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Strategic Industries Surging – *Presentation (April 2025)*

John D. Wilson, Zach Zimmerman, and Rob Gramlich

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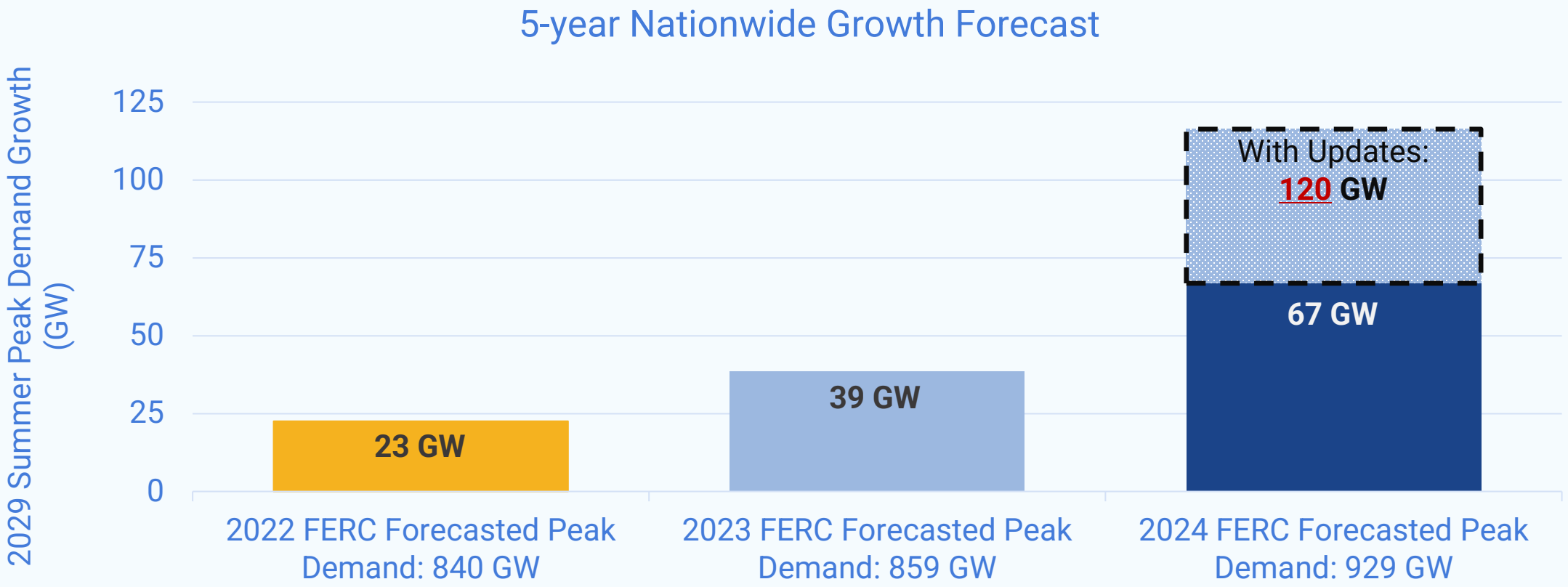
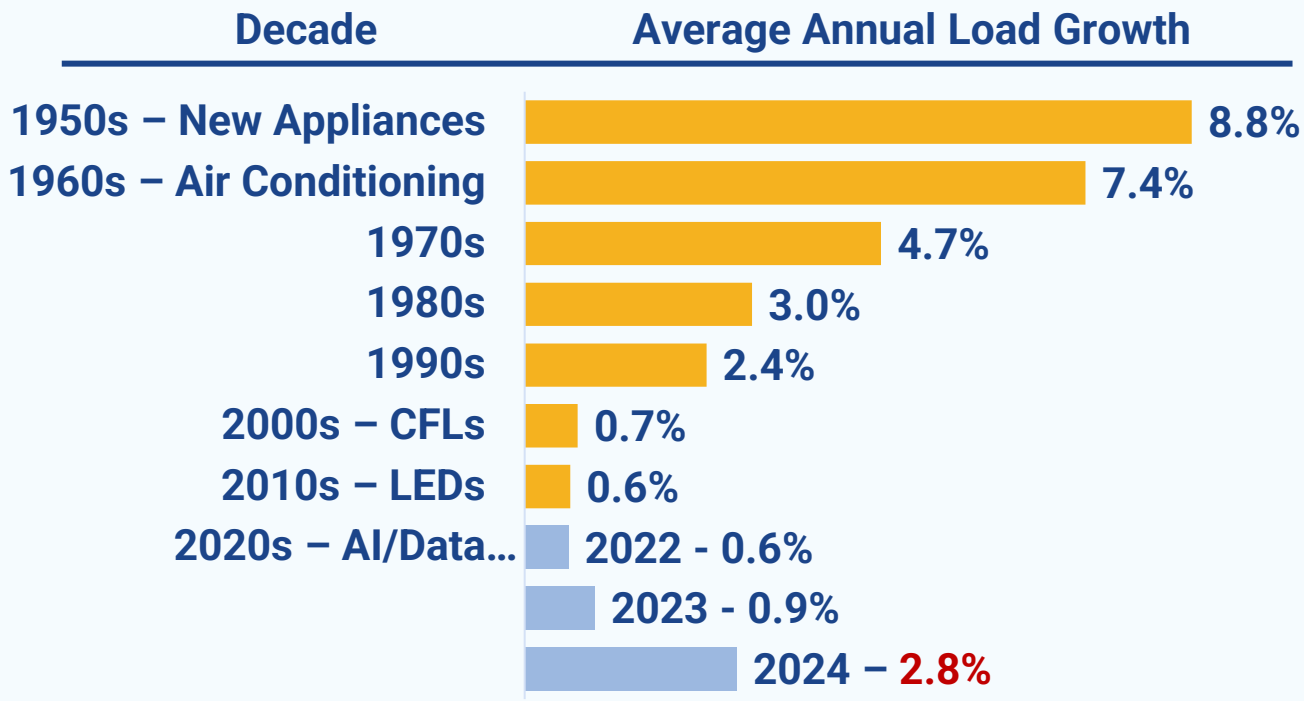
Five-Year Load Growth Up Five-Fold to 120 Gigawatts



