

Planning for Load Growth

Projecting the impact of Data Centers



Utility Energy Forum – Strategic View Session

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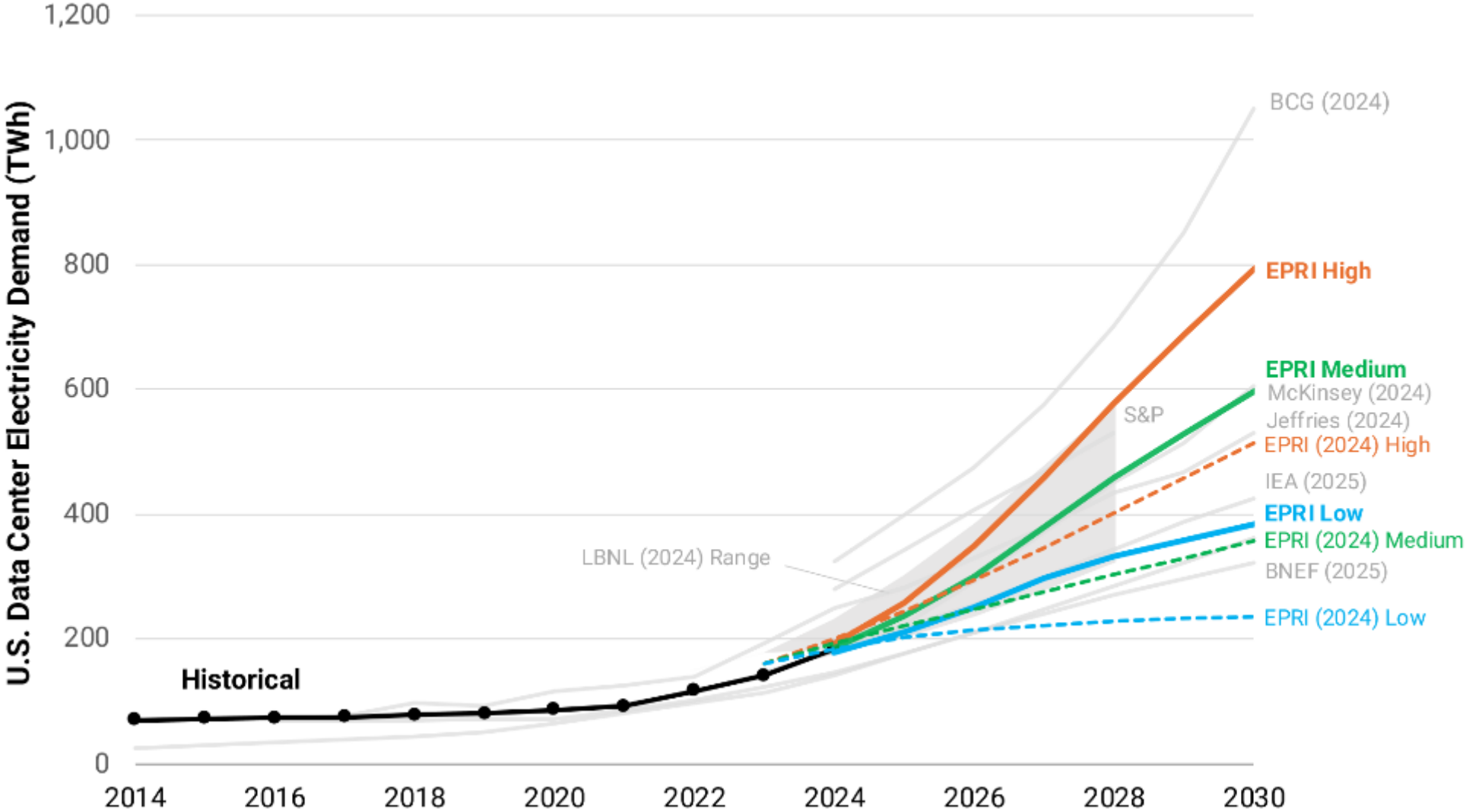
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Data Center Load Growth

U.S. data center electricity consumption projections



- 9% to 17% of U.S. electricity by 2030 (EPRI), up from 4% to 5% today
- Scenarios are different shares of DCs in advance planning becoming fully operational by 2030
- EPRI’s 2026 projections ~ 60% higher than 2024 estimates, driven by rapid development over past 18 months

Source: EPRI. “Powering Intelligence 2026: Updated Scenarios of U.S. Data Center Electricity Use and Power Strategies”. 3002034696. February 2026.

