

S & P G L O B A L N O D A L T R A D E R C O N F E R E N C E 2 0 2 5

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GET REAL: CAN POLICY APPROACHES CLARIFY LOAD FORECASTS?

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SUMMARY



- AI's capital spending is extraordinary, but the electricity demand growth projections around the sector are unbelievable
- The consequences of an unbelievable load forecast are not good!
 - Less confidence and possible *underinvestment* in power generation that relies on market forwards
 - Possible *overspending* on regulated-grid investments because of moral hazard of utilities who don't have to wear the risk of rate-base spending
 - A 'crisis' for politicians who are not necessarily known to make sound policy under this kind of pressure
- Realizing the United States needs to compete and win in AI, what kind of regulatory policies can be employed to clarify this moment and “get real” about this possible AI bubble?
- But first...let's review the projections

ERCOT LOAD GROWTH PROJECTIONS



ERCOT All-Time Peak Demand

85,508 MW

(Aug 10, 2023)

ERCOT's 2025 Bottom-Up Load Forecast for 2027

138,000 MW

(a 61% increase in 2 years)

ERCOT's "More Reasonable" Adjusted Load Forecast for 2027

103,725 MW

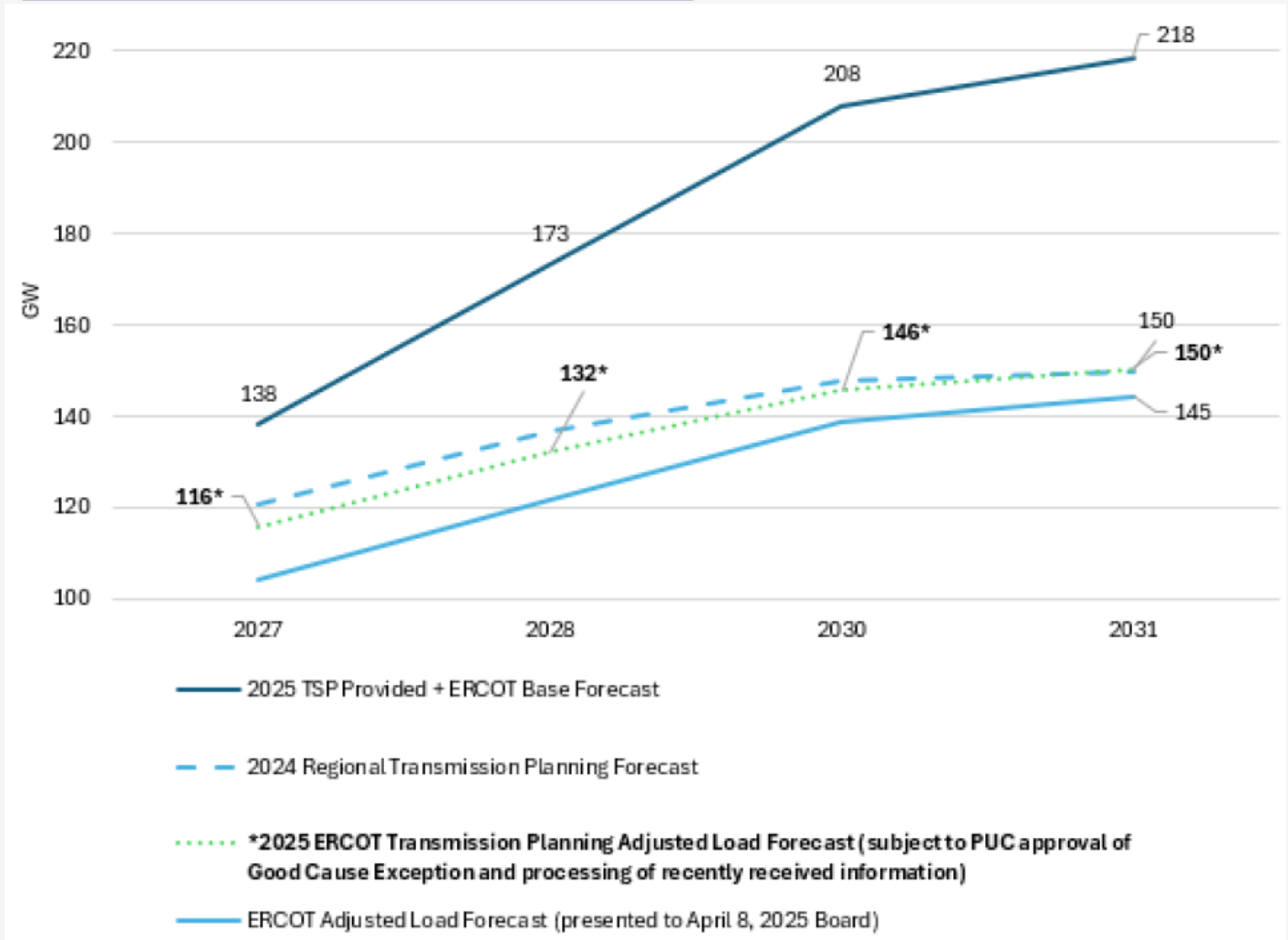
(a 23% increase in 2 years)

ERCOT's "More Reasonable" Adjusted Load Forecast for 2031

145,000 MW

(a CAGR of 6.8% per year)