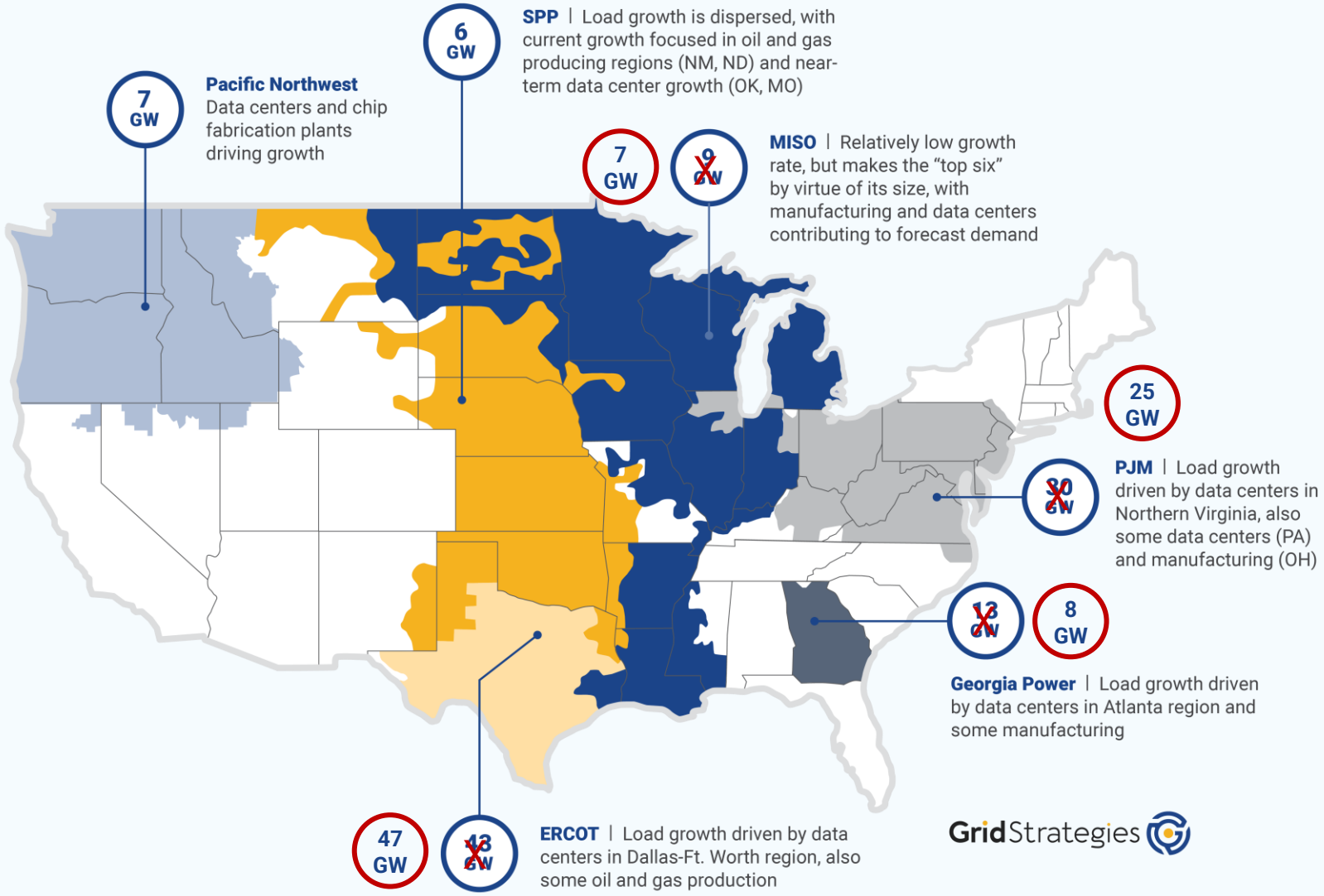
A Scramble to Respond to Growing Load



Strategic Industries Driving Load Growth Across Regions

Near-Term Load Drivers	Data Centers	Manufacturing	Electrification
Arizona Public Service	●		
CAISO	●		●
Duke	●	●	
ERCOT	●	●	
Georgia Power	●	●	
ISO-NE			●
MISO	●		●
NYISO	●	●	●
Pacific Northwest	●	●	
PJM	●	●	●
SPP	●		

