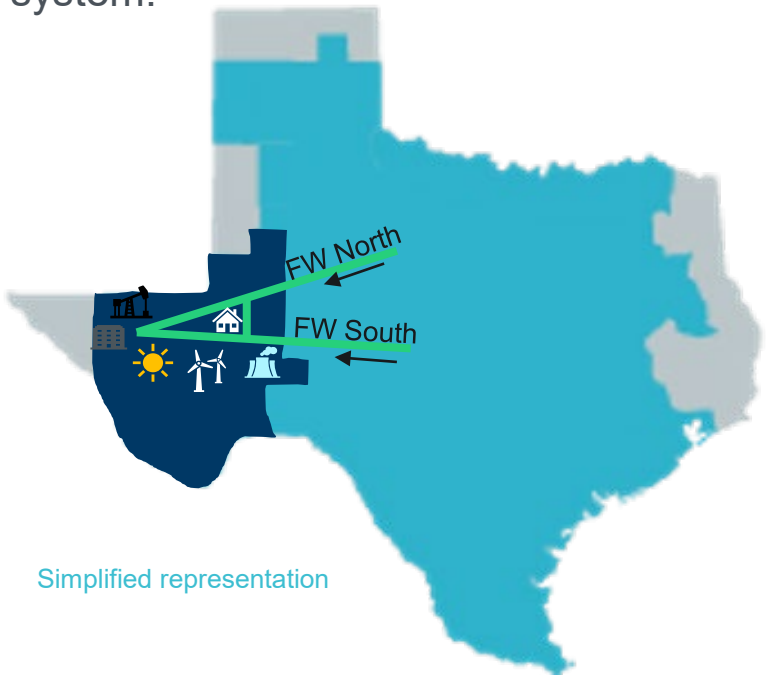
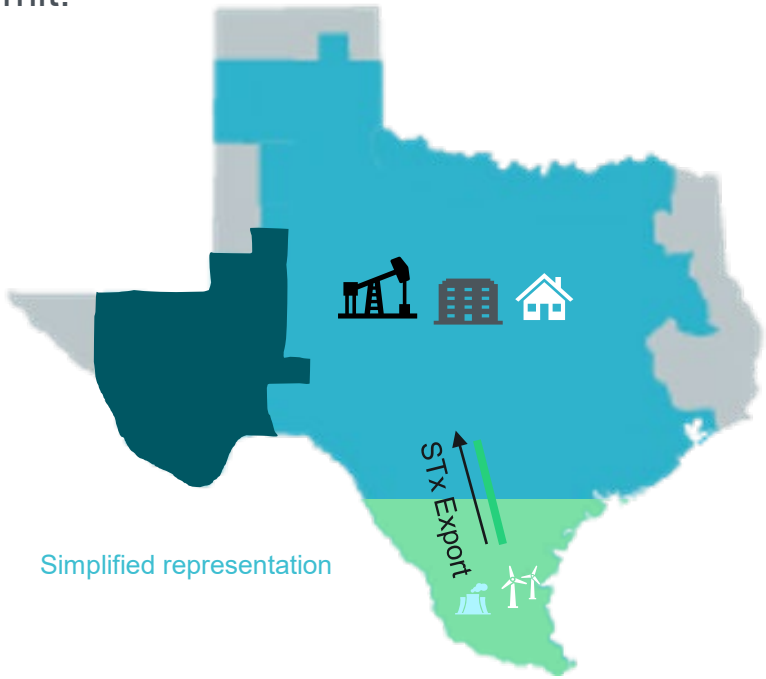
Difference between the South Texas Export and Far West Import

Far West Import constraints will overload when the local Far West area does not have sufficient generation to serve the load in that area – even if there is sufficient capacity elsewhere on the system.



Simplified representation

South Texas Export constraint will only overload if the system as a whole does not have sufficient capacity to serve the system load without using capacity south of the constraint that would violate the limit.