ERCOT Load Forecasts, 2024-2025

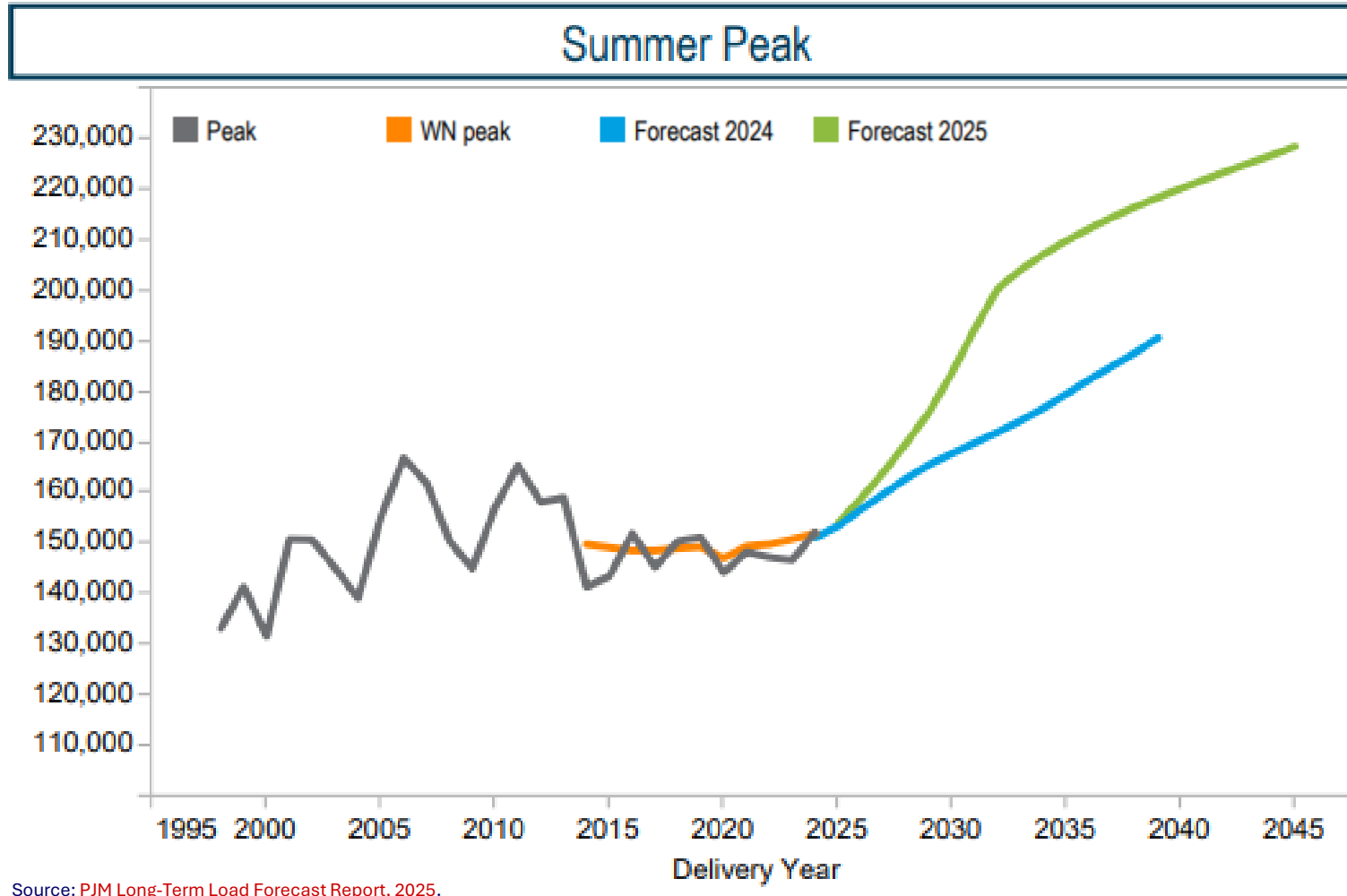


Source: [ERCOT's Revisions to Adjusted Load Forecasts and Amended Draft Proposed Order](#).

PJM LOAD GROWTH PROJECTIONS



PJM Load Forecast from January 2025



PJM's All-Time Peak Demand

165,563 MW

(Aug 2, 2006)

PJM's 2025 Peak Demand

160,526 MW

(Jun 23, 2025)

PJM's 2025 Load Forecast for 2032

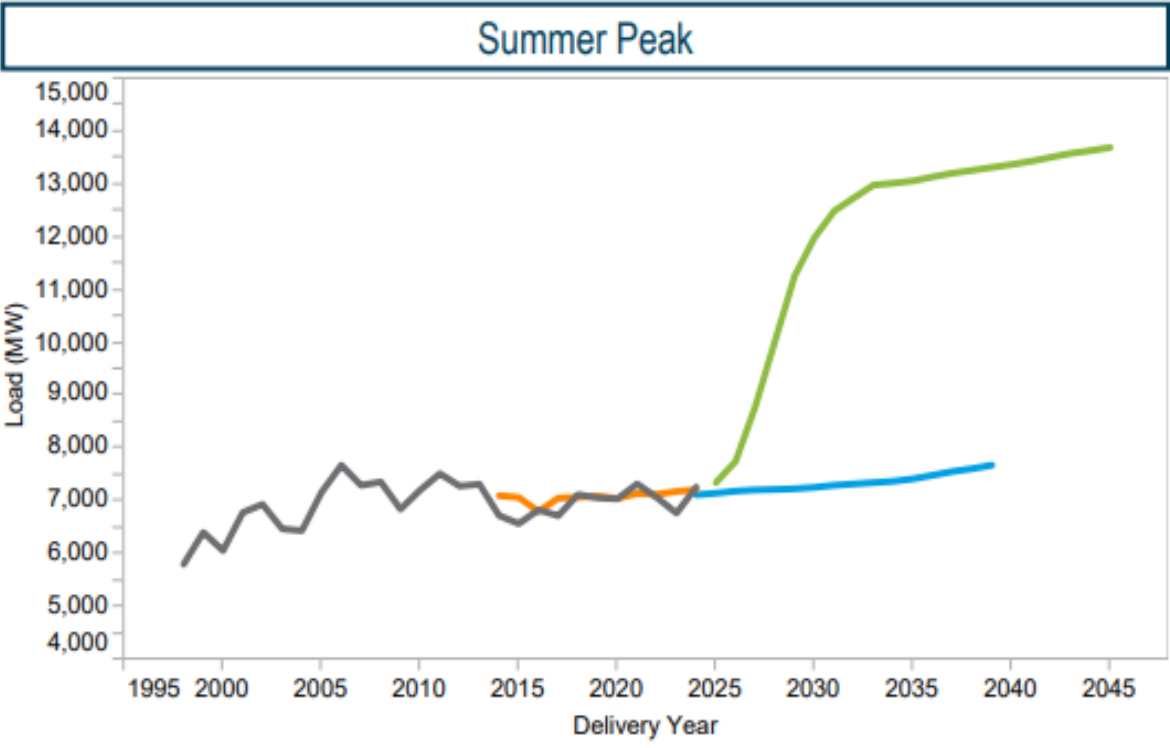
197,302 MW

(a CAGR of 3.0% per year)