Six Regions Driving Load Growth Through 2029



Planning Areas with Sharpest Increase in 2024 Load Forecast

Updates from published reports:

- ERCOT 2025 update to board increased forecast by 4.0 GW
- PJM 2025 forecast increased by 10.4 GW (not 15.2 GW)
- Georgia Power 2025 IRP forecast increased by 2.2 GW (not 7.3 GW)
- MISO 2024 white paper decreased forecast by 2.0 GW

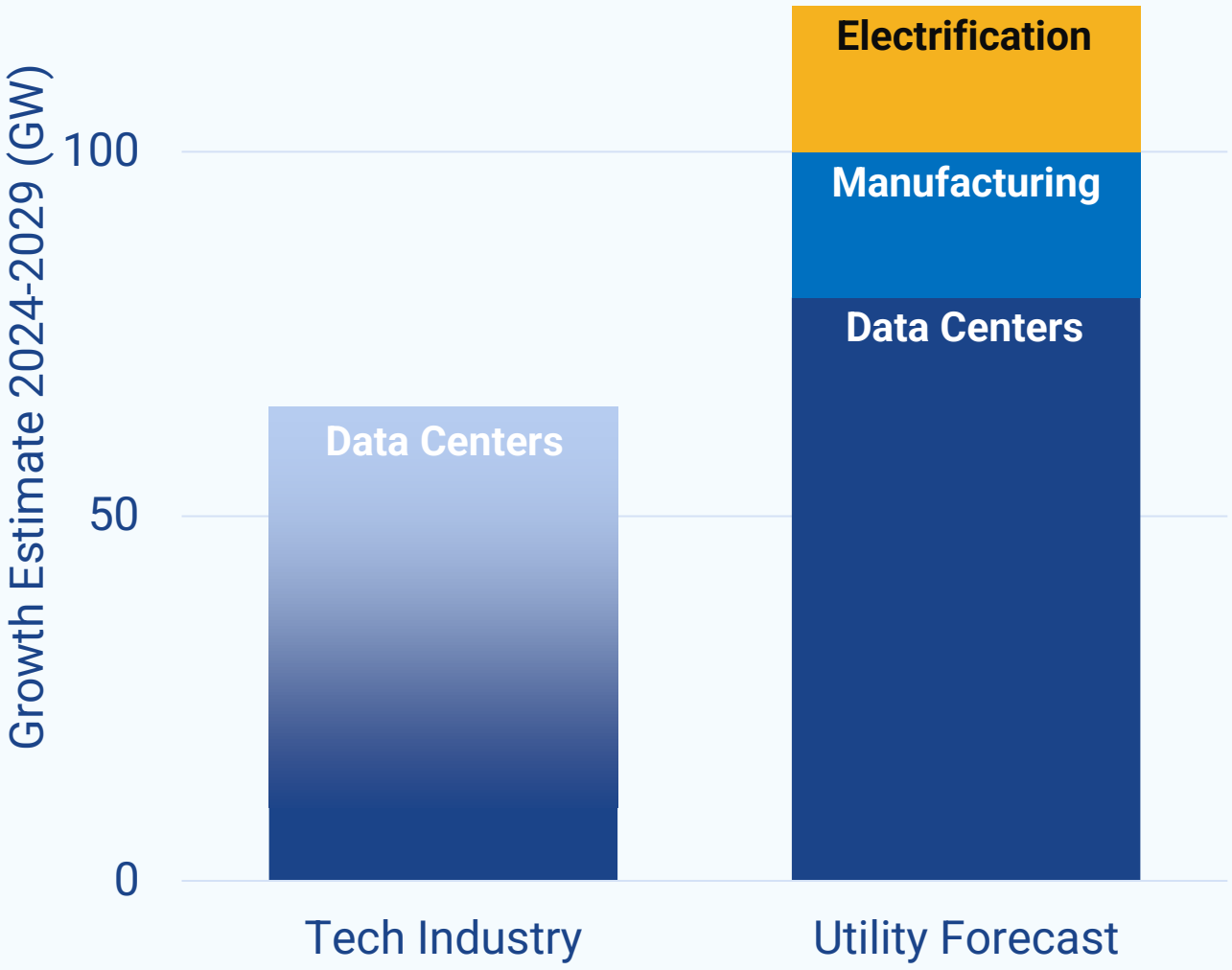
Planning Areas with Greatest Increase in Summer 2029 Peak Demand

Planning Area	2029 Peak Demand				Forecast Increase (GW)	Forecast Increase (Percent)	Total Growth Through 2029 (GW)
	2022 Forecast (GW)	2023 Forecast (GW)	2024 Forecast (GW)	Forecast Updates (GW)			
ERCOT	84.4	89.6	88.1	+ 40.9	**44.6**	52.8%	**46.8**
PJM	153.3	156.9	165.7	**+ 10.4**	**22.7**	14.8%	**24.8**
Georgia Power	16.3	17.3	22.4	**+ 2.2**	**8.4**	51.6%	**7.9**
MISO	132.4	133.0	138.4	**- 2.2**	**4.1**	3.1%	**7.1**
Pacific Northwest	37.4	38.4	38.5	+ 2.0	**3.1**	8.2%	**7.4**
SPP	56.6	59.5	62.5		**5.9**	10.4%	**6.3**
Duke Energy (North & South Carolina)	33.9	36.2	36.6		**2.7**	7.8%	**2.6**
Arizona Public Service	8.7	9.8	9.9		**1.2**	13.6%	**1.5**
NYISO	31.5	32.3	32.3		**0.9**	2.8%	**0.8**
Tennessee Valley Authority	31.8	32.4	32.5		**0.7**	2.2%	**1.4**
All other planning areas	251.2	250.5	249.5		**-1.7**	-0.7%	**10.0**
Total	**840.5**	**858.9**	**879.8**	**+ 53.5**	**92.8**	**11.0%**	**120.3**

Data Center Forecast: Bottom Up vs Top Down

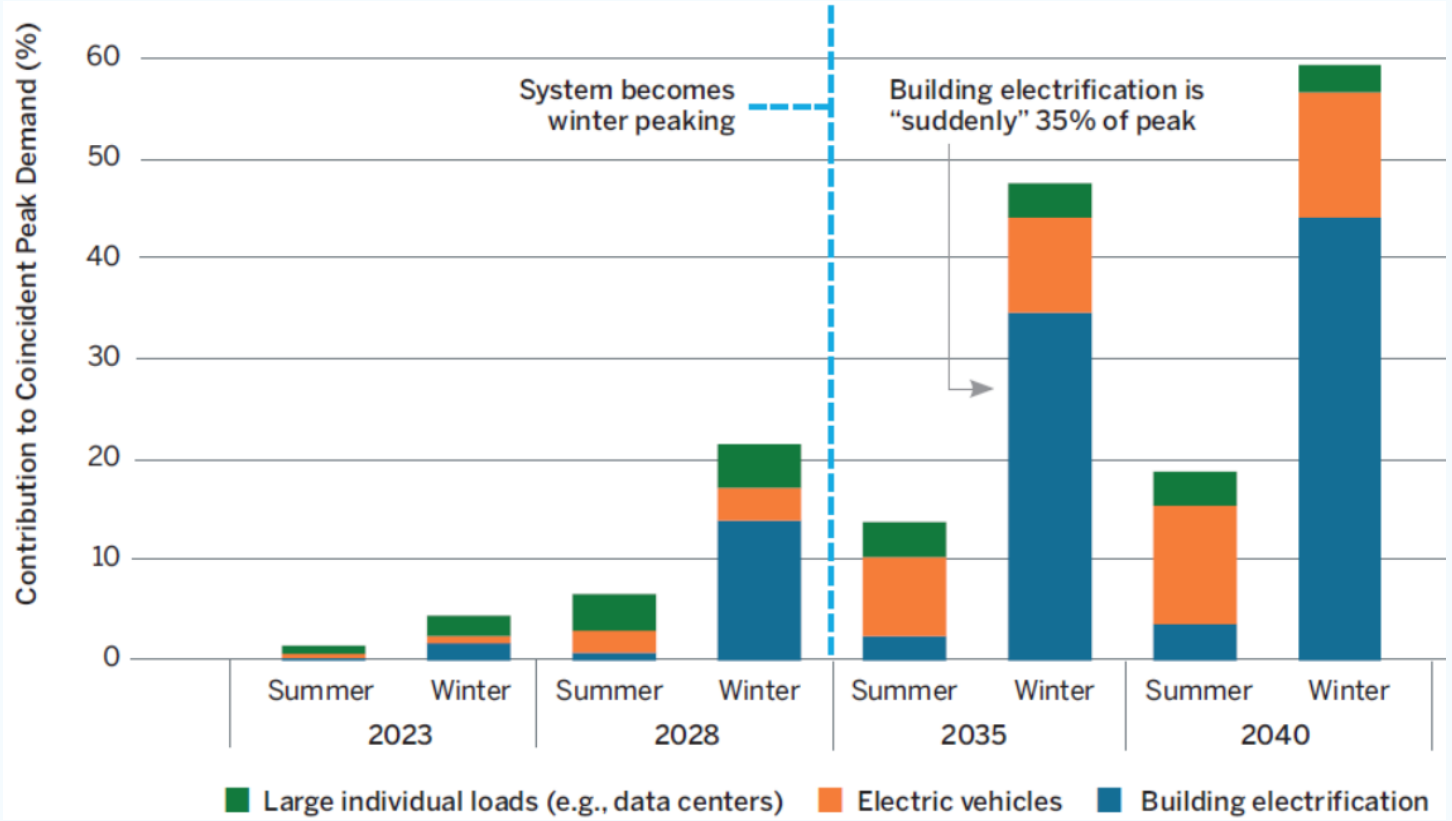
In the aggregate, the power industry does not have access to the data it needs to accurately forecast data center load.

