

LAS Meeting

November 24, 2026

CRA Charles River Associates

CRA team



Margarita Patria, PhD
Project Director



Oliver Stove, PhD
Technical Director



Tayler Amatto
Project Manager and Bottom-Up Workstream Lead



Michael May
Modeling and Forecasting Lead



Nyah Spearman
Modeling and Forecasting Support (Top-Down)



Allen Hu
Modeling and Forecasting Support (Top-Down)

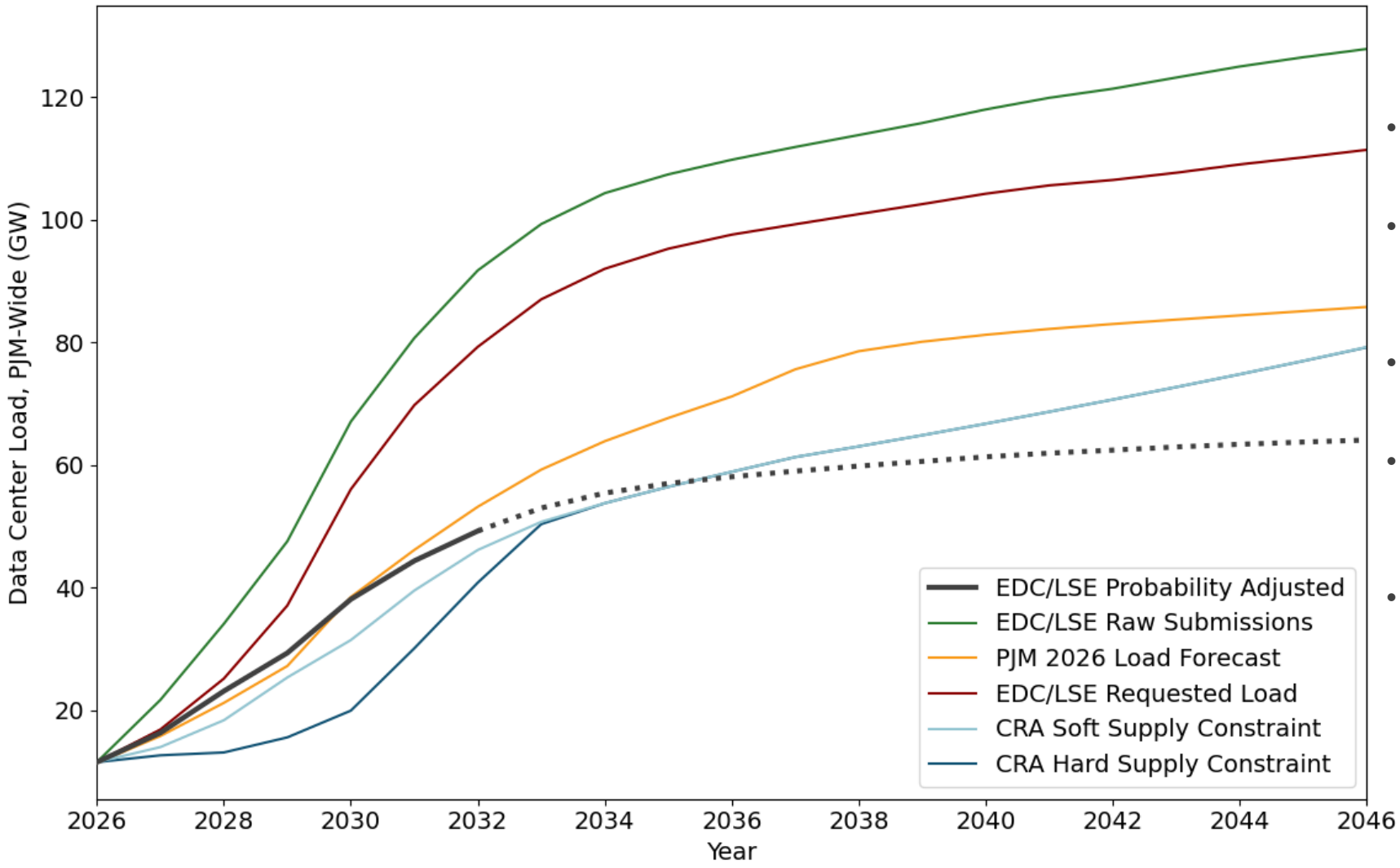
CRA Charles River Associates

Meeting Agenda

Topic
Overview
Methodology Updates
Results
Break
Q&A

CRA Charles River Associates

CRA reviewed project contract and permitting status to determine a probability-adjusted demand level



- **EDC/LSE Submissions (Green):** Unadjusted aggregate data center demand from EDC/LSE submissions.
- **EDC/LSE Requests (Red):** Requested power from PJM by each EDC/LSE.
- **EDC/LSE Probability-Adjusted Demand (Dark Grey):** Aggregated demand adjusted for probability of materialization.
- **PJM 2026 Load Forecast (Orange):** PJM's published forecast for comparison.
- **Soft Supply Constraint (Light Blue):** CRA's reconciled top-down and bottom-up demand forecast.
- **Hard Supply Constraint (Dark Blue):** CRA's power-constrained base forecast, reflecting planned generation additions, current regulations, behind-the-meter generation offsets, and 1-in-10 reliability.