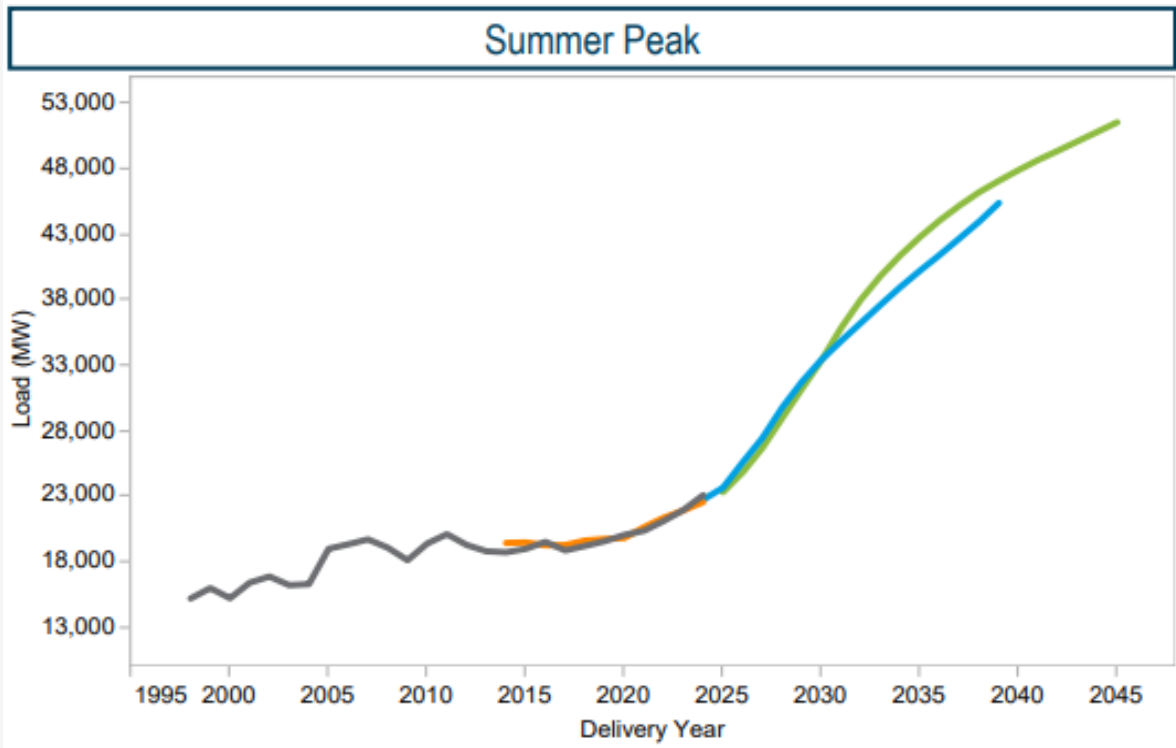
PJM'S FORECAST DRIVEN BY AGGRESSIVE AND MORE GUARDED UTILITY TERRITORY FORECASTS



PPL Electric Utilities



Dominion

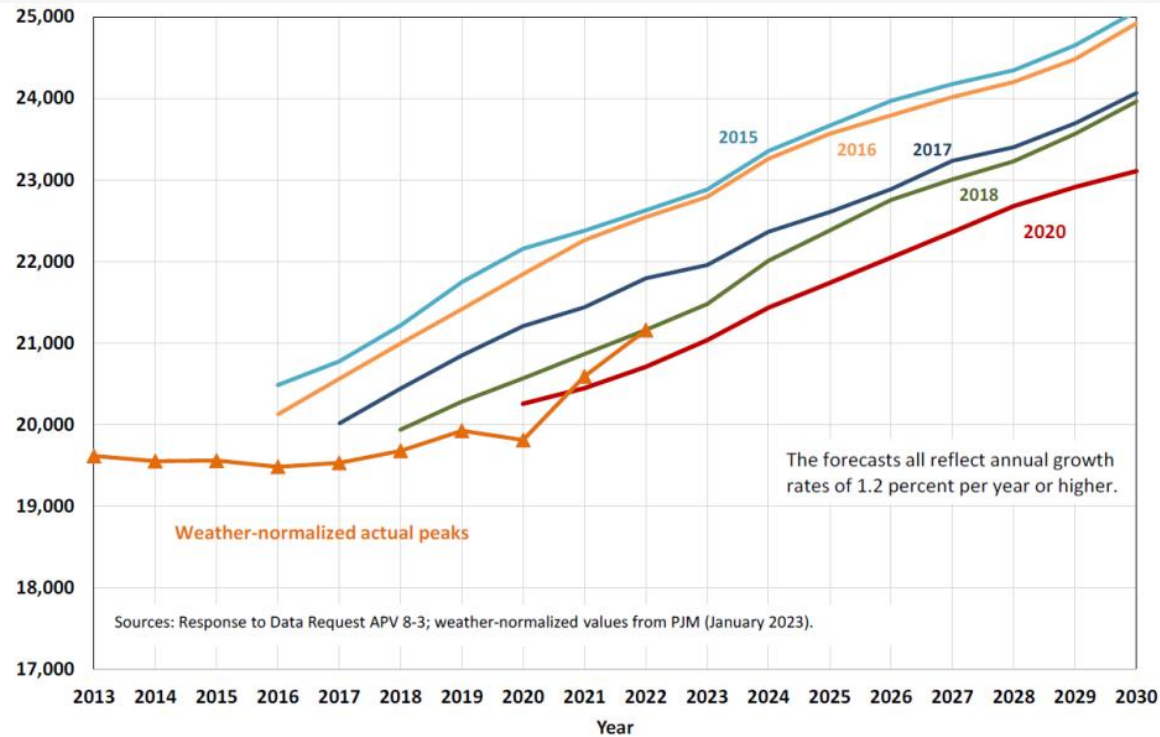


■ Peak ■ WN peak ■ Forecast 2024 ■ Forecast 2025

Source: [PJM Long-Term Load Forecast Report, 2025](#).