- Industry specialists estimate five-year data center demand growth from as little as 10 GW to as much as 65 GW through 2029.
- Only some utilities break out data centers from other large load drivers. Grid Strategies' rough estimate of aggregate utility data center load forecasts is about **80** GW. Note that this estimate relies on informed speculation for regions with no published breakout or inconsistent category definitions. This is almost 10% of forecast 2029 load of **929** GW.



Building and Transportation Electrification Impacts Coming

Electrification and Large Load Impacts on New York's Peak Power Demand

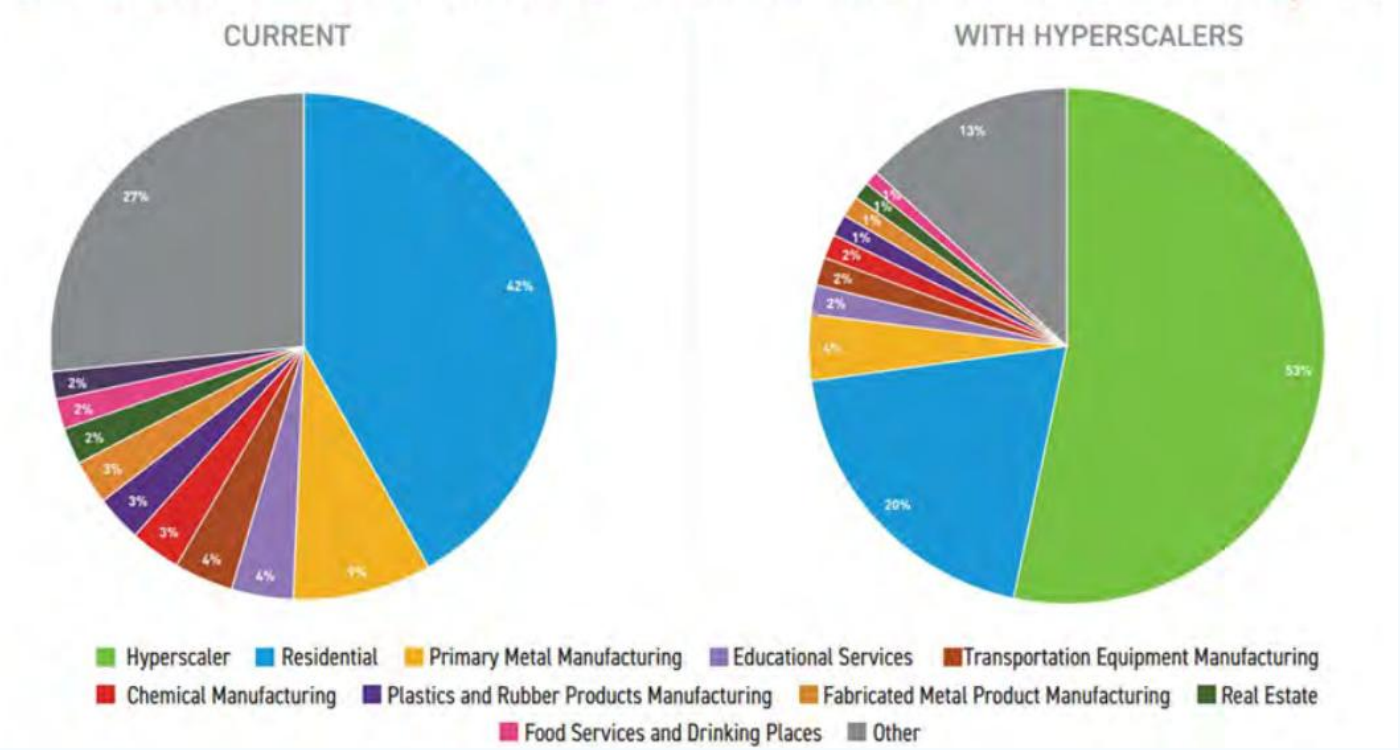


GridStrategies

New Large Load Tariffs to Reduce Revenue Risks and Improve Forecasts

New report from Energy Futures Group:
Review of Large Load Tariffs to Identify Safeguards and Protections for Existing Ratepayers

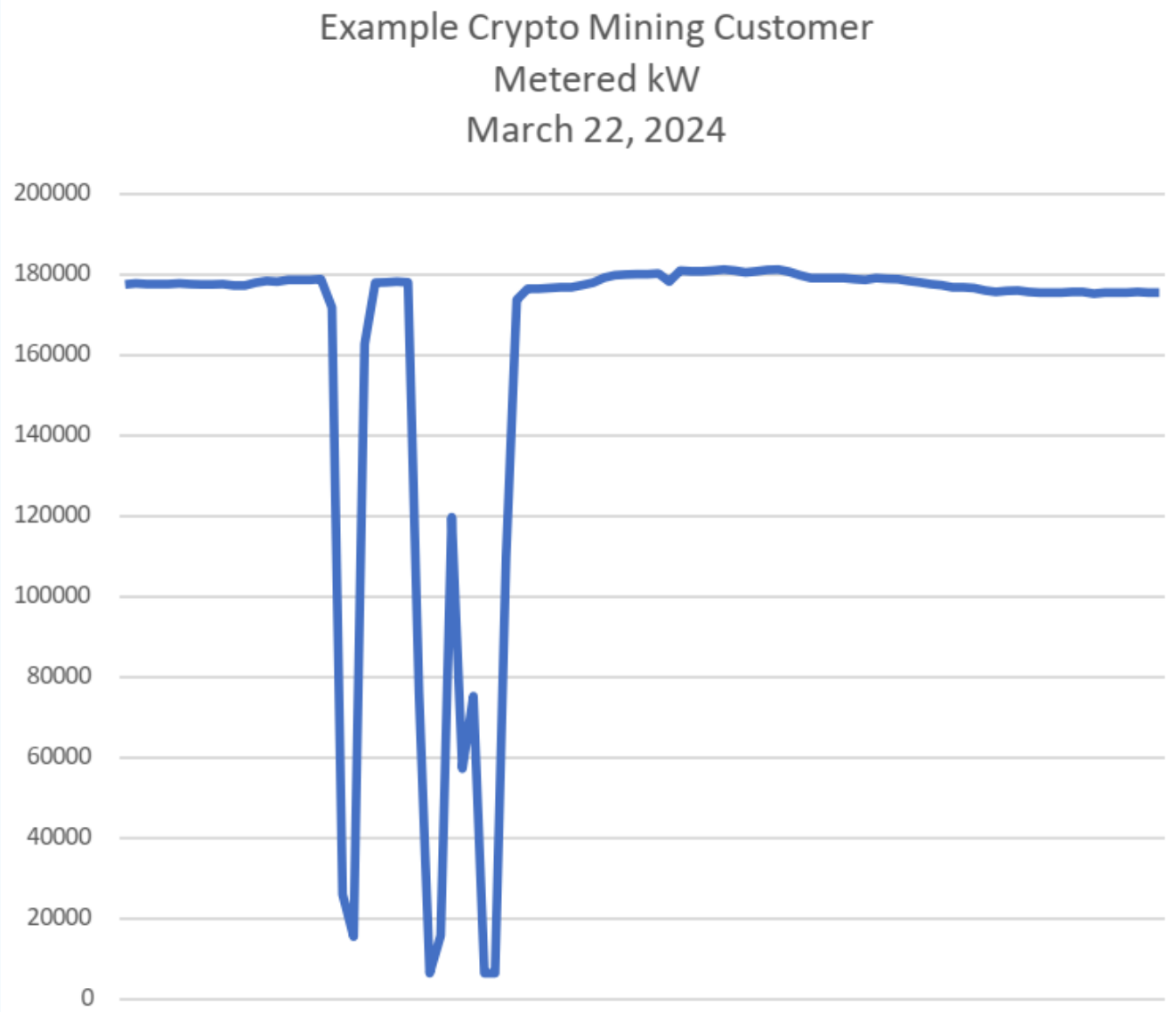
Hyperscale Data Centers Could Represent >50% of Indiana & Michigan Power Revenues



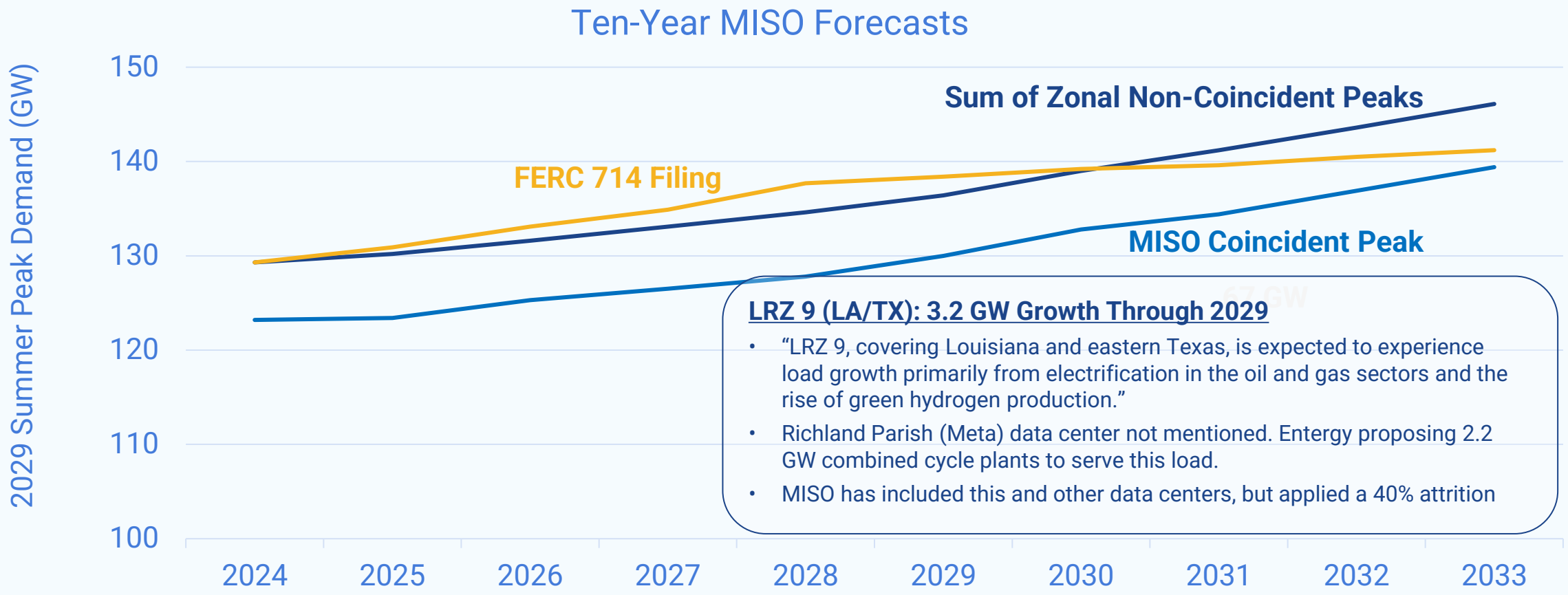
NERC Large Load Reliability Standard

NERC: Large data centers presenting new, unique challenges to grid reliability

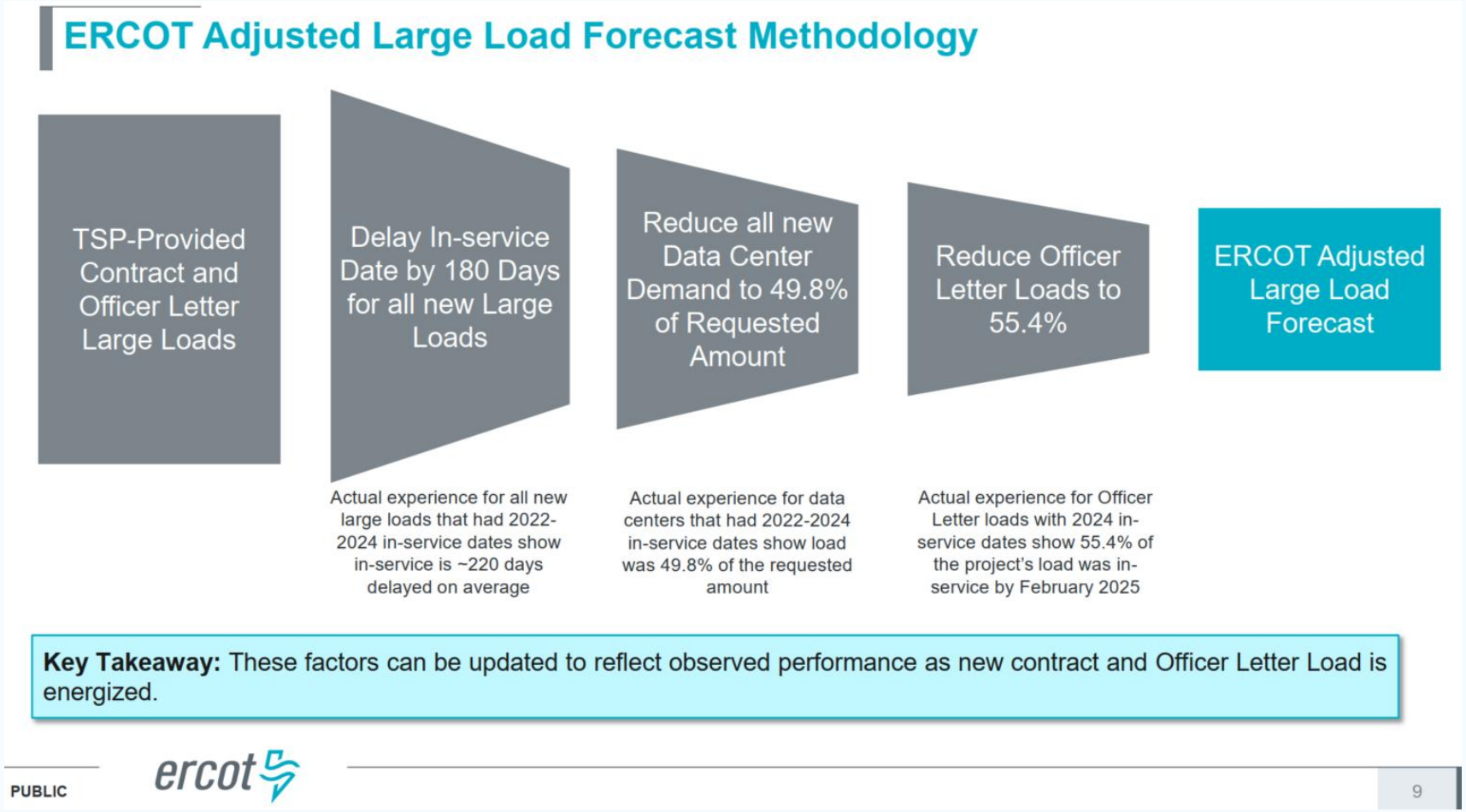
- **Price Response** – especially crypto mining
- **"Ride-through"** – backup power systems can remove large loads from the grid
- **Normal operations** – AI "training models" can vary load in just seconds



MISO's FERC 714 Filing Compared to December 2024 White Paper (Current Trajectory)



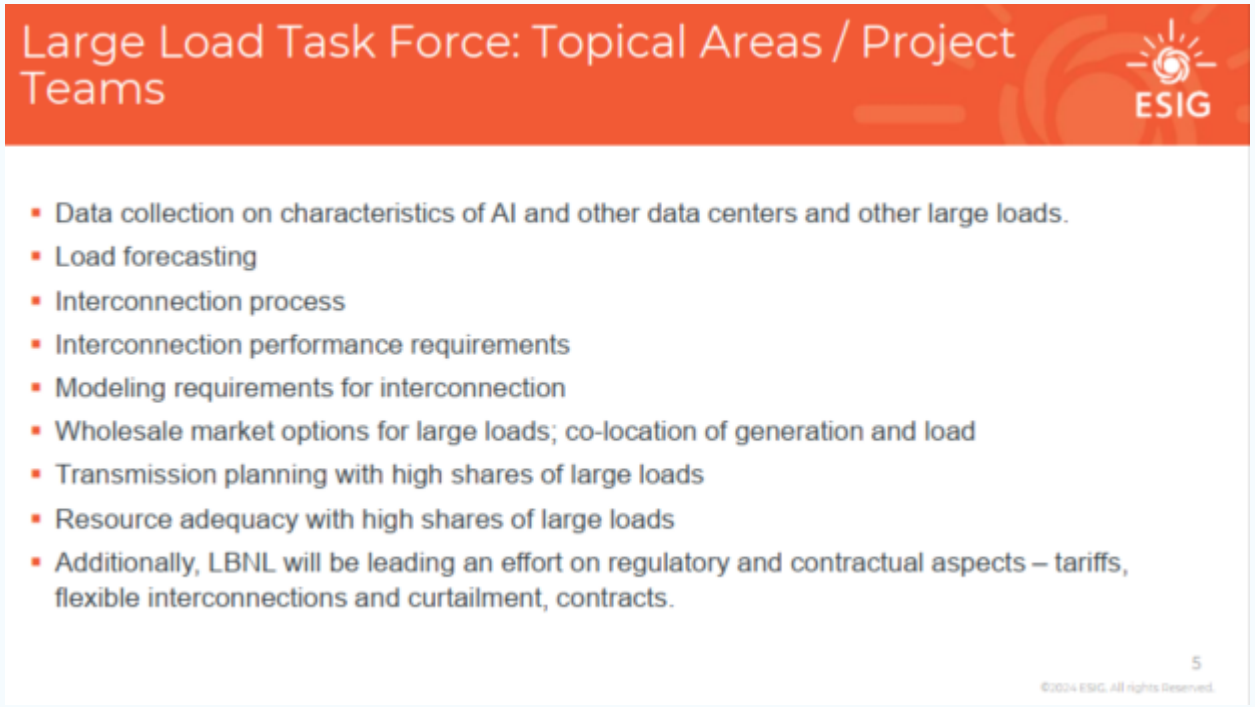
ERCOT's New Large Load Forecast Method



Energy Systems Integration Group (ESIG): Large Load Task Force

I am leading the Large Load Forecasting team for ESIG's LLTF

- Looking for participants (generally, must join ESIG) and presenters
- Collecting existing large load forecasting practices
- Evaluating methods for considering speculative requests and certainty
- Exploring potential for national aggregation of confidential data
- Studying how to address policy issues, such as impact of demand flexibility
- Develop recommended best practices



Thank you!

John D. Wilson
Vice President
jwilson@gridstrategiesllc.com

We offer research and advising on

Founded in 2017, Grid Strategies works on policy to enable decarbonization and an affordable, reliable electricity system.