HEAD OR TAIL WINDS

TREND SETTERS ON NATURAL GAS MARKET

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RBAC User Conference

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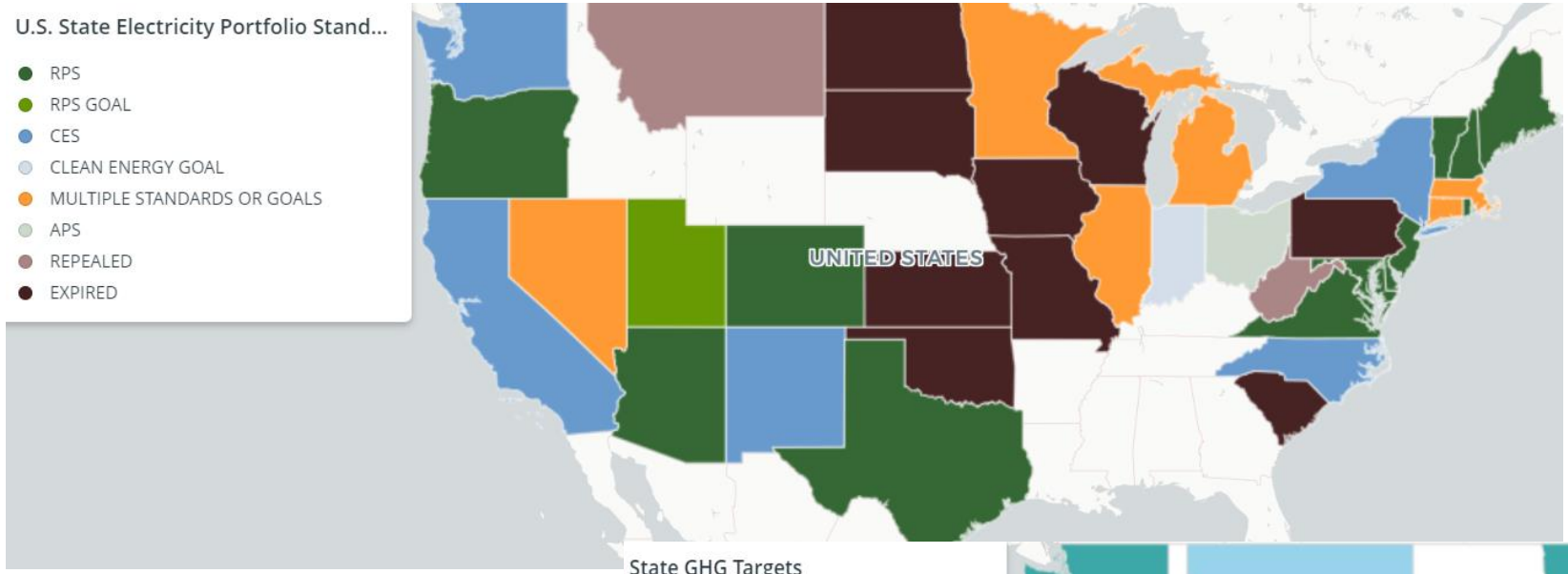
DISCUSSION AGENDA

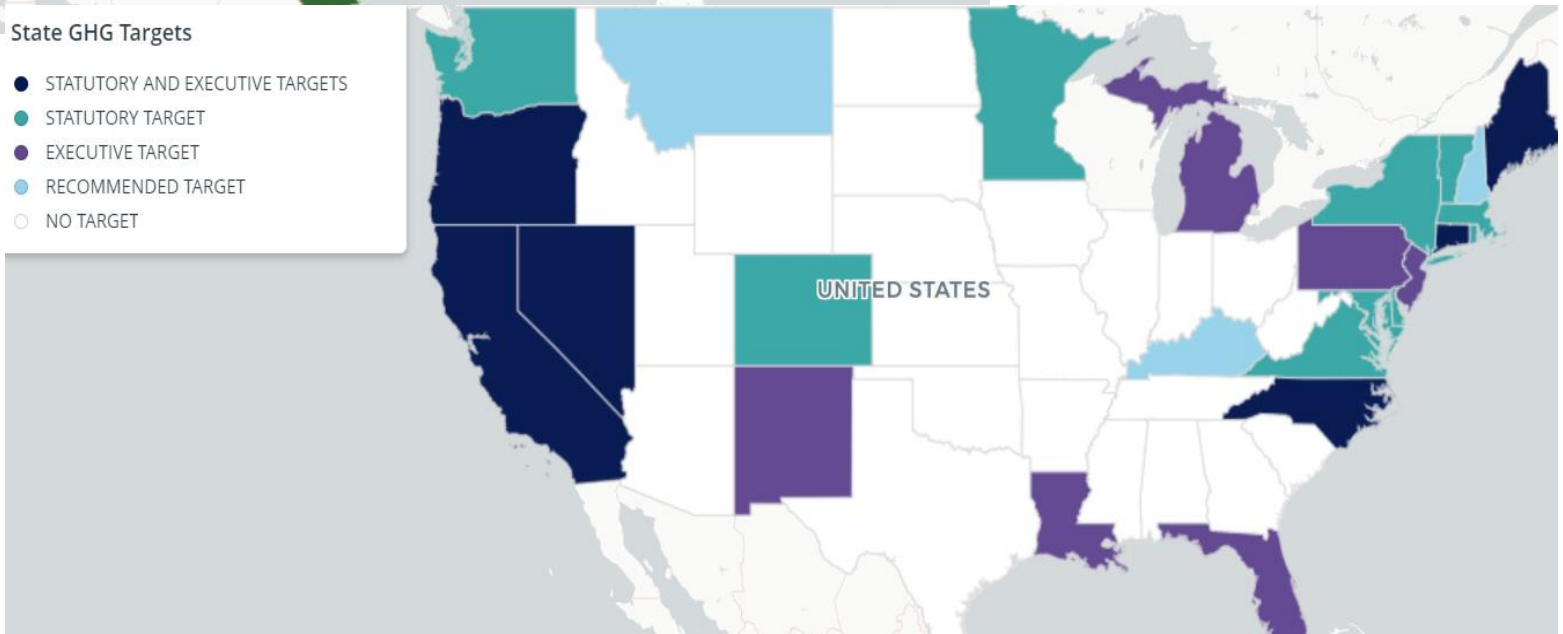
- Decarbonization
- Data Centers
- LNG
- Hydrogen

Source: Center for Climate and Energy Solutions

Decarbonization

ROAD TO DECARBONIZATION



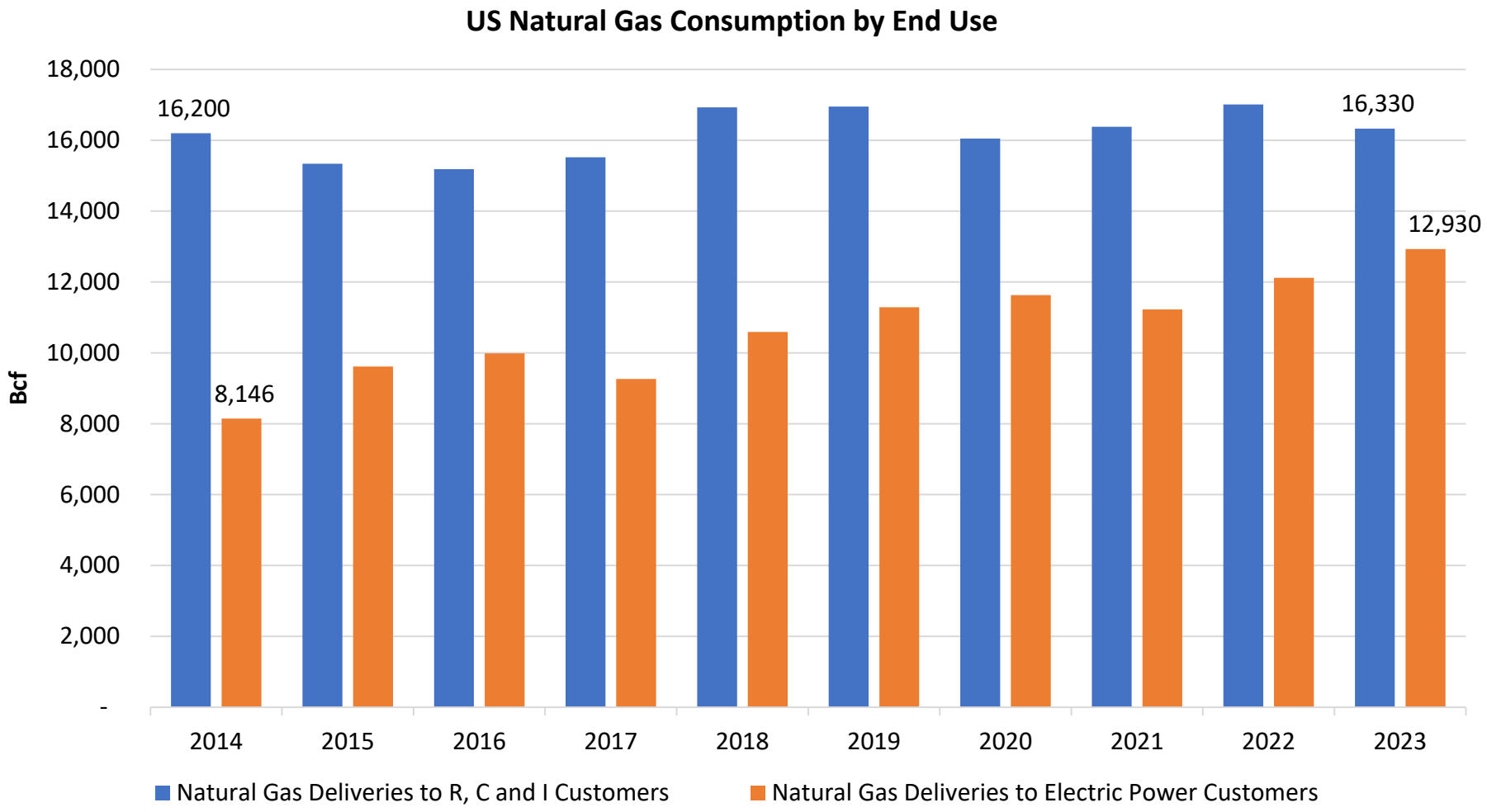


Source: Center for Climate and Energy Solutions

NATURAL GAS UTILITIES DECARBONIZATION

	Regulatory Requirements	Decarbonization Strategies
SoCal Gas	High	Advanced
Northwest Natural	High	Advanced
PSE	High	Advanced
ConEdison	High	Medium
New Jersey Natural	Medium	Medium
Center Point	Medium/Low	Medium
BGE	Medium	Medium
DTE	Medium	Low
Southern	Low	Medium
People's Gas	Low	Low
PECO	Low	Low

NATURAL GAS DEMAND TREND



10-year CAGR

RCI Customers: 0.1%

Electric Customers 5.3%

Source: EIA US Natural Gas Total Consumption

Data Centers

DATA CENTER SEGMENTATION BY USE CASE

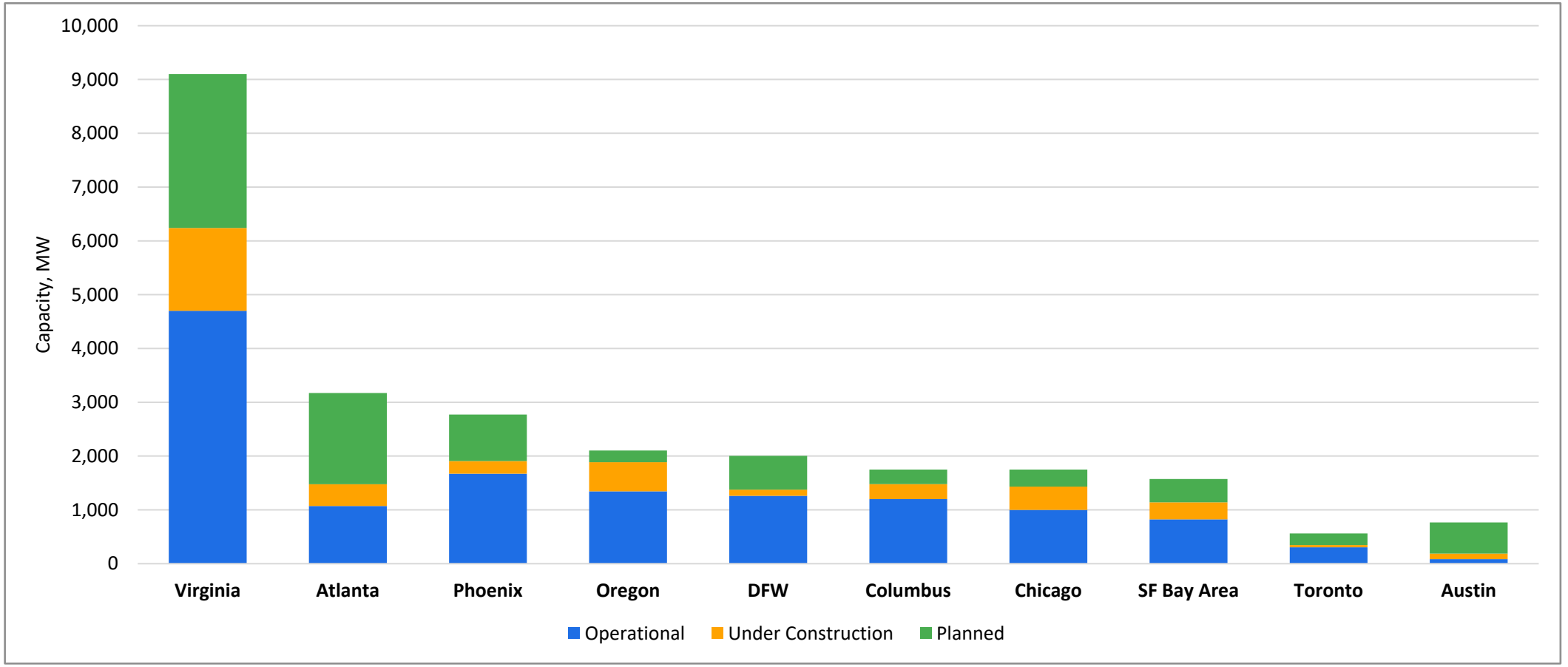
Characteristic	Edge/Micro/Modular	Colocation	Enterprise	Hyperscale
Use Case	Smaller, decentralized facilities, quickly deployed, standard repeatable data center solutions	Rented out space to operate the tenants' own IT equipment: • Retail – rent rack space • Wholesale – rent floor space or the whole building and power	Built, owned, and operated by business for its own use. Most enterprises have a hybrid data center solution of enterprise and colocation.	Provide hyperscale computing historically for cloud services provided by Big Tech or a data center developers developing for hyper-scalers. Some Colocation providers are developing hyperscale data centers.
Size (can vary greatly)	20 - 500 kW	5 MW - 1 GW	5 - 25 MW	40 MW - 1+ GW
Size (building & hardware)	5 - 50 racks	5,000 - 20,000 Sqft	5,000 - 100,000 Sqft	10,000 to 1+ million Sqft 10,000 – 100,000+ Servers
Location	On or near prem	Off-prem	On or off-prem	Off-prem
Customer Type	Small companies, and companies needing local computing	Multiple businesses – varying sizes	Single large business/enterprise	Cloud, web services, AI model trainers, critical infrastructure

DATA CENTER SEGMENTATION BY RELIABILITY

Characteristic	Tier I	Tier II	Tier III	Tier IV
Reliability	99.671% Uptime (28.8 hours down annually)	99.741% Uptime (22 hours down annually)	99.982% Uptime (1.6 hours down annually)	99.995% Uptime (26.3 minutes down annually)
Component Redundancy	None	Power and cooling redundancy (minimum N+1). Spare parts. Cooling backup.	Minimum N+1 with Concurrently maintainable	2N or 2N +1 Fault Tolerant
Backup Power Run Duration	None	None	72-hours of power outage protection	96-hour power outage protection
Typical Customers	Companies with simple use cases	Small to medium-size businesses	Large businesses	Government entities
Trend	Slow growth– Isolated situations and decreasing applicability	Majority of new data centers are a hybrid of Tier 2 / Tier 3	Majority of new data centers are a hybrid of Tier 2 / Tier 3	Limited growth because of cost versus benefit

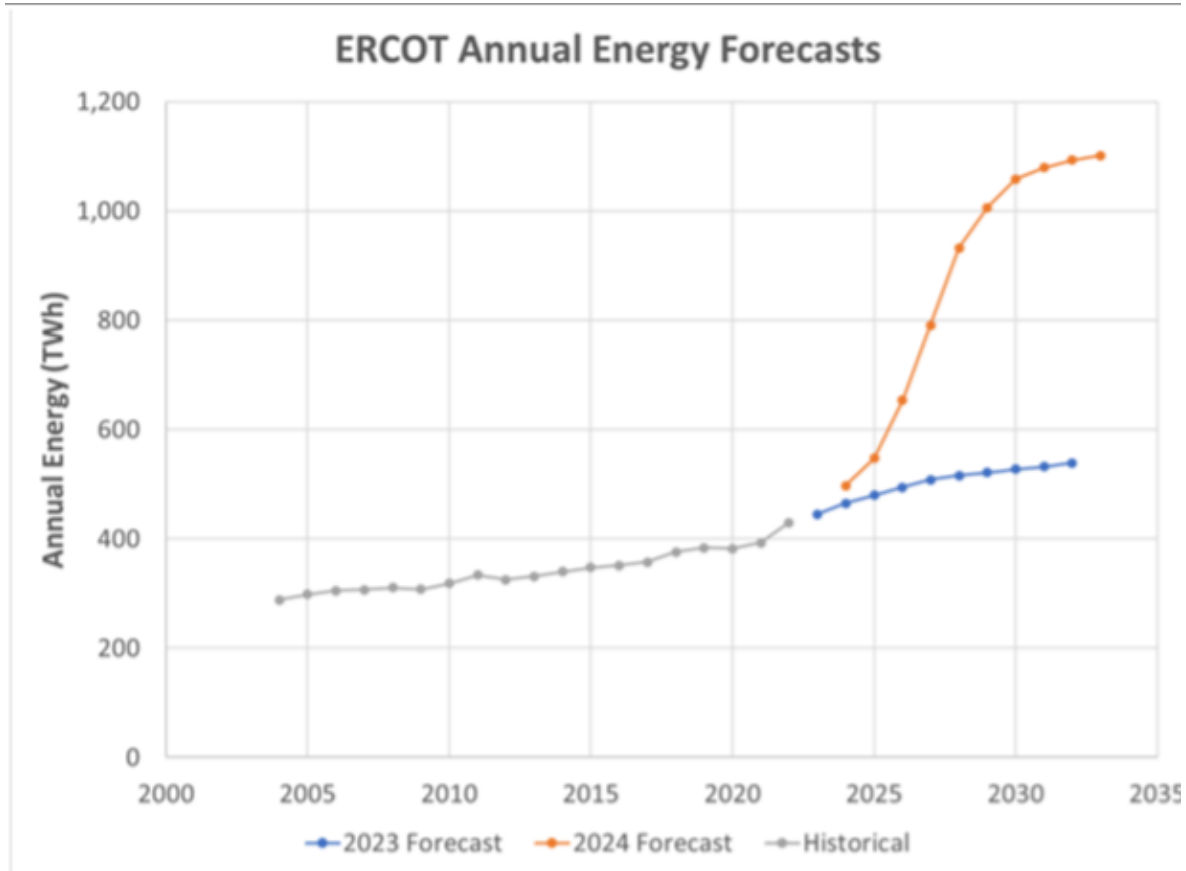
LEADING DATA CENTER GROWTH AREAS

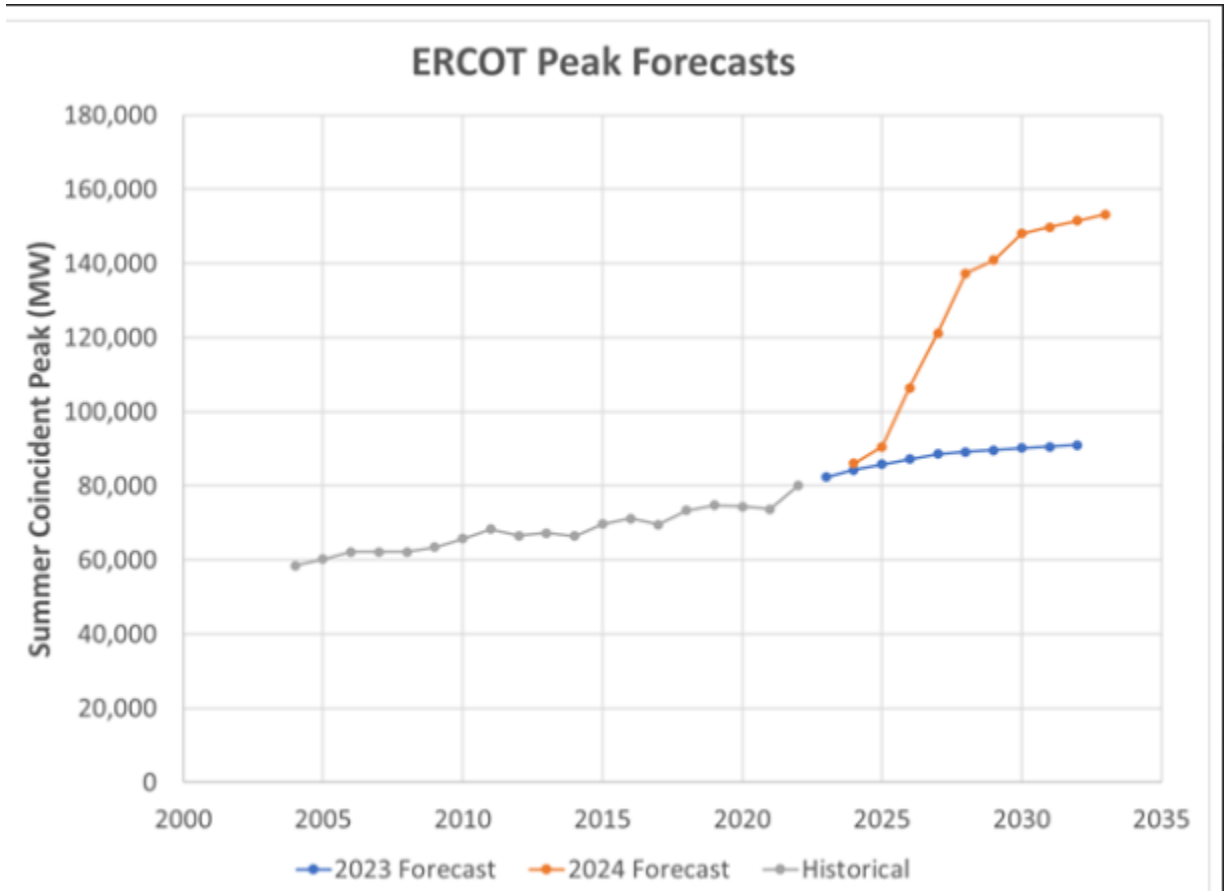
Total Operational, Under Construction and Planned Data Center Capacity by Market, H1 2024



Source: Cushman & Wakefield Research, datacenterHawk, Structure Research

DATA CENTERS DRIVE ELECTRIC LOAD GROWTH - ERCOT

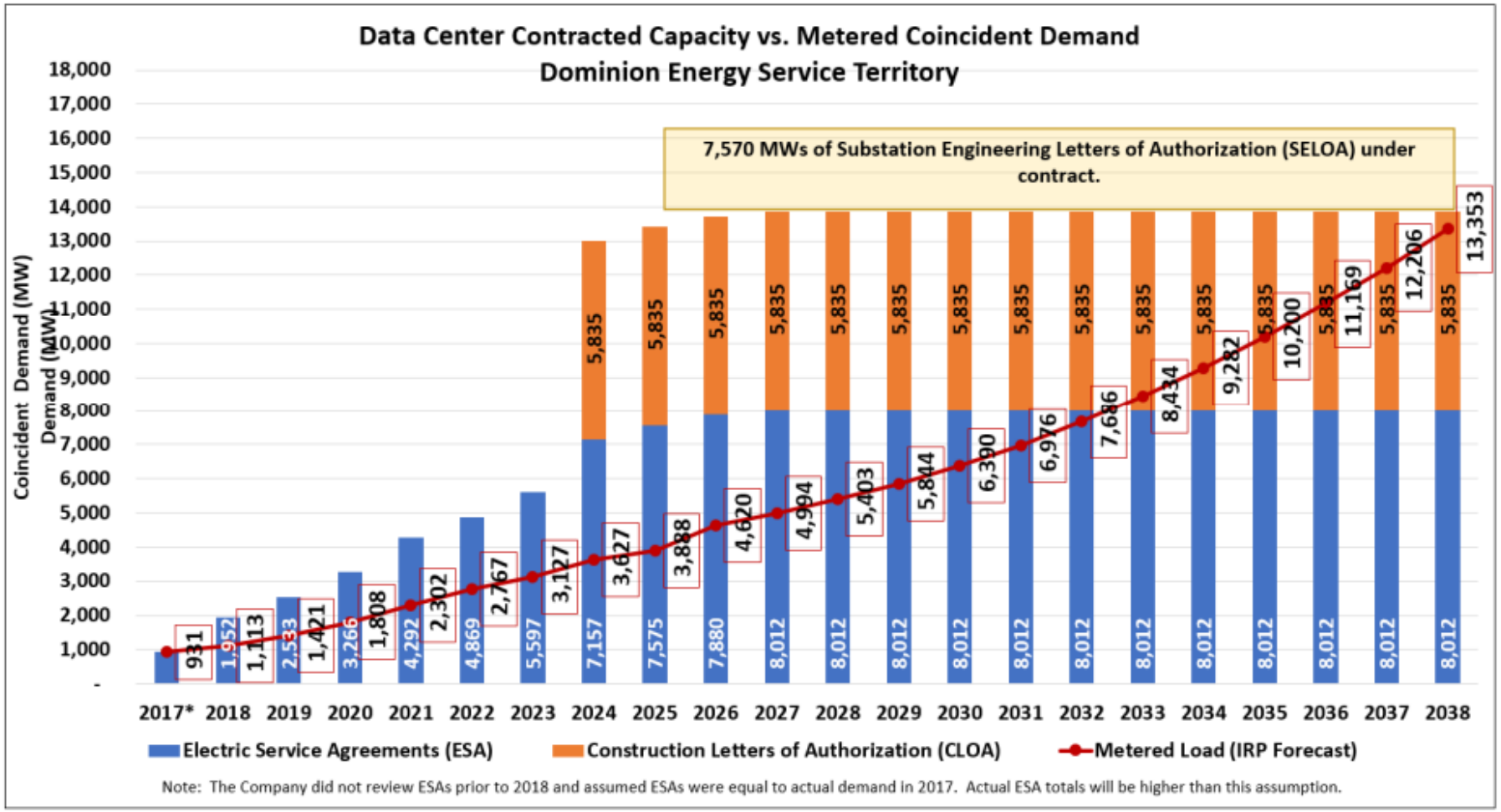




Source: ERCOT Load Forecast

POWER DEMAND GROWTH FOR DATA CENTERS - DOM

Data Center Contracted Capacity v. Metered Coincident Demand (through 2038)



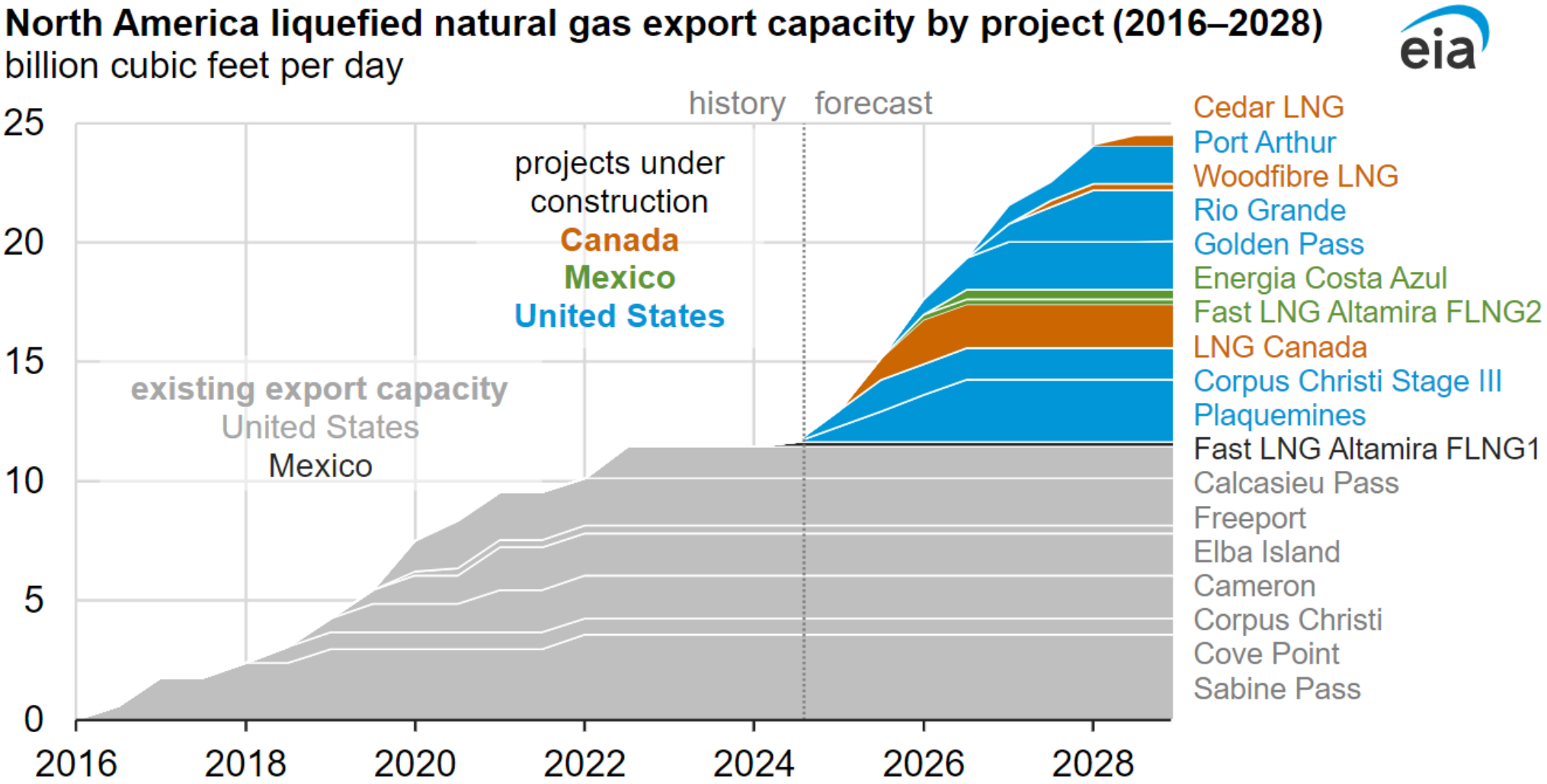
Source: Dominion Energy IRP, Appendix 2A