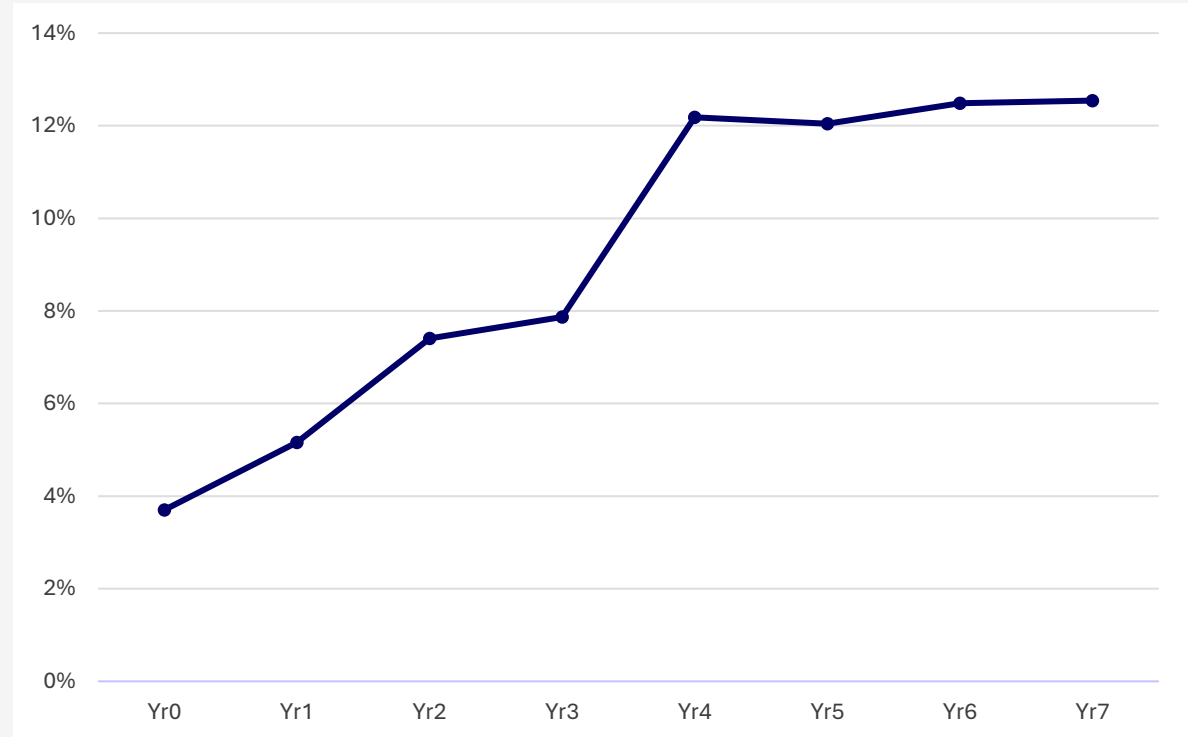
THIS HAS ALL BEEN WRONG BEFORE

Dominion's Forecasts of Dominion Zone Summer Peak Load Growth from Past IRPs



Source: Application/Petition of Virginia Elec. & Power Co. In re: Virginia Elec. & Power Co. Integrated Resource Plan Filing Pursuant to Va. Code § 56-597 et seq., Case No. PUR-2023-00066, Direct Testimony of James F. Wilson on Behalf of Appalachian Voices at 16 (Aug. 8, 2023).

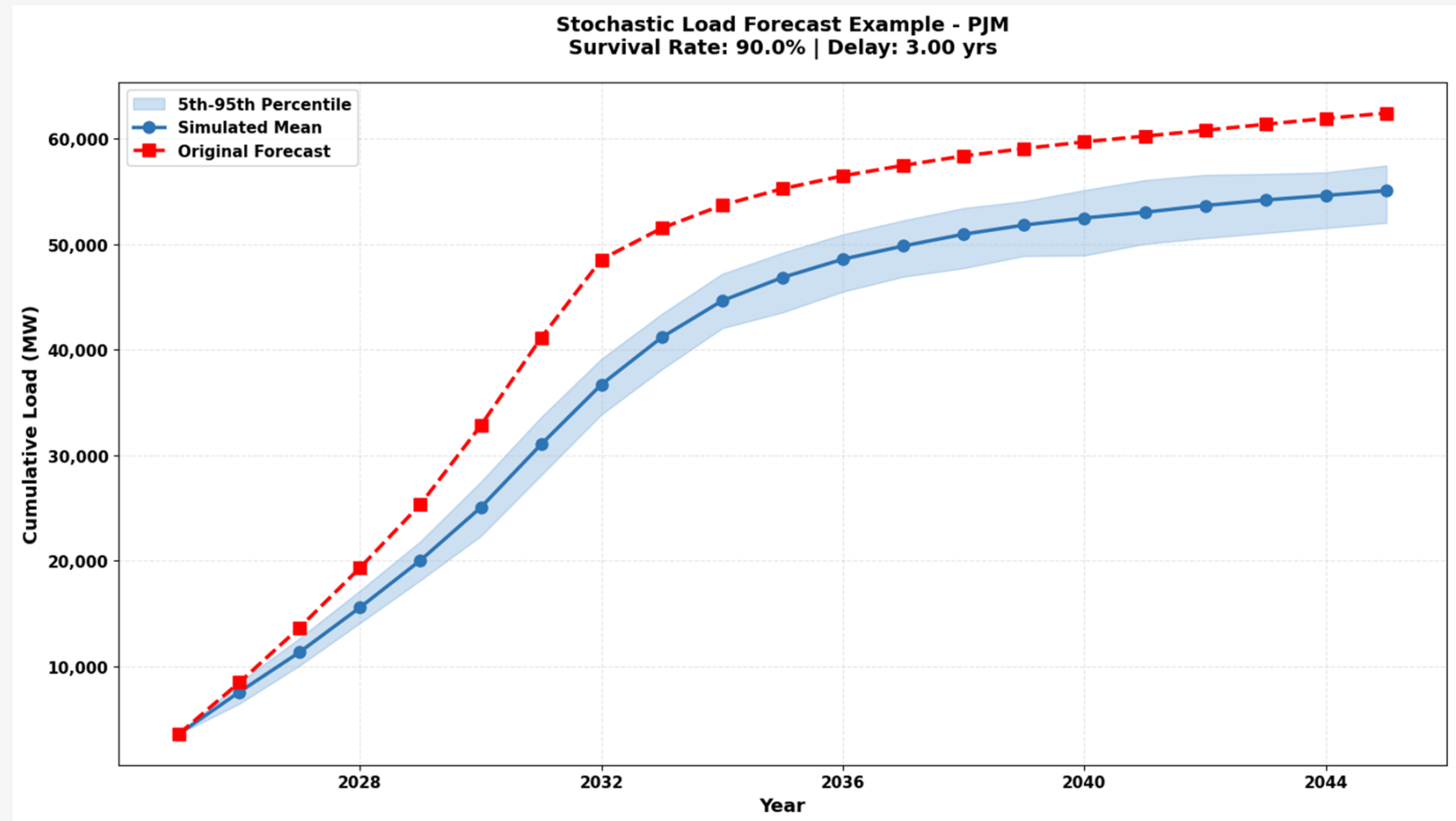
Average Dominion Error Rate in Load Forecasting by Year Removed from IRP Publish Year



Source: Internal analysis of Summer Peak Load Adjusted Forecasts presented in DOM IRPs for the years 2015-2018 and 2020-2024 (no IRP was produced in 2019).

CHARLES RIVER ASSOCIATES APPLIED A STOCHASTIC ANALYSIS TO PJM LOAD FORECASTING

3 Year Delay
100% Survival
100 Simulations



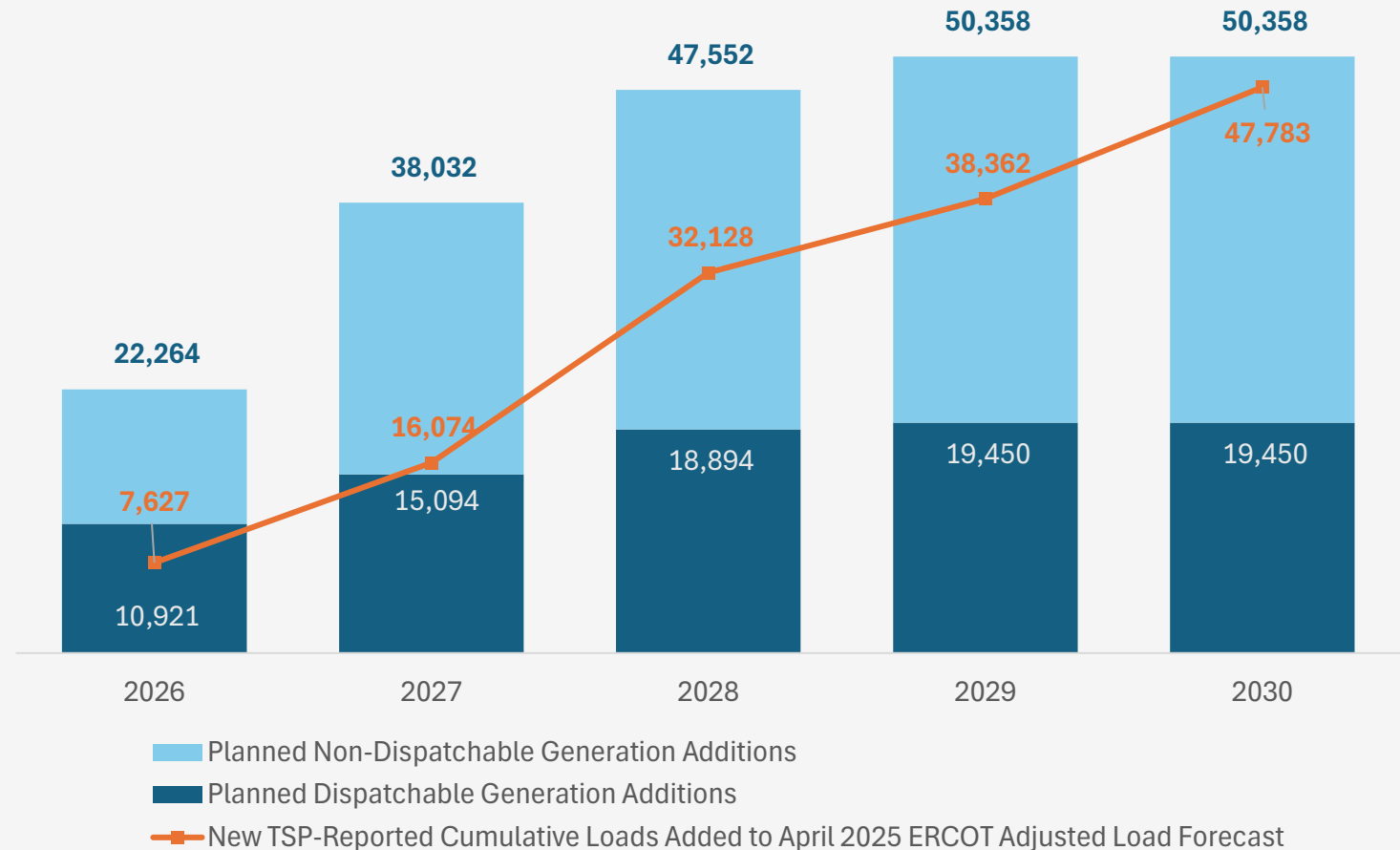
Even modest changes to assumptions of project cancellation or delay can have large effects on the forecast

RESOURCE ADDITIONS

Generation additions in ERCOT cannot keep pace with the large load demand forecast

- Cumulative Loads includes only Large Loads (Contracted and TSP Officer Letter)
- Most of the Planned Generation is non-dispatchable Solar, while data center loads have very high load factors
- Even within the block of dispatchable generation, most of it is battery energy storage

MW of Nameplate Planned Generation Additions and Forecasted New Large Loads



IMPACT OF PROJECTIONS



Well at least the market will tell people to build

Demand is going bonkers!



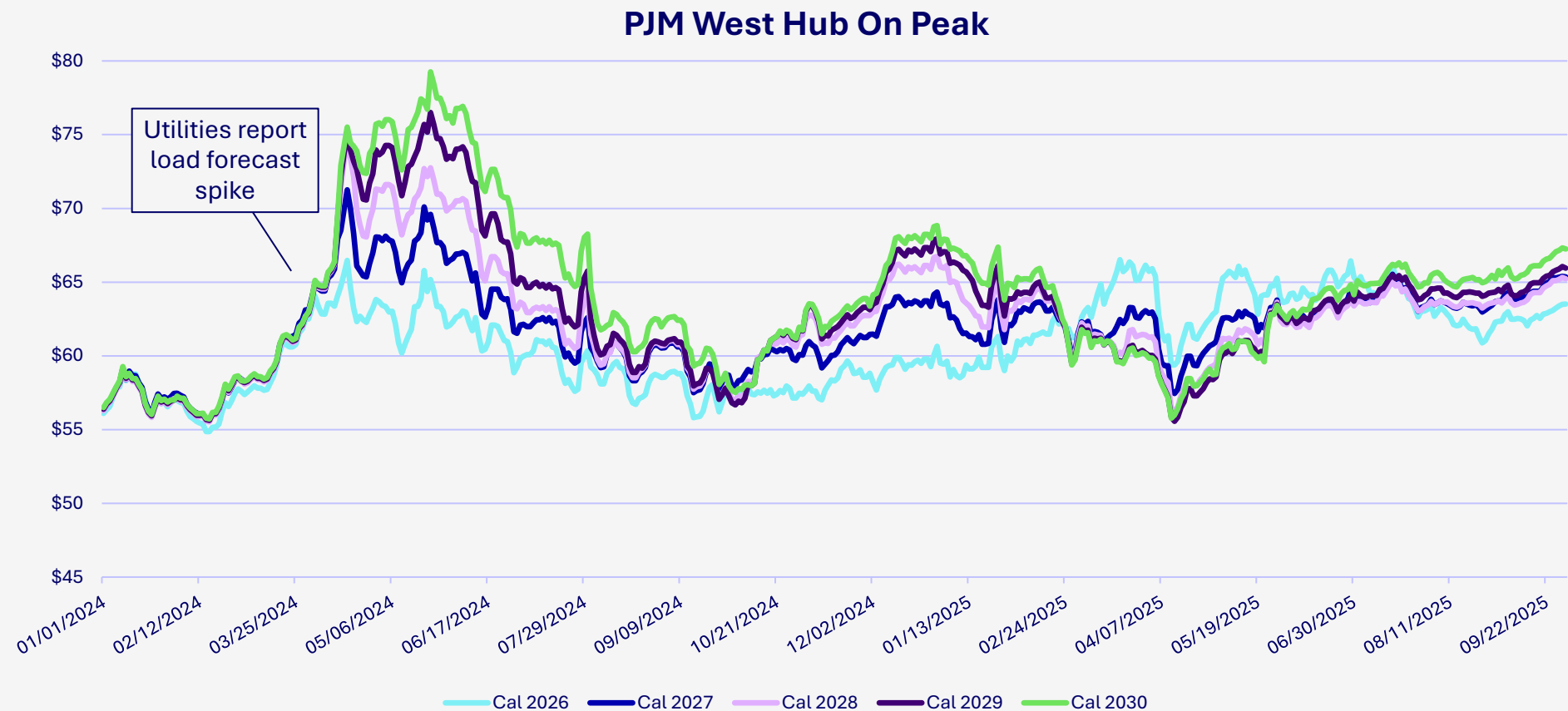
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Made with Piñata Farms