Data center load growth is on a steep trajectory

Data center share of total electricity load by state

Today, **Virginia** is the only state where DCs consume > 20% of electricity; share could increase to 39% - 57% by 2030

In EPRI's Medium scenario, seven additional states could exceed a 20% share by 2030

Virginia

Oregon

Iowa

Nebraska

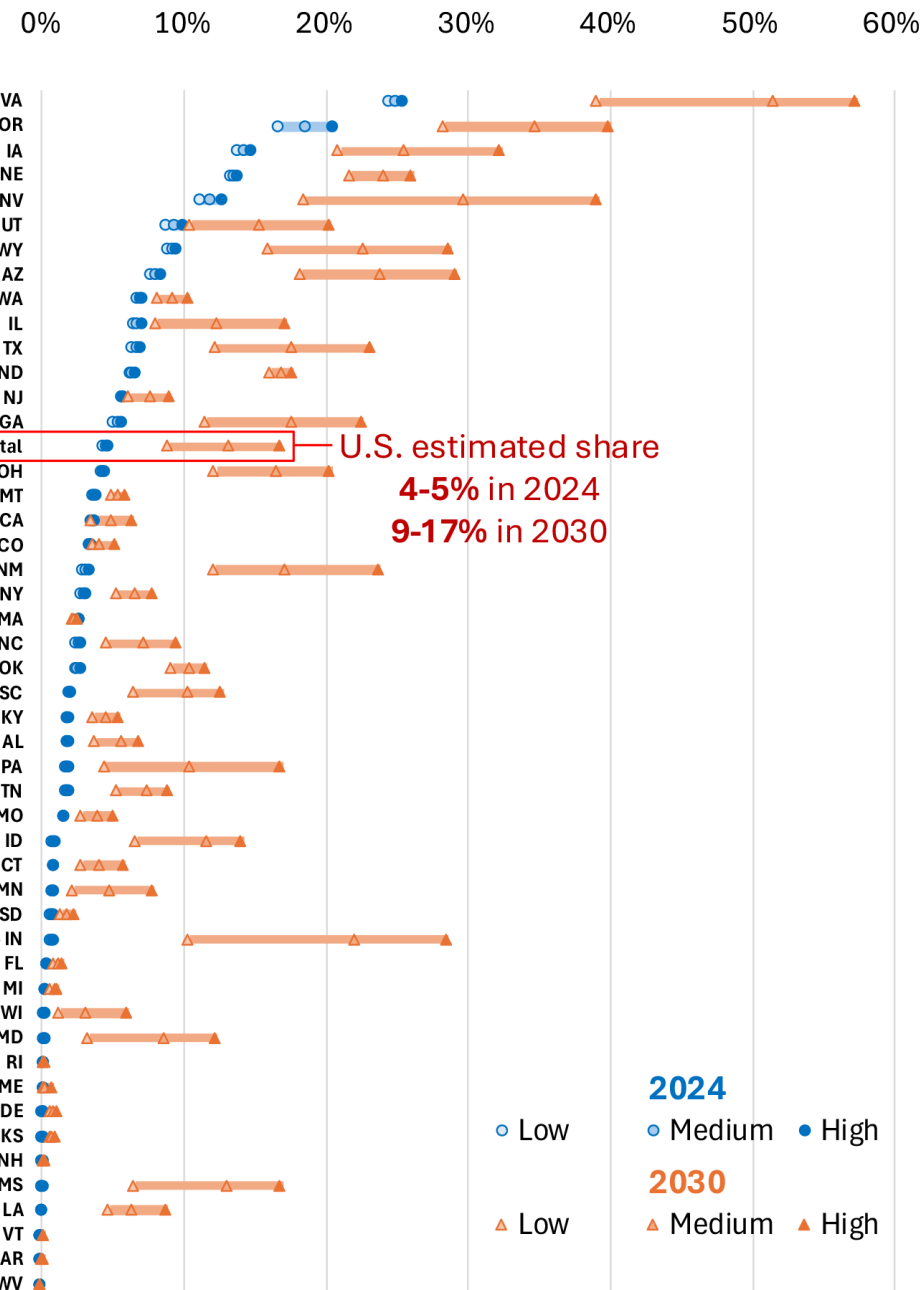
Nevada

Utah

Wyoming

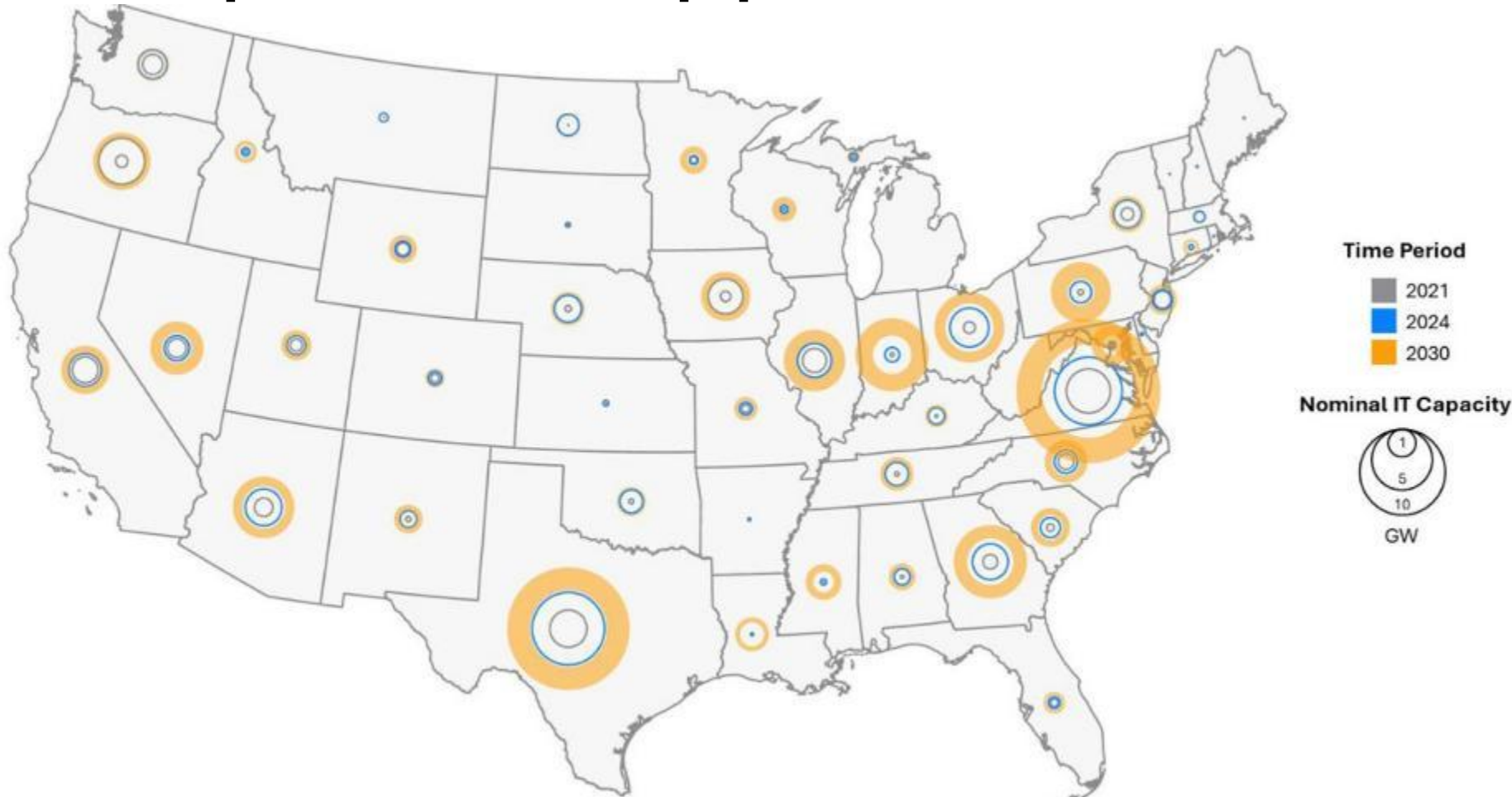
Indiana

Data Center Share of Total Electricity Use



Source: EPRI. "Powering Intelligence 2026: Updated Scenarios of U.S. Data Center Electricity Use and Power Strategies". 3002034696. February 2026.

State-level data center nominal IT capacity (GW) today and in the planned 2030 pipeline



- Gray = capacity in 2021
- Blue = capacity in 2024
- Orange band = scenario range of 2030 projected capacity
- Circle area proportional to nominal IT capacity
- Include large- & small-scale DCs and cryptocurrency mining

Source: EPRI. "Powering Intelligence 2026: Updated Scenarios of U.S. Data Center Electricity Use and Power Strategies". 3002034696. February 2026.