Simplified representation

Both of these constraints are due to risk of cascading thermal overloads – a different phenomenon than most other Generic Transmission Constraints (GTCs) that are based on dynamic stability issues.

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Near-term Upgrades

Transmission Additions

June 2026: Bearkat – North McCamey – Sand Lake 345 kV Transmission Line Addition (Delaware Basin Stage 2).

Dec 2026: Delaware Basin Stage 3

Dec 2027: Delaware Basin Stage 4

Dec 2029: Delaware Basin Stage 5

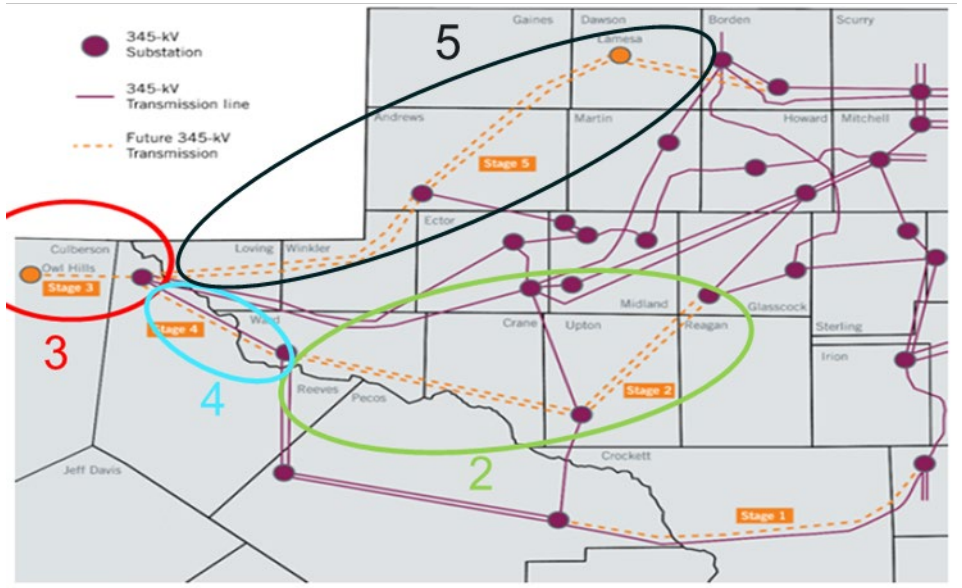
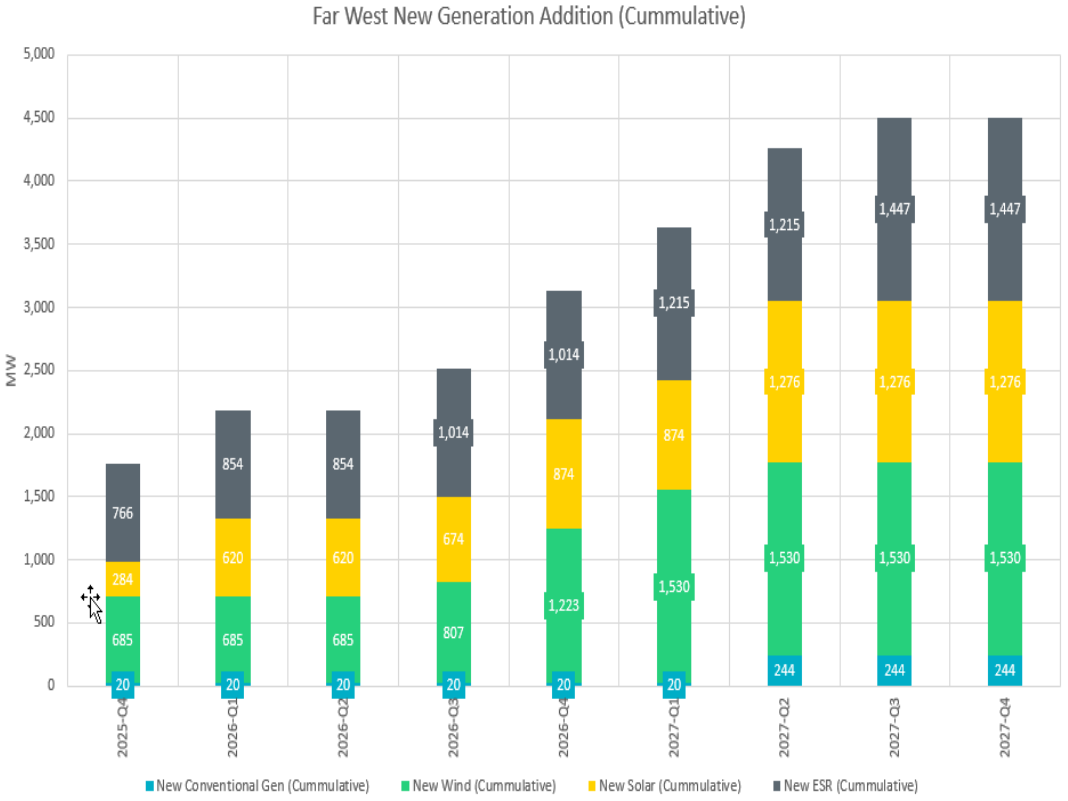