CRA Charles River Associates

Meeting Agenda

Topic
Overview
Methodology Updates
Results
Break
Q&A

CRA Charles River Associates

Recall that as part of the bottom-up assessment, EDC/LSE pipeline submissions were reviewed and adjusted to account for project materialization risk

Project Risk Assessment



Contractual commitments: Status and extent of financial backing



In-service date (ISD): Near-term versus longer-term project timing



Binding agreements: Signed customer ESAs/LSAs and extent of binding obligations



Permitting: Potential constraints from local restrictions and zoning requirements

Increasingly important risk

Resulting Pipeline Adjustments

The adjusted pipeline groups projects into the following tiers based on assessed risk:

Tier 1 (Early-Stage) – Projects not fully permitted but with signed LOA and in areas with local moratoriums, or with an in-service date (ISD) beyond 2035

Tier 2 (Advancing) – Construction commitments (ISD: <2036) or ESAs (ISD: 2030-2035). Permits may not be fully issued (in state or local review)

Tier 3 (Deployment-Ready) – Permits issued, high probability of materialization, signed ESA, imminent ISD

Tier 4 (Operating) – Existing / already constructed data centers

Since the last LAS, additional review of submitted projects was conducted to better qualify impeding permitting / data center moratoriums risk

WHAT WE LOOKED FOR, AND WHY

Starting point: ESO / TSA (or CC)

Looked for: ESO/TSA or CC as reported in submissions; not verified by us.
Why: Sets the starting probability: ESO/TSA = greater financial commitment; CCs firm per PJM but less binding.

1 Building

Looked for: Anything visibly started on the project.
Why: Submitted ISDs and ramps can be optimistic, so visible progress anchors timing and ramps are benchmarked to the CRA default.

2 Permits

Looked for: Any record of permits: in hand vs. in review.
Why: Permits in hand are assumed on time; permits in review are delayed unless there is an ESO/TSA and no public pushback.

3 Local pushback / moratoriums

Looked for: Bans, zoning, moratoriums and public pushback.
Why: Submissions don't capture impending restrictions, so we apply them to unpermitted projects (bans removed, moratoriums delay 1 year).

CATEGORIES ASSESSED AND PROBABILITY OF MATERIALIZING

	Permits in hand	Permits in review
ESO / TSA	**90–100%** ESO + permits in hand	**70–90%** ESO + permits in review
CC	**50–75%** CC + permits in hand	**30–60%** CC + permits in review
Other	**10–40%** Neither ESO/TSA nor CC	**0%** Speculative / duplicative

Outlined cells: project-level diligence (building, permits, local pushback) was done only where an ESO/TSA or CC has permits in review, or where there is neither.

Each Monte Carlo run (N=2,000) draws one probability per category; ranges are CRA estimates.

CRA Charles River Associates

Meeting Agenda

Topic
Overview
Methodology Updates
Results
Break
Q&A

CRA Charles River Associates

Contractual and permitting maturity varies substantially by zone; most ESO/TSA projects with post-approval permits are in AEP