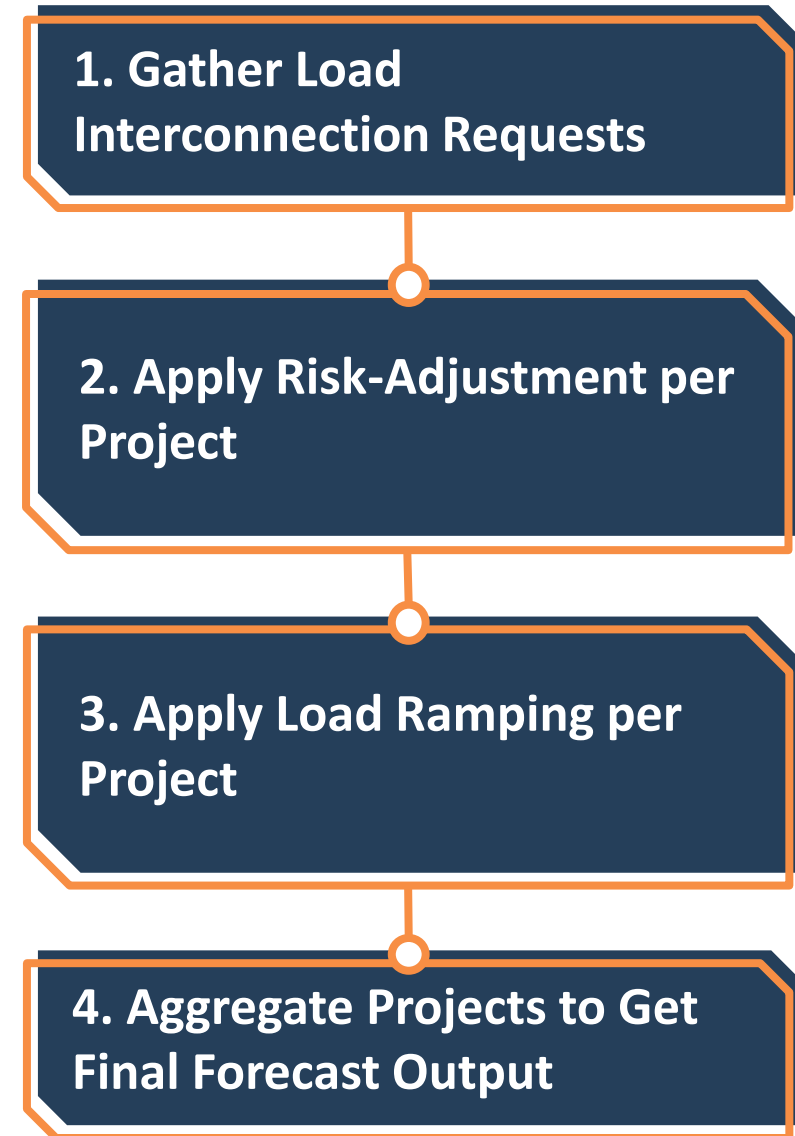
Continued concentration in established markets (e.g., VA, TX) with emerging growth in other states as developers diversify geographically



Forecasting Large Load Growth

Forecasting Framework for Large Loads

- Gather information about all data centers in the interconnection queue
- For each data center:
 - Derate the requested nameplate capacity
 - Apply a load ramping profile using the derated capacity
- Aggregate individual data centers to obtain the total predicted load
- Cap the aggregated value using the regional forecast value



Granular Forecast Approach

(a) Spatial Granularity

- Siting of data centers depends on multiple factors (land suitability, infrastructure, etc.)
- Use those factors to **disaggregate** system-level load forecast to, e.g., zonal

(b) Temporal Granularity

- Data center load varies over time (hour of day, day of week, season, etc.)
- Use **load shapes** to go from annual peak to hourly data (8760s)

Inform higher-resolution forecasts



**Impacts on Affordability:
“Win-Win Watts”**

Win-Win Watts

When New Loads Lower Electricity Prices



Three Levers for Win-Wins

1. Planning

Link load growth to clean energy investments

2. Rate Design

Ensure large loads cover incremental costs (contracts, minimum billing, exit fees)

3. Demand Flexibility

Shift loads and leverage on-site resources

Win-Win Watts

When New Loads Lower Electricity Prices

When New Loads LOWER Price



- Spare grid capacity
- High load-factor customers (70–90% vs ~55%)
- Low coincidence with net peak
- Near existing infrastructure
- Low-cost new generation
- Flexible loads that reduce peak strain

Effect: System costs spread across more kWh → lower prices

Data Centers Can Help



- High load factor
- Predictable demand
- Economies of scale
- Flexibility through workload shifting and using backup/on-site resources



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