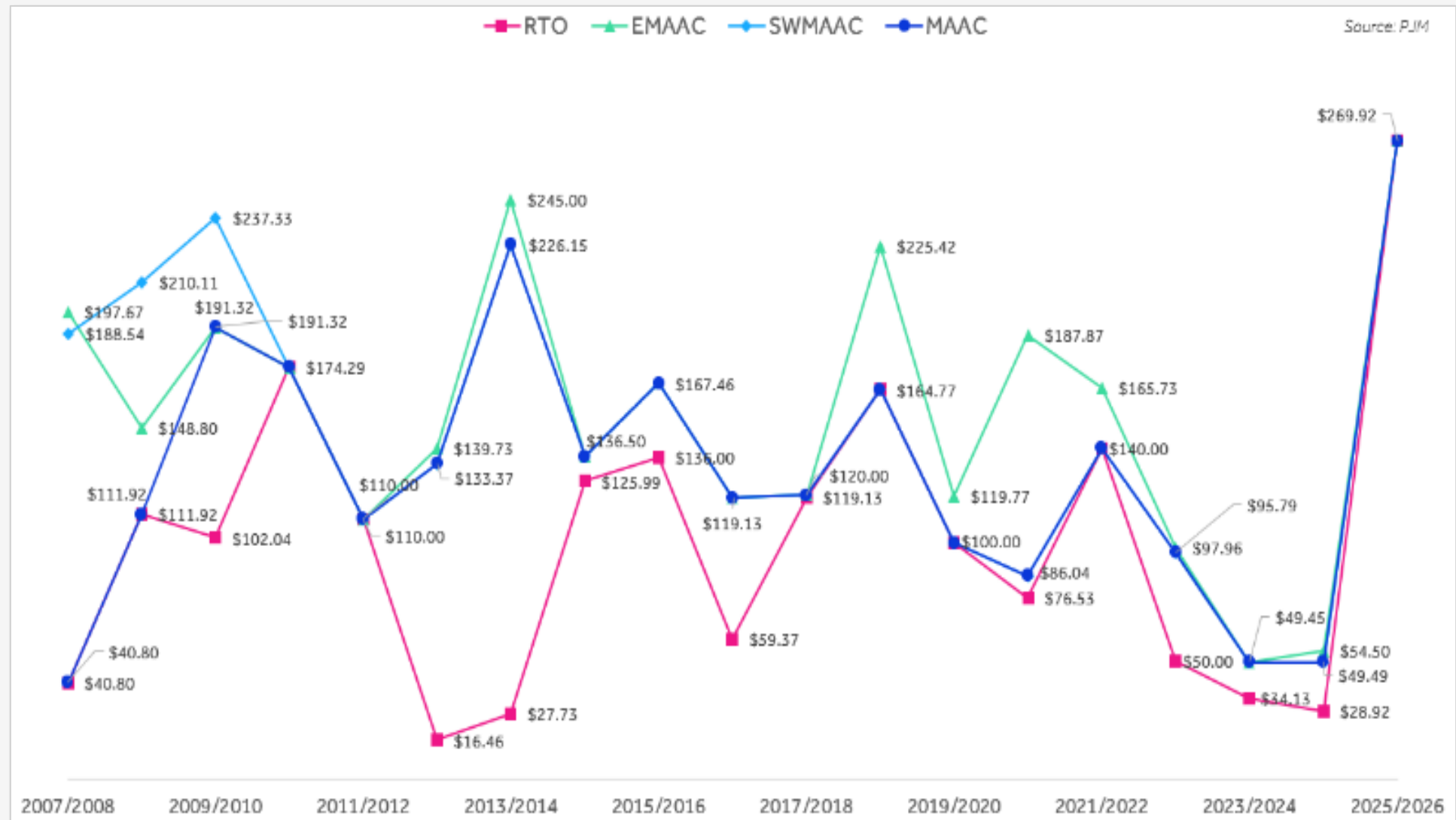
The market will tell people to build, right???

