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Item 9.1: System Planning and Weatherization Update

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Vice President, System Planning and Weatherization

Board of Directors Meeting

February 9-10, 2026

- **Purpose**
  Provide an update on recent activity related to planning, modeling, resource adequacy, and weatherization.

- **Question for the Board**
  What topics would the Board like to see further discussed regarding the ERCOT system planning for future transmission and/or resource adequacy to support reliable grid growth?

Key Takeaways

- Winter weatherization inspections are underway. Initial Winter Storm Fern performance was favorable.
- In December 2025, ERCOT Planning completed several key reports:
  - While the Transmission Cost of Service (TCOS) has increased in recent years, the TCOS per MWh when adjusted for inflation has decreased due to increased load growth.
  - The 765-kV transmission infrastructure is the main contributor to the significant decrease in the system-wide congestion rent projected for 2030.
- While increased Network Operations Model work was required in 2025, the implementation of RTC decreased model complexity.

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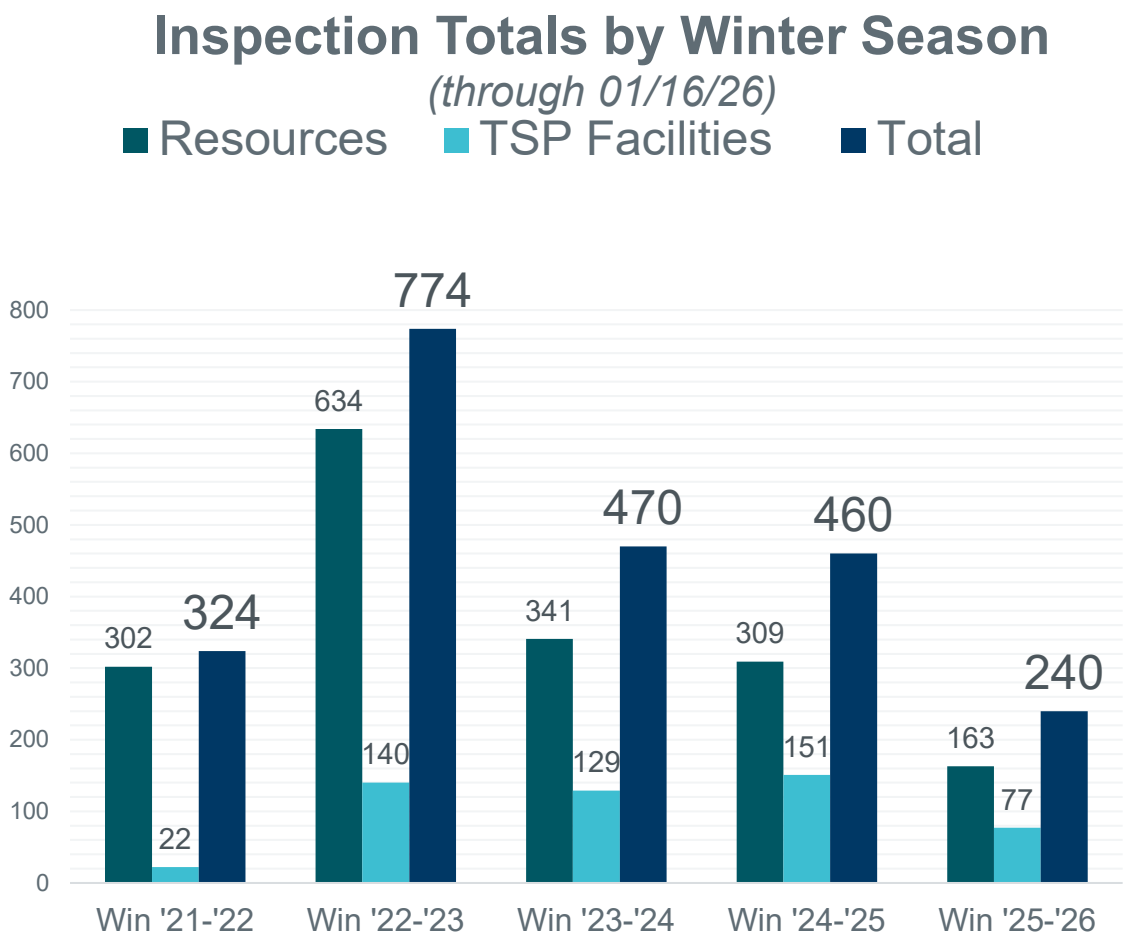
Weatherization Update



- Winter 2025-2026 inspections commenced on December 2, 2025.
- 240 inspections were completed by the second week of January 2026.
- Compliance levels remain high with few compliance deficiencies.
- Initial Winter Storm Fern performance results were favorable.

Key Takeaway:

ERCOT works with Market Participants to support compliance with the PUC's Weather Emergency Preparedness Rule.

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Winter Storm Fern Actual Temperature Comparison

		Saturday, January 24			Sunday, January 25			Monday, January 26		
Weatherization Zone	**95th Percentile Minimum Average 72-hour Wind Chill Requirement (°F)**	**Lowest Temp (°F)**	**Lowest Wind Chill (°F)**	Time of Lowest Temp & Wind Chill	**Lowest Temp (°F)**	**Lowest Wind Chill (°F)**	Time of Lowest Temp & Wind Chill	**Lowest Temp (°F)**	**Lowest Wind Chill (°F)**	Time of Lowest Temp & Wind Chill
Panhandle - Amarillo	**-17.6**	-1.0°	**-21.0°**	7:00	4.00	**-15.0°**	1:00	5.0°	**-5.0°**	8:00
North - Childress	**-5.0**	5.0°	**-13.5°**	23:00	5.0°	**-14.5°**	1:00	10.0°	**3.0°**	8:00
North Central - Dallas Ft. Worth	**-0.5**	16.0°	**0.63°**	23:00	13.0°	**-5.0°**	6:00	15.0°	**0.3°**	5:00
West - Abilene	**0.3**	11.0°	**-6.7°**	17:00	8.0°	**-10.9°**	9:00	7.0°	**-2.3°**	6:00
Far West - Midland	**1.3**	14.0°	**-1.5°**	7:00	8.0°	**-3.6°**	5:00	4.0°	**-9.25°**	8:00
East - Tyler	**4.4**	26.0°	**16.2°**	23:00	18.0°	**4.0°**	8:00	17.0°	**6.3°**	5:00
South Central - Austin	**8.4**	25.0°	**11.8°**	20:00	21.0°	**7.0°**	7:00	19.0°	**5.9°**	7:00
Southern - Corpus Christi	**16.3**	34.0°	**22.0°**	22:00	32.0°	**19.7°**	1:00	24.0°	**10.8°**	6:00
Coast - Houston	**18.1**	35.0°	**26.1°**	23:00	24.0°	**9.49°**	22:00	24.0°	**11.3°**	0:00
Valley - Brownsville	**20.0**	45.0°	**38.0**	23:00	36.0°	**27.0°**	22:00	30.0°	**20.2°**	7:00

- Sampling of actual temperatures and wind chill values for major cities in each Weather Zone.
- Some areas experienced values colder (red cells) than the §25.55, Weather Emergency Preparedness Rule.
- Rule requires implementation of weather emergency preparation measures that could reasonably be expected to ensure sustained operations at the weather zone-specific wind chill level (green column).

Key Takeaway: Even with temperatures colder than the preparedness rule requirements, overall performance was favorable with limited weather-related outages.

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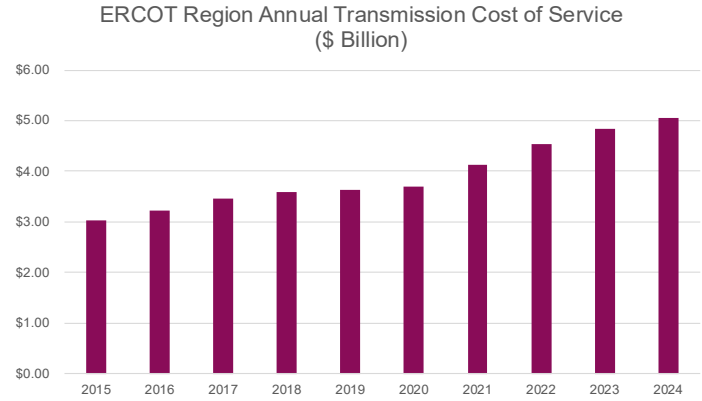
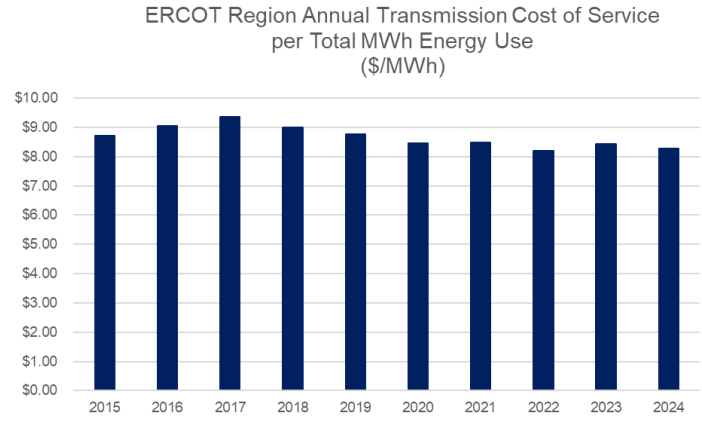
Transmission Investment Trend for ERCOT Region

- As Texas experiences strong economic growth and increasing electricity demand, new transmission infrastructure and system upgrades are needed to reliably serve the projected demand.
- In 2025, ERCOT endorsed approximately $14.0 billion of transmission projects compared to $3.8 billion in 2024.
- Total Transmission Cost of Service (TCOS), which is driven by investments in new infrastructure and system upgrades, has risen in recent years.
- Economic growth also results in an increase in MWh of energy usage.





Key Takeaway: While TCOS has increased for the last 10 years as shown in the top graph, the TCOS per MWh, when adjusted for inflation, has declined slightly as shown in the bottom graph.

1. TCOS values are based on ERCOT's Yearly Wholesale Transmission Service Charges filed with PUCT
2. Total MWh Energy Use values are based on ERCOT's Demand and Energy Report published on the ERCOT website
3. Adjusted using the Consumer Price Index

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2025 Regional Transmission Plan (RTP) Summary

The RTP is a roadmap of future transmission projects needed to serve demand. The 2025 RTP:

- proposed 192 reliability projects, more than any previous RTP.
- identified additional 765-kV equipment to address the growing import need in Central Texas.
- included a "Sunset" analysis of the conditions typically found during 7-8 p.m. Sunset represents the most challenging operating conditions when solar is very low, wind in the West and Far West is low, and wind in the Panhandle is very low.

RTP Year	Total RTP Reliability Projects Proposed	Peak Load Level Studied in RTP (GW)
2016	40	89
2017	60	89
2018	38	85
2019	56	89
2020	50	93
2021	67	92
2022	89	94
2023	173[1]	111
2024	145[2]	152
2025	192[3]	159

[1] With no 765-kV equipment
[2] With 765-kV STEP in year 6 base case
[3] With 765-kV STEP in year 5 and 6 base cases

Key Takeaway: To meet increasing demands and an evolving generation mix, the RTP continues to identify transmission project needs which will be further analyzed as Transmission Service Providers file Regional Planning Group projects.

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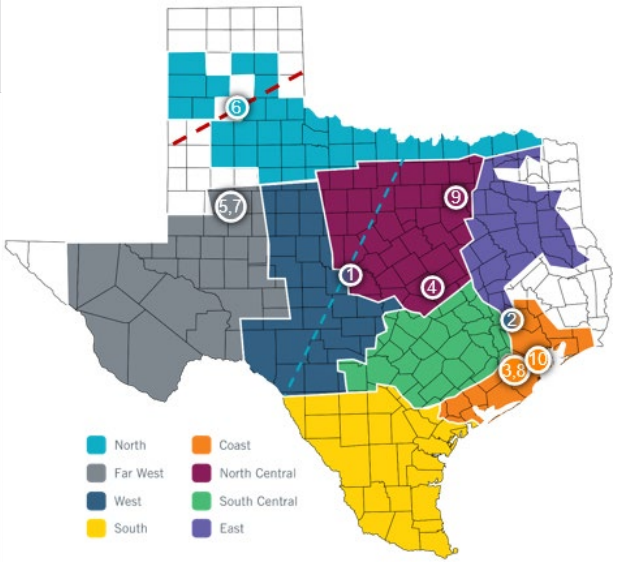
Projected Transmission Constraints

- 2025 RTP economic analysis indicated several major import/export interfaces were still projected to be congested in 2027 and 2030.
- Total congestion rent in the study was projected to be $1.11 billion for 2027 and $851 million for 2030.

Map	Constraint	Congestion Rent*	
		2027	2030
1	West Texas Export Interface	$245M	$209M
2	North - Houston Interface	$48M	$141M
3	Houdini - W A Parish 345-kV Line	$150M	$22M
4	Bell County East Switch - Voss Lake 345-kV Line	$106M	-
5	Holly POI - Wett Long Draw 345-kV Line	$9M	$48M
6	Panhandle Interface	$12M	$45M
7	Farmland - Holly POI 345-kV Line	$35M	$13M
8	Elmato POI - Houdini 345-kV Line	$33M	$14M
9	Buntin Drive - Simpson Stuart 138-kV Line	-	$37M
10	Oasis - Savana POI 345-kV line	$17M	$20M



Location for the top constraints

Key Takeaway: The 765-kV STEP transmission infrastructure is the main contributor to the significant decrease in the system-wide congestion rent projected for 2030.

*Only large loads with a signed Interconnection Agreement were included in the 2027 and 2030 economic analysis. The 765-kV STEP transmission infrastructure was included in the 2030 base case.

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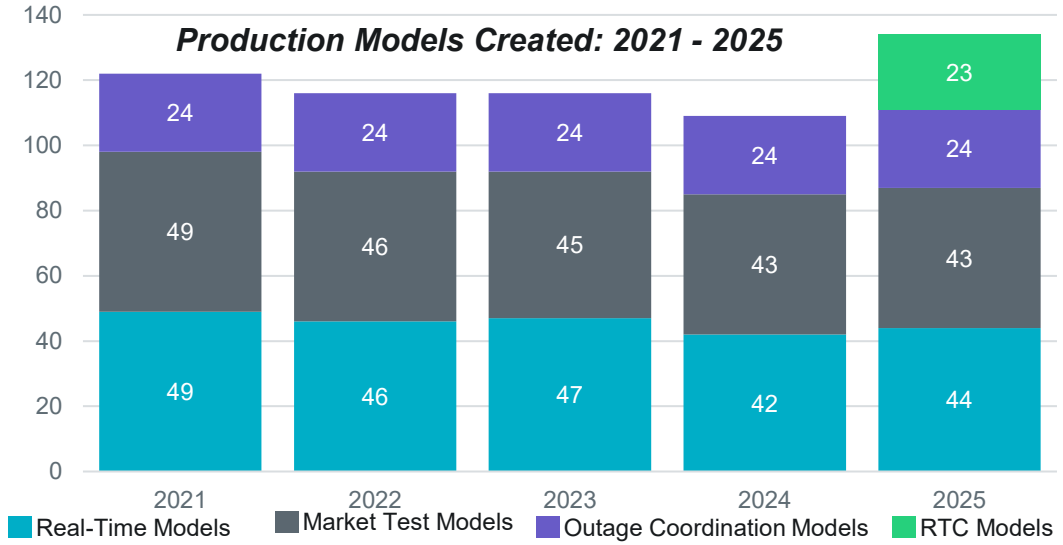
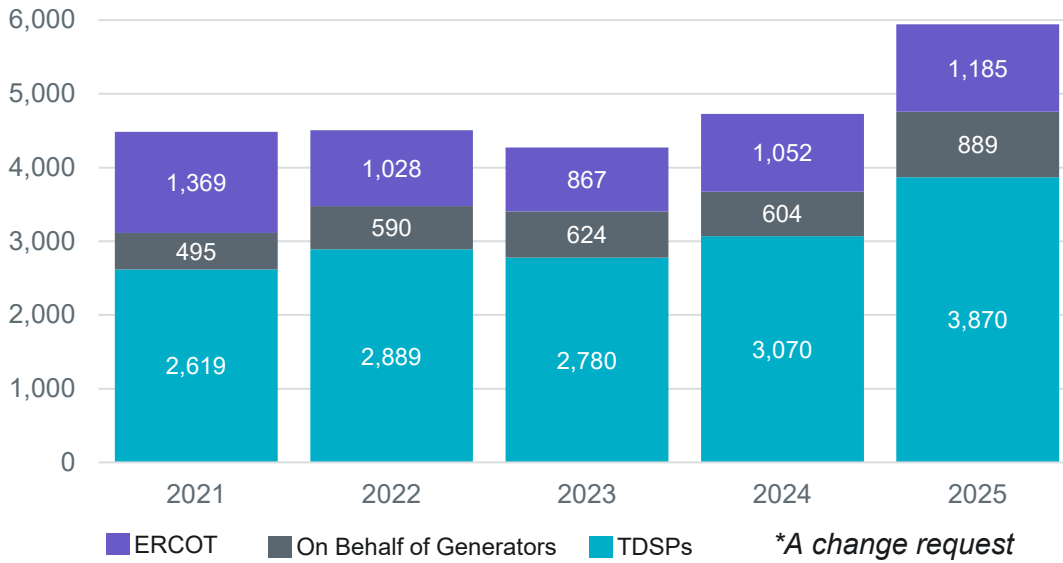
2025 Network Modeling Highlights

ERCOT received and validated nearly 6,000 Change Requests in 2025 which is a 25% increase from 2024 due to additional:

- Bulk TDSP submissions modifying switch types
- Generation submissions related to hot/cold temperature limits and alternate fuel capabilities
- Generation submissions adding RTC telemetry





*A change request consists of one to many model changes.

ERCOT created 23 additional RTC-specific Operations models to facilitate both internal and external testing of RTC systems prior to go-live.

RTC implementation reduced model complexity by:

- Removing ~300 Controllable Load Resources
- Removing a net of 42k telemetry points
- Decreasing the model file size by 7%

Key Takeaway: While increased Network Operations Model work was required in 2025, the implementation of RTC decreased model complexity.

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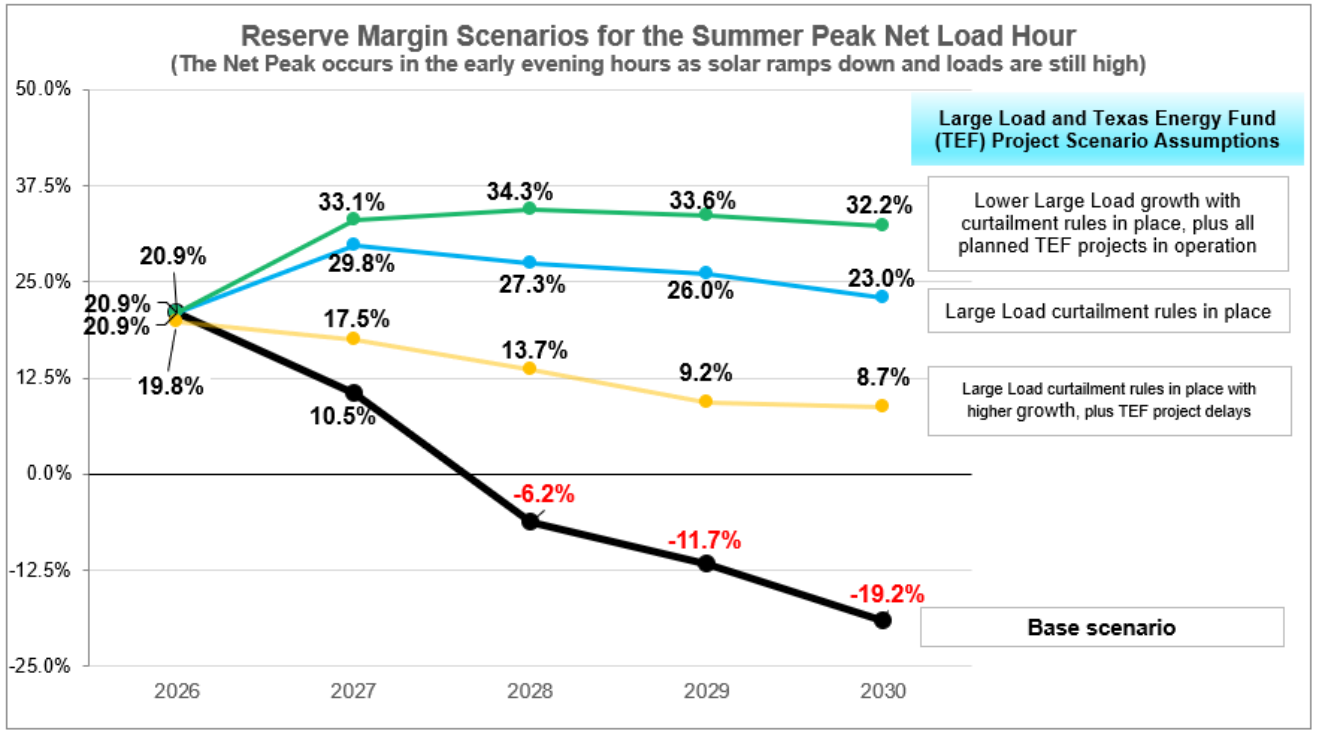
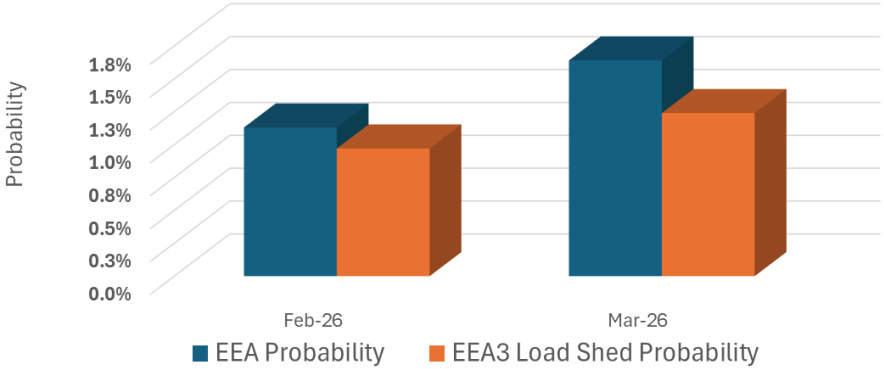
Resource Adequacy Reporting

December 2025 CDR Report



Feb/Mar 2026 Monthly Outlook for Resource Adequacy (MORA)

EEA risk for March 2026 is slightly higher than for February 2026 due to significantly more thermal capacity undergoing planned maintenance; March EEA risk is primarily driven by the possibility of unseasonably low temperatures during the first half of the month



Key Takeaway: Variability in projected large load growth and curtailment capabilities drive a wide range of potential capacity reserve margin scenarios.

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2026 Reliability Assessment Roadmap

Simulation modeling assumptions adoption	**Preliminary model assumptions and CONE update proposal filed**	**January 15 (Completed)**
	Public comments due	March 2
	Recommended assumptions filed	March 23 (ERCOT) April 10 (PUC Staff)
	Open public meetings to consider assumptions	April 17 May 7 (If needed)
ERCOT Assessment	ERCOT completes loading of approved data assumptions	May 15
	ERCOT completes model runs and data post-processing	July 14
	ERCOT completes internal model results review	July 29
	ERCOT files reliability assessment, including market design options if needed	**August 13**
Independent Market Monitor / Stakeholder Review	PUC staff filles assessment questions	August 27
	IMM evaluation and stakeholder comments due	September 28
Commission Review	PUC staff-led workshop	Early October
	PUC staff files final recommendations	Early November
	PUC open meeting to consider staff's recommendations	November
	2nd PUC open meeting to consider staff's recommendations if needed	December

- On 12/18/25, the PUC approved a road map for the first reliability standard assessment.
- On 1/25/26, ERCOT filed a proposed list of reliability modeling assumptions, along with a proposal for updating the July 2024 PUC-approved Cost of New Entry (CONE) approved for planning studies.
- Pending policy decisions impacting the roadmap and assessment outcome include:
  - Consideration of using a new load forecast based on upcoming large load forecasting compliance plan in lieu of the 2025 load forecast
  - Adoption of a new CONE for assessing the system cost of market design options if needed for reliability standard compliance

Key Takeaway: The assessment is expected to take a year to complete due its complexity and need for extensive stakeholder participation.