Figure 1.2: 345-kV Transmission System Map of Study Area with Stage 1 – Stage 5 Upgrades

Resource Additions

Under the critical conditions (nighttime, extended low wind), only the additional 224MW unit in Q2 2027 will significantly increase load serving capability in the Far West area.



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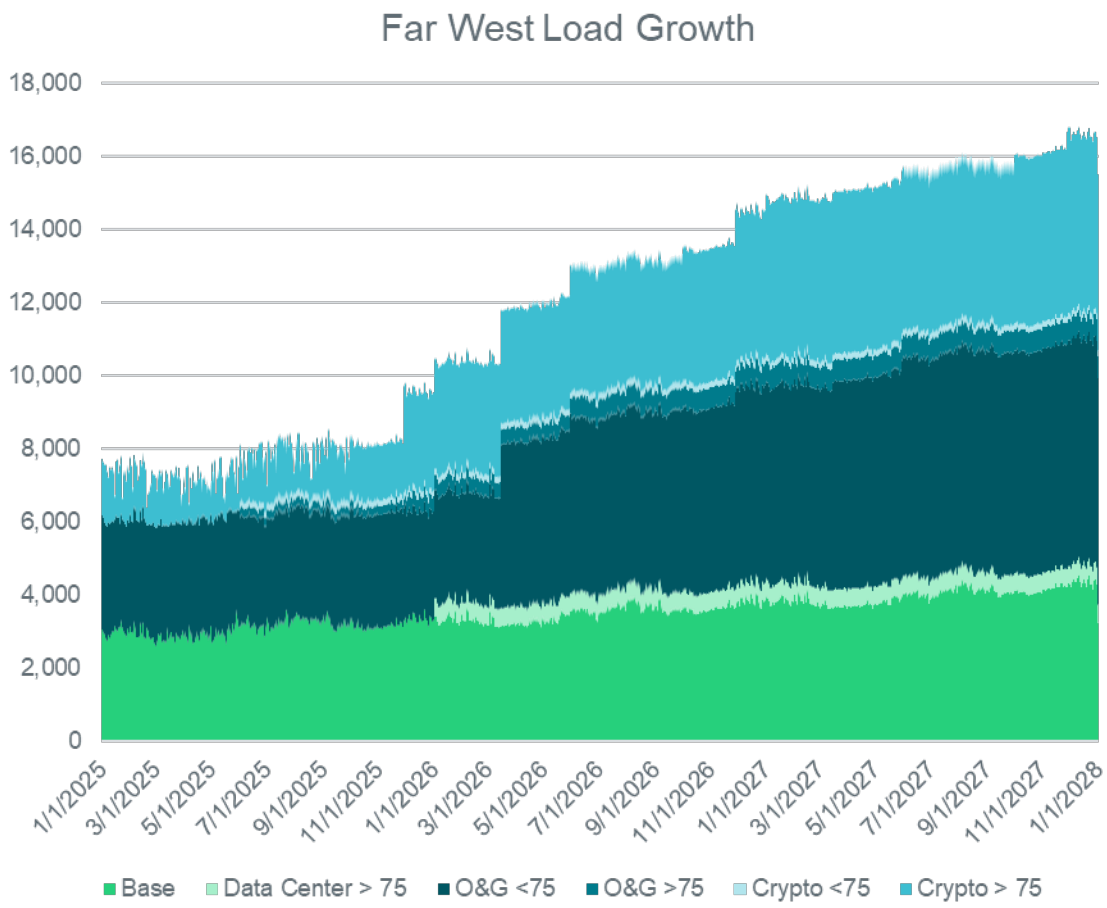
Far West Load Growth



- Load in Far West continues to grow*, with significant increases at beginning of 2026 and in spring 2026 (although not as abrupt as shown on the graph).
- Other than Crypto, most of this load is less than 75 MW per site.
- Timing of load growth is dependent on timing of development by end-users.

* This forecast is created using actual load values from the >25 large load list for the dates 01/01/2025-09/30/2025. Starting in October the Crypto column contains the crypto forecast used in the LTLF + Contracted Crypto + Officer Letter Crypto from the ERCOT Adjusted forecast. The Oil and Gas column contains a sum of existing load and the contracts and officer letters for O&G. The Base column contains economic growth, electric-vehicle load, rooftop solar, and industrial load (Crypto and Oil and Gas load has been deconstituted)

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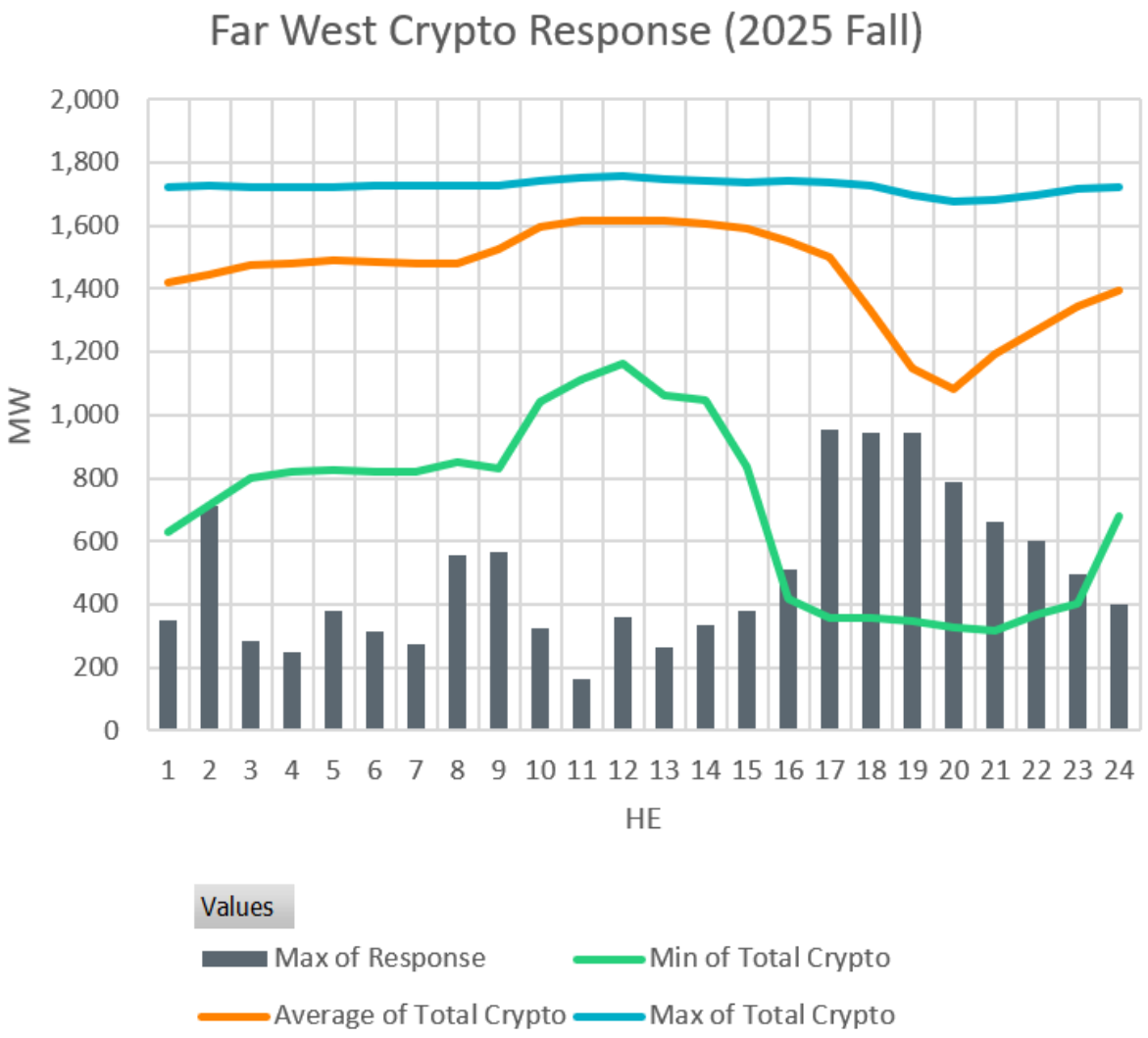
Crypto Response



- Load growth values on previous slide assume crypto continues to consume.
- Have seen significant response in the past that would reduce the load in Far West during high-price conditions.
- Since a significant portion of the load growth is reported as crypto, it may also respond, reducing the risk.

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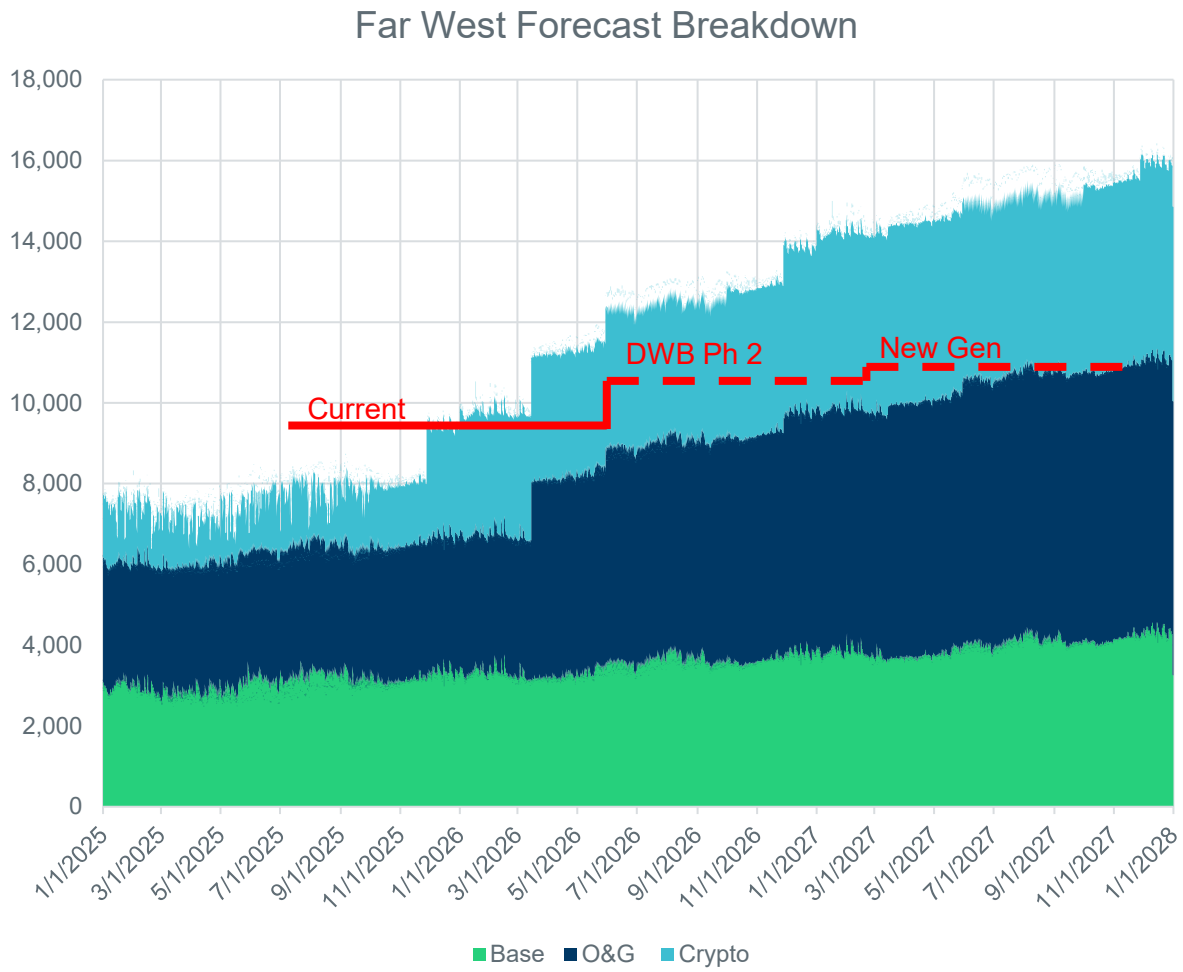
Increases in Import Capacity



- The import limits (and, therefore, load serving capability) into this area vary widely depending on outages, wind and solar output, and load distribution.
- Based on critical conditions* with no outages, the current max reliable load serving capability in Far West during low wind/solar conditions was calculated as 9,500 MW.
  - *This value is significantly higher when solar and wind generation is available and will be lower during outages which will be necessary for required transmission upgrades and maintenance.*
- The timing and incremental load serving capability of the upcoming Delaware Basin (DWB) transmission projects and resources may not match the load growth.
  - Estimated incremental benefit DWB Ph 2 is ~1000MW under similar conditions. Ph 3 and 4 are not import projects.
  - New thermal resources in the area will increase the limit commensurate with their size.
- The next transmission projects having any significant impact after DWB Stage 2 are DWB Ph 5 at end of 2029, and then the Permian Basin 765 kV.

* With no relevant thermal unit or transmission outages, solar at 0, wind=1000 MW, ESRs at 0 (fully discharged) but providing voltage support, thermal resources at full output. Load serving capability would be higher with more resource output in the area and lower during outages

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Potential Mitigation Activities

- Request for updated load projection will be issued soon to transmission companies in the area
- Nighttime Dynamic Ratings have been implemented on some key lines
  - Less sun irradiance = Higher line ratings
- Coordinate upgrades holistically and allow daytime Outages
  - Outages that reduce import limit may need to be taken during daylight hours (when solar generation is available) and restored overnight – opposite normal restrictions.
  - Work across TOs to coordinate transmission upgrades that provide relief.
- Other Potential Mitigations
  - Consider a Request for Proposal (RFP) for capacity to be submitted end of Q1 or early Q2 2026
  - Consider a Revision Request that requires Cryptos to register as Controllable Load Resources (CLRs)
  - Engage with oil and gas and industrial entities in Far West Texas for additional solutions

Key Takeaway: ERCOT will be working with the transmission companies in the Far West area to update load projections and working with stakeholders on other mitigation activities.