ENERGY MARKETS ARE NOT REFLECTING THE LOAD FORECASTS

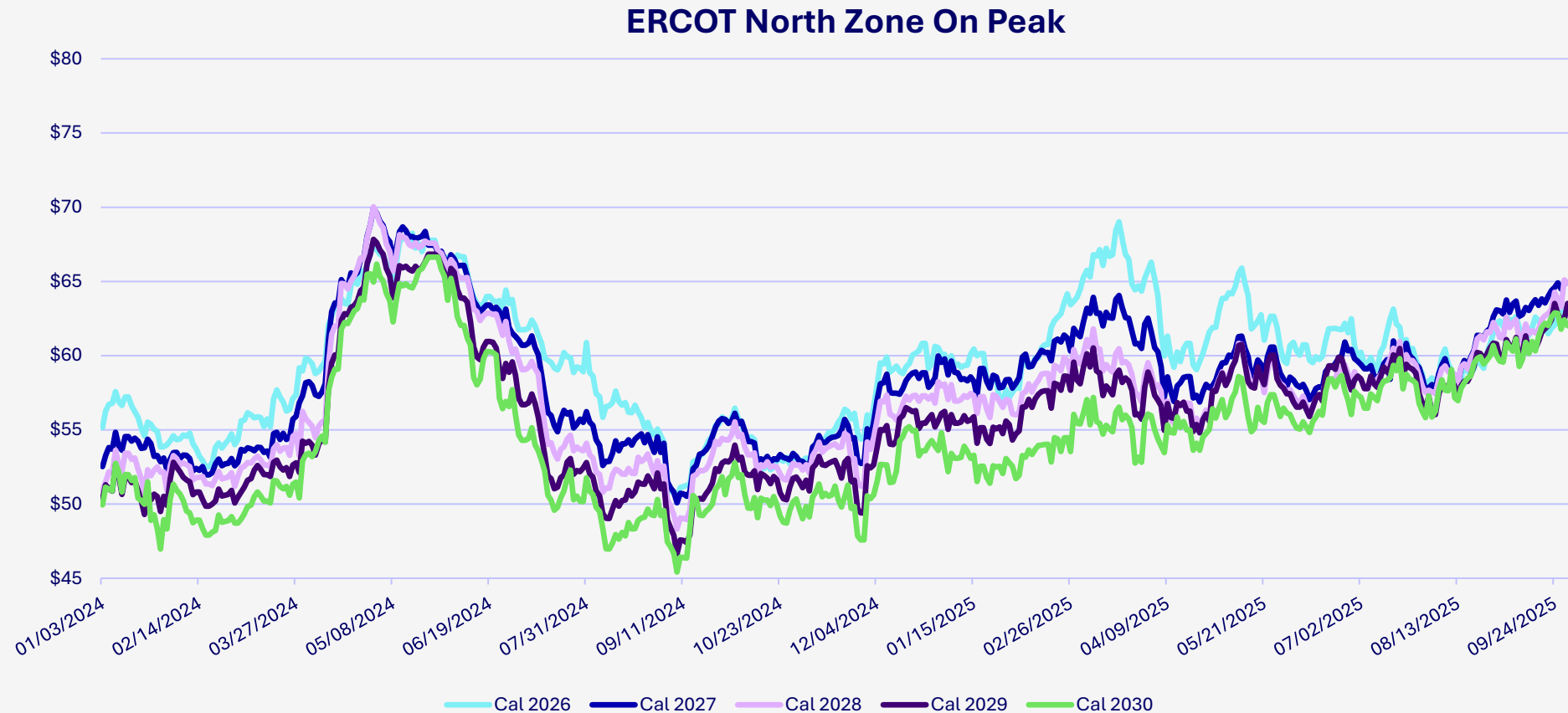


Trading for forward years doesn't suggest the scarcity indicated by administrative projections of demand/supply

PJM CAPACITY: A MONOPSONY FORWARD MARKET BASED ON ADMINISTRATIVE GUESSES OF FUTURE LOAD



ENERGY MARKETS ARE NOT REFLECTING THE LOAD FORECASTS



Trading for forward years doesn't suggest the scarcity indicated by **administrative** projections of demand/supply

ALBERTA CREATES A FEEDBACK LOOP THROUGH POLICY

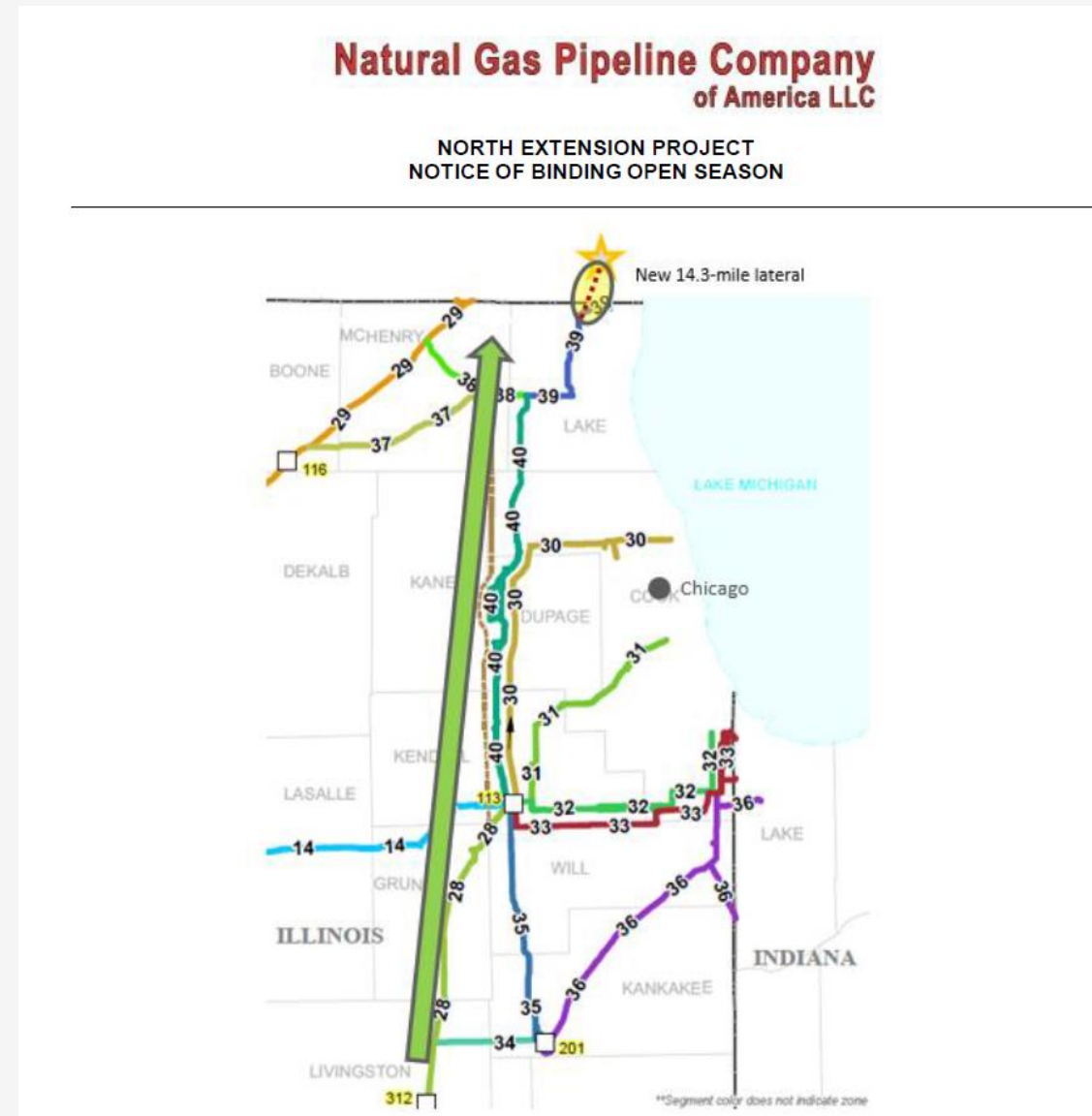
- Rather than working through data-center load growth on an inbound basis, AESO turned the exercise on its head
- AESO estimated an amount of residual system headroom that could be taken up by large loads, then announced an RFP-like process to determine which projects would receive demand transmission service (DTS) contracts.
- Forward prices reacted as the plan was formed and disseminated:
 - **HLD:** High-Level Design (HLD) outlining guiding principles, connection-study standards, and cost-allocation methods for large loads.
 - **REM Info Session:** Restructured Electricity Market (REM) Information Session, explaining how the HLD integrates with the broader REM reforms.
 - **Data Center Session:** “Data Center and Large Load Session” to brief stakeholders on how the HLD applies to data centers.