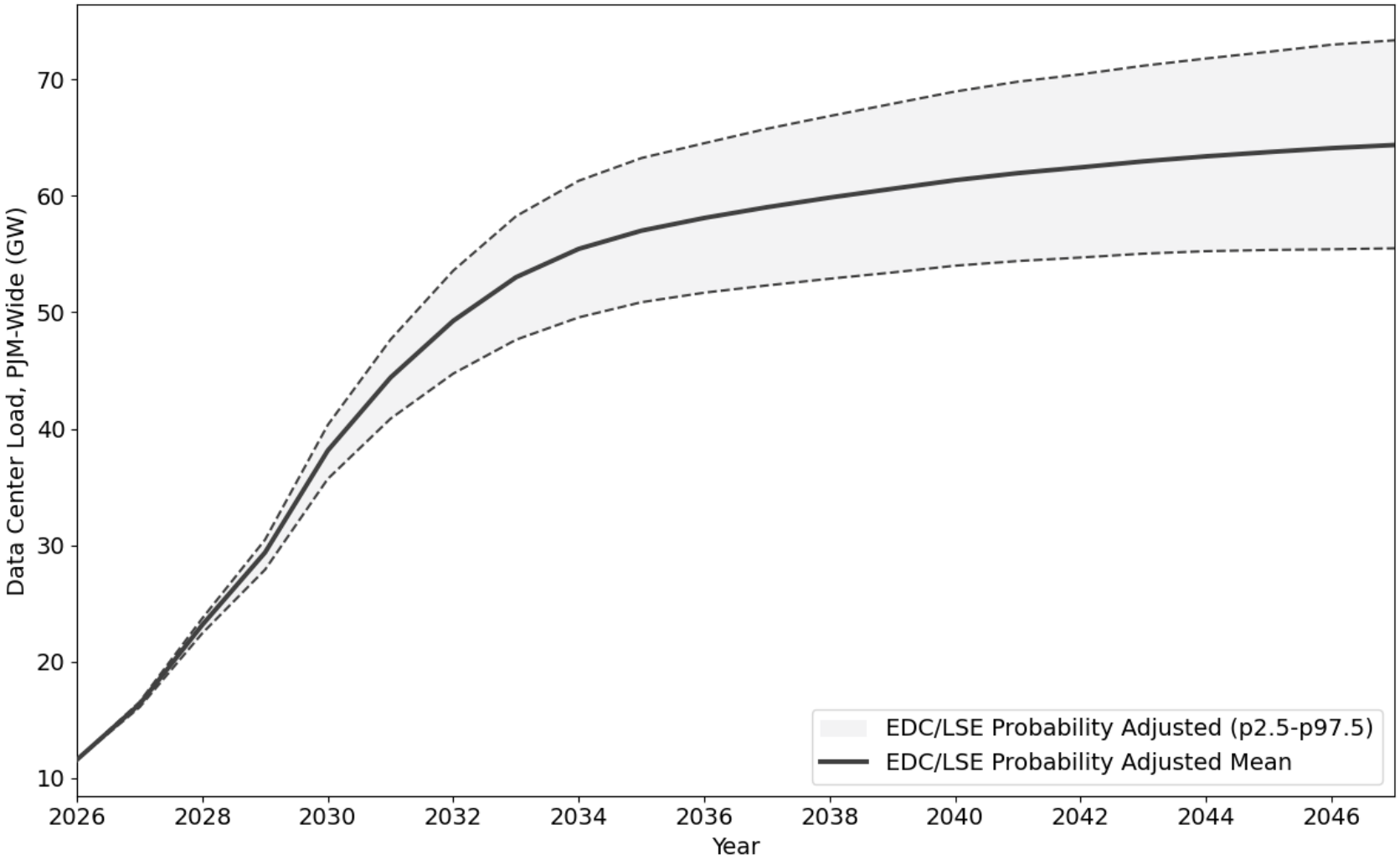
Post-Removal Projects with an In-Service Date by 2032

Zone	ESO/TSA + permits in hand	ESO/TSA + permits in review	CC + permits in hand	CC + permits in review	Other	Total MW
Dominion Energy (DOM)	0%	22.3%	0%	74.2%	3.4%	5,508
NOVEC (DOM)	37.6%	11.7%	17.1%	21.5%	12.1%	3,751
ODEC (DOM)	0%	0%	0%	20.7%	79.3%	1,012
Rappahannock (DOM)	0%	0%	65.6%	25.2%	9.2%	2,499
AEP	62.4%	20.7%	0%	1.5%	15.5%	11,645
PPL	7.5%	30.2%	0%	0%	62.3%	16,998
ComEd	0.7%	41.4%	42.3%	15.5%	0%	6,526
Dayton	0%	12.1%	0%	0%	87.9%	3,127
ATSI	0%	0%	6.8%	8.3%	84.9%	5,079
APS	5.9%	0%	5.5%	0%	88.6%	4,271
PSEG	23.5%	0%	48.4%	0%	28.1%	3,117
DEOK	6.4%	0%	0%	0%	93.6%	2,750
Other zones	13.1%	0%	2.9%	3.9%	80.2%	3,675

[1] Submissions in ComEd with a CC and TSA are treated as an ESO.
[2] All PSEG projects have received approvals, and segmentation happens by the EDC. We treat Very High/Coming into Service PSEG-reported probabilities as an ESO with permits, and High/Medium as a CC with permits.

CRA Charles River Associates

Demand implied by the current project pipeline grows from 11.6 GW today to 49.3 GW by 2032, with uncertainty spanning 17.6 GW by 2046

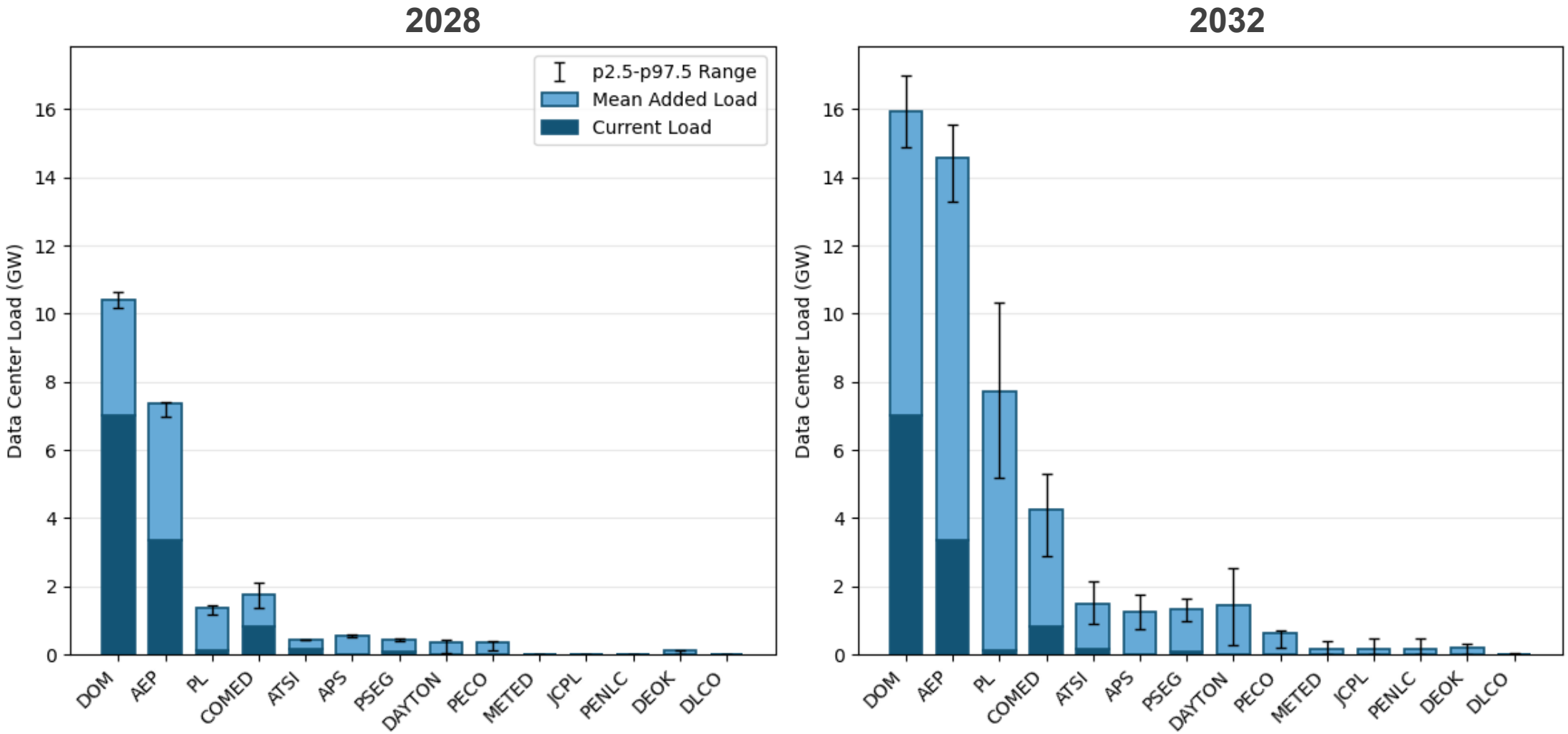


- Simulated demand (GW) in key years, based on 2,000 Monte Carlo draws (p2.5, **mean**, p97.5):
  - 2028: (22.5, **23.2**, 23.7)
  - 2030: (35.7, **38.1**, 40.3)
  - 2032: (44.7, **49.3**, 53.6)

- Narrow uncertainty bands near-term do not imply little uncertainty in realized load. Rather, it implies most projects submitted to PJM with imminent in-service dates have achieved advanced contractual and permitting statuses.

CRA Charles River Associates

Data center load may reach >1 GW in up to 8 PJM zones by 2032



CRA Charles River Associates

Meeting Agenda

Topic
Overview
Methodology Updates
Results
Break
Q&A

CRA Charles River Associates