POWER TECHNOLOGY CHOICE FOR DATA CENTERS

Technology Type	Technology Maturity	Construction Feasibility
Gas	High	Selected Locations
Solar with BESS	High	Hard to Scale
Hydrogen	Medium	Easy
Off-shore Wind	Medium	Location Specific
Nuclear	Low	Easy
Geothermal	Low	Selected Locations
Gas with CCS	Low	Selected Locations/Projects

Liquefied Natural Gas (LNG)

NORTH AMERICA LNG EXPORT CAPACITY



Source: EIA

APPROVED US GULF COAST LNG TERMINALS

Project Name	Project Operator	Design Capacity per Train (Bcf/d)	Number of Trains	Total Proposed Capacity (Bcf/d)
Cameron LNG Train 4	Cameron LNG, LLC	0.89	1	0.89
Lake Charles LNG	Energy Transfer, LP	0.7	3	2.2
Driftwood LNG	Driftwood LNG LLC	0.73	5	3.64
Freeport LNG Train 4	Freeport LNG	0.67	1	0.67
Texas LNG	Glenfarne Group	0.28	2	0.56
Rio Grande LNG	Rio Grande LNG, LLC	0.72	5	3.61
Gulf LNG	Kinder Morgan et al.	0.71	2	1.43
Delfin FLNG	Fairwood Group	0.40	4	1.6

Source: EIA, Magnolia LNG excluded

Hydrogen

IRA 45 V CREDIT AND IMPLEMENTATION GUIDELINES

Lifecycle GHG emission	Applicable % of the credit	Credit range (per kg of H_2)
< 0.45 kg_{CO2}/kg_{H2}	100%	\$3.00 /kg_{H2}
0.45 to 1.5 kg_{CO2}/kg_{H2}	33.4%	\$1.00 /kg_{H2}
1.5 to 2.5 kg_{CO2}/kg_{H2}	25%	\$0.75 /kg_{H2}
2.5 to 4 kg_{CO2}/kg_{H2}	20%	\$0.60 /kg_{H2}

Time Matching

- Electricity generation occurs at a relevant time when the electrolyzer is operating.
- The matching will be annual in the beginning. Starting 2028, it will be hourly.
- The cleanliness of power should be verified by qualifying EACs.
- The power source should have come online not before 3 years before the electrolyzer starts operation.

Additionality /Incrementality

- Additionality would require the clean electricity sourced for hydrogen production to come from (1) new clean generation sources, (2) an increase in the rate of electricity production from existing clean generation, known as uprating, or (3) electricity from existing clean generation that would otherwise not have been produced, known as curtailed electricity.
- Excludes existing GHG emissions-free nuclear power and hydroelectricity.

Deliverability/Regionality

- The DOE identified 13 balancing authorities all over the US.
- An electrolyzer plant must get the power from the corresponding balancing authority.
- Do not consider curtailment energy in one region vs. hydrogen demand in a different region.

Inability to utilize most curtailment power from existing renewable resources

Rising energy costs for hydrogen production using electrolysis

Thank You!

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