Cal 28 Prices



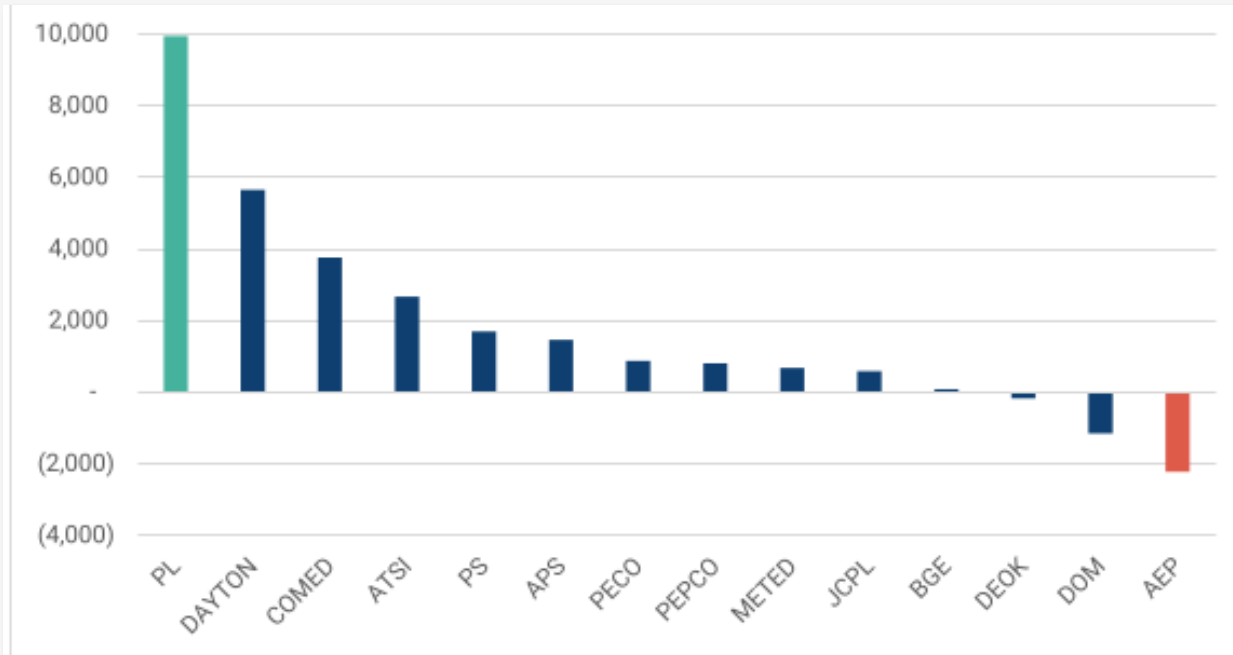
NATURAL GAS PIPELINES' OPEN SEASONS ALSO CREATE A CLEAR FEEDBACK LOOP

- Since FERC Order No. 636 in 1992, pipelines (and gas storage facilities) act entrepreneurially in forecasting potential demand to size expansion
- Unlike electric utilities, pipelines have to prove out that demand in the open market by holding an open season
- The open season allows demand to sign on the dotted line for a price term, which then feeds into a precedent agreement
- These precedent agreements then are used in the regulatory process to certificate the need for and siting of the pipeline
- Once the pipeline is constructed, these anchor tenants have first right to make use of the capacity they have subscribed, with a robust secondary market for that property right



LET'S TAKE A LOOK AT THE LATEST IN PJM...

PJM 2026 Utility Requests vs 2025 PJM Approved Large Load Adjustment Requests (MW): 2026-2031



Source: PJM Interconnection (PJM) & Jefferies LLC

From: Jefferies Equity Research Note, "Data Center Demand: Who is Revising Higher in PJM? Latest Hyperscale Proposals", Oct 14, 2025.

The Case of AEP

- **Mar 2023:** Temporary moratorium on new service requests.
- **May 2024:** With requests for more than 30,000 MW from 50 customers at 90 sites, AEP files an Application for a Data Center Tariff with the PUCO
- **Jul 2025:** Data Center Tariff approved. Includes:
 - Take-or-pay requirements including a minimum demand charge not to exceed 85% of total contract capacity;
 - Contract term limits and exit fees of 3 years' minimums.
 - A 45-day window to submit a request and pay a one-time fee to AEP Ohio to "conduct a formal study of their prospective load."

From May 2024 to Sep 2025, AEP Ohio reduced the number of potential data center sites from 90 to 36 and reduced its projected data center load from more than 30,000 MW to 13,023 MW.

IT'S TIME TO GET REAL



We can consider a handful of regulatory policies that could be employed to clarify the load forecasts and, more importantly, foster confidence in long-term investment decisions

- A Network Open Season for Grid Expansion
- A 'Speed to Power' Interconnection for Load / Generation Pairs
- A Nudge (or Requirement) for Longer-Term Bilateral Capacity Contracting
- A 'Minimum Commitments' Framework for Large Loads
- Better Energy Price Formation

Find out more on all these concepts by clicking through NRG's writings at
<https://www.nrg.com/energy-policy.html>

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