

# AI, Energy, & Environment

National Conference of State Legislatures

May 17, 2024

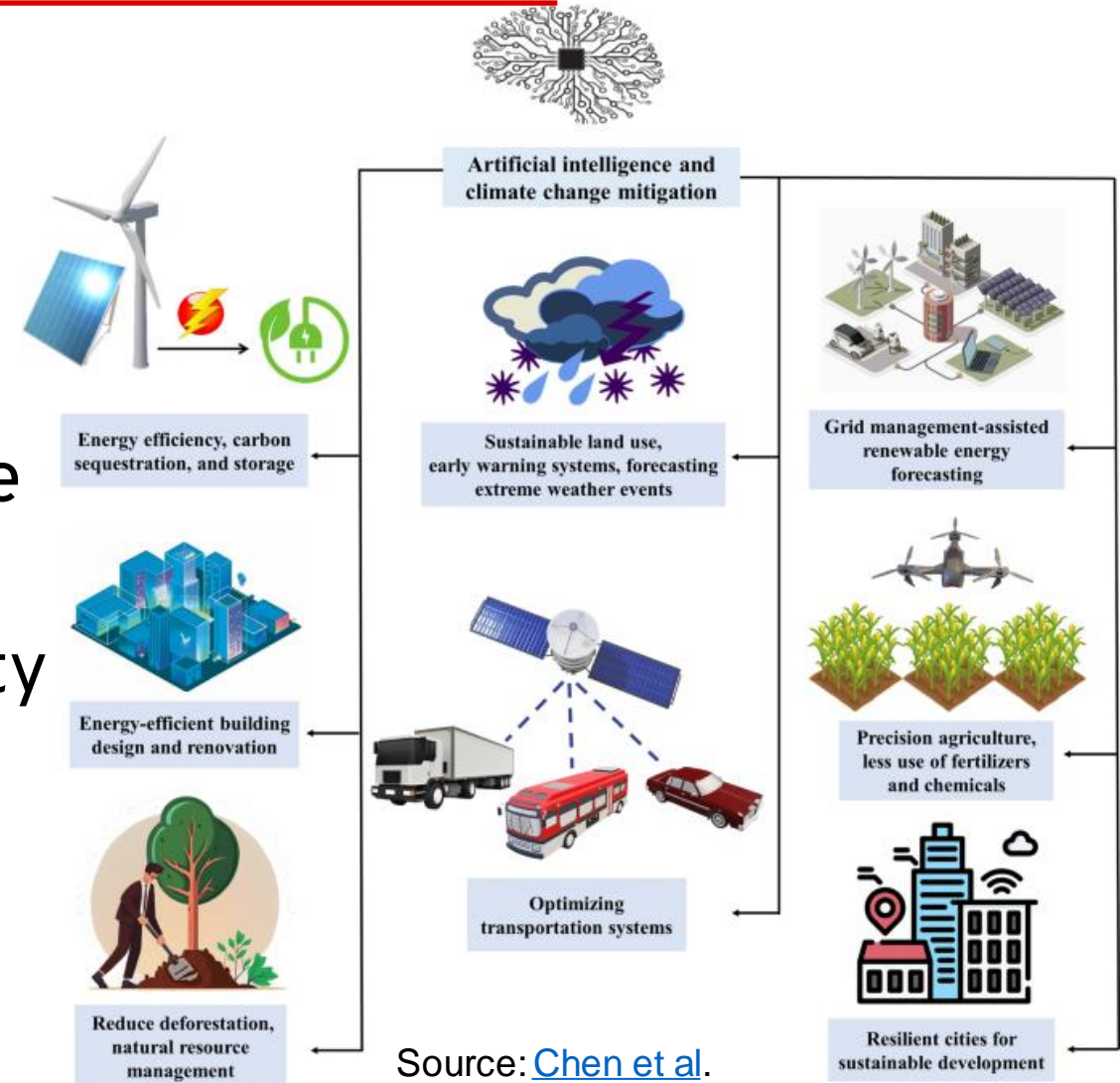
## WHO WE ARE

R Street Institute is a nonprofit, nonpartisan, public policy research organization. Our mission is to engage in policy research and outreach to promote free markets and limited, effective government.



# AI's Green Thumb

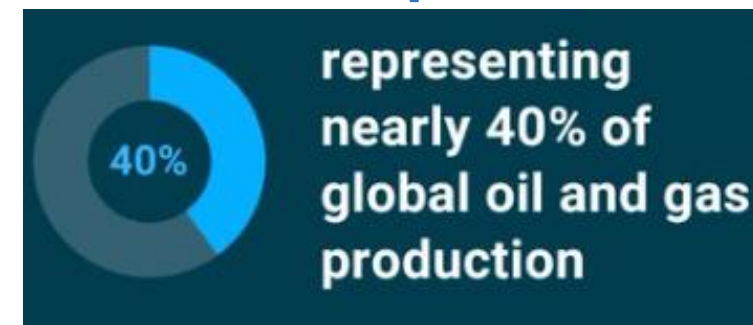
- Resolution
  - Air quality, climate modeling
- Measurement
  - Product/supply chain lifecycle
- Optimization
  - Productivity lwr envir. intensity
  - E.g., agriculture, energy & transport
- Need: granular, quality data



# Methane Example



**120 Companies**



**Improved emissions data will accelerate action and allow for tracking of progress against commitments.**

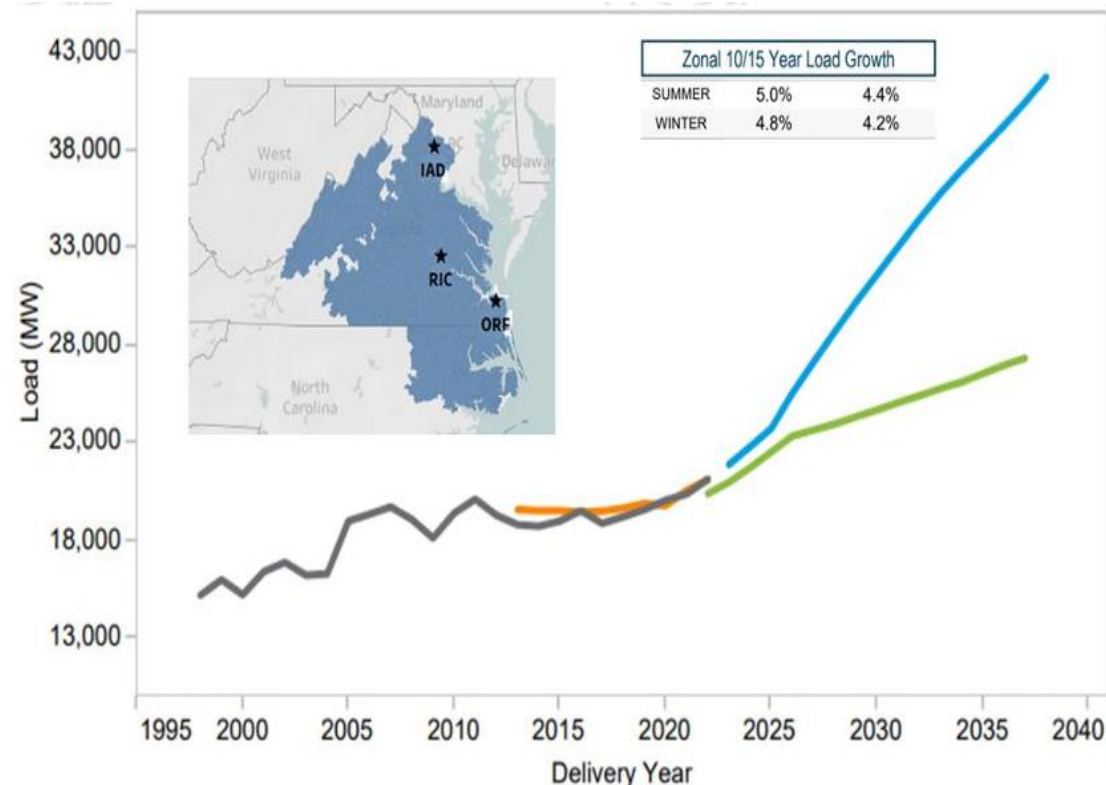


# AI Energy Consumption

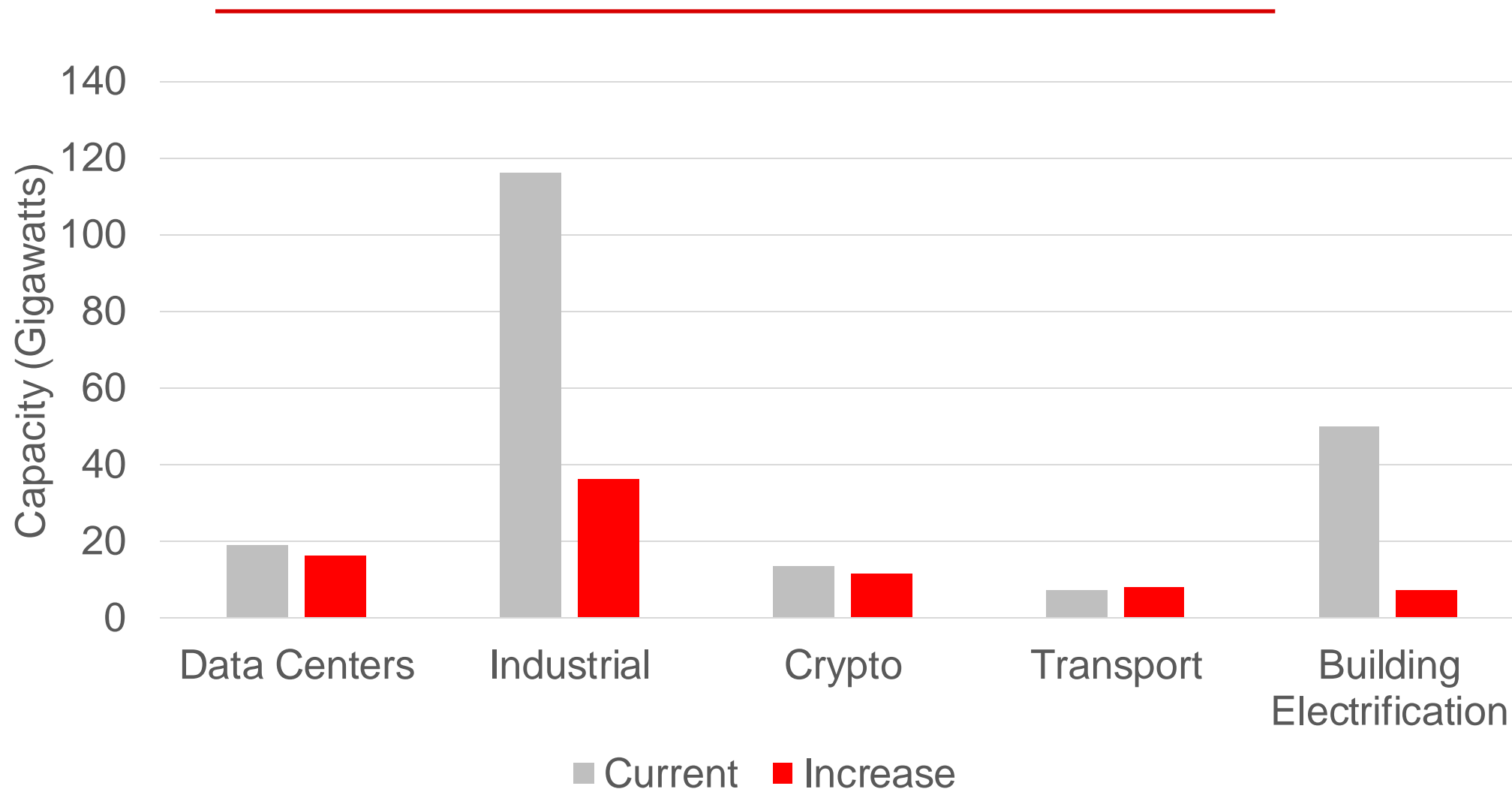
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- Critical unknowns: size, shape & location
  - If on-peak in saturated areas → infrastructure challenge
  - If off-peak in areas w/ slack → easily accommodated
- Key: AI just one player in load growth resurgence

**PJM (Mid-Atlantic) 2023 Load Forecast  
Data Center Sensitivity**



# U.S. Demand Increase: 2030 Forecast



# Load Growth Readiness

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- Forecast better
  - Shape, location & AI efficiency gains
- Historically high barriers to supply
  - Costly but manageable w/ flat demand
  - Costly & reliability problem w/ growth
- Key regulatory improvements
  - Permitting & siting
  - Generator interconnection
  - Power supply competition
  - Transmission & distribution (T&D)

***"The inability to invest in infrastructure, whether that's gas infrastructure or transmission, is really going to cripple our ability to reach any of the emission reduction targets we have."***

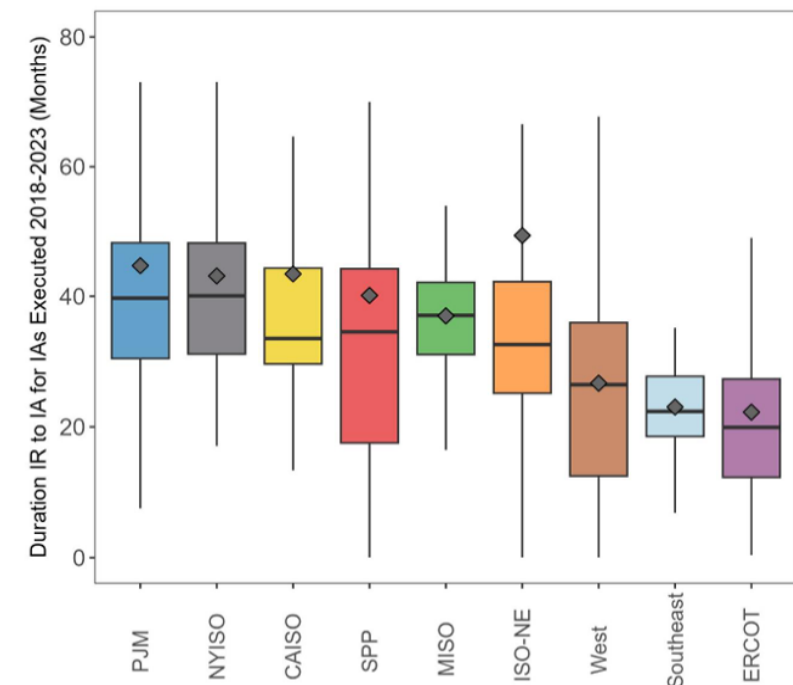
- Jim Robb, NERC CEO  
(US & Canadian grid reliability authority)

## Planned/In Progress Energy Projects Requiring Permitting

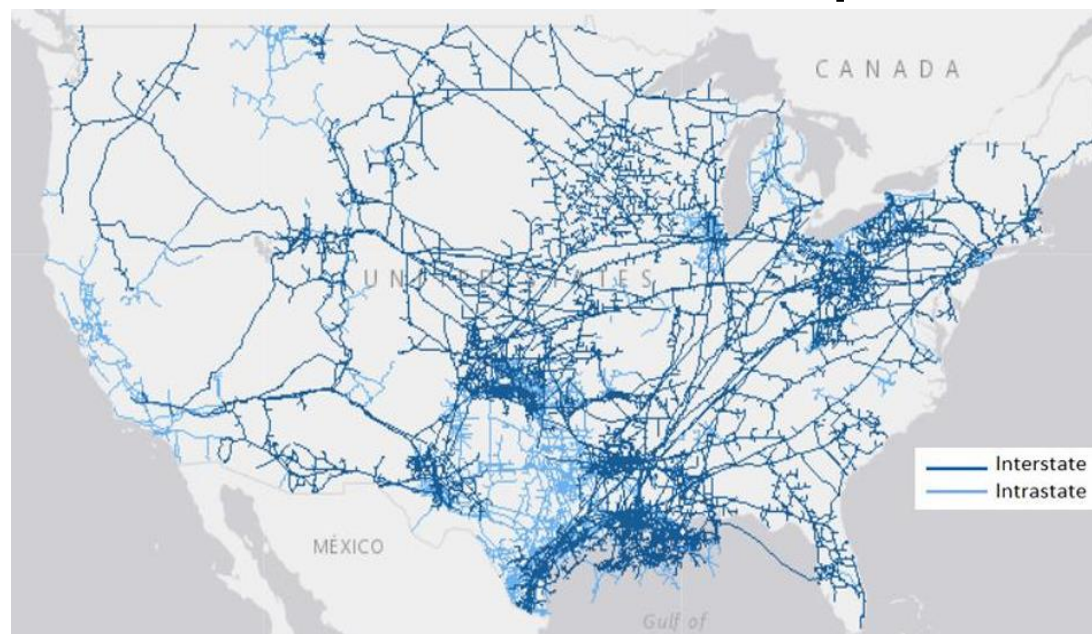


# Constrained Supply

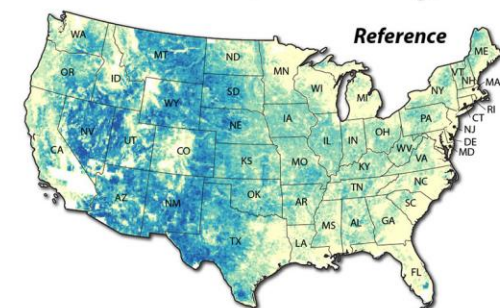
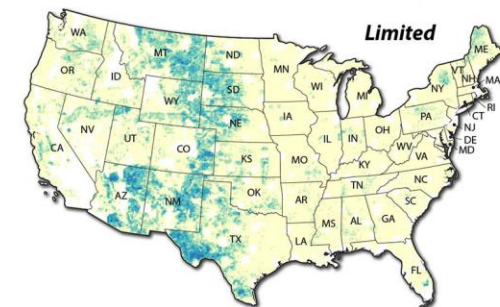
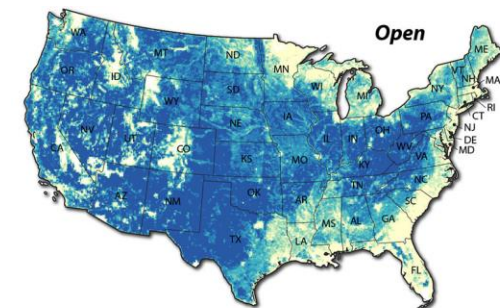
## Interconnection Delays



## Natural Gas Transmission Pipelines



## Wind Ordinances



### Capacity (MW)

- 350 to 400
- 300 to 350
- 250 to 300
- 200 to 250
- 150 to 200
- 100 to 150
- 50 to 100
- <50

○ Excluded area

Sources: [LBL](#), [EIA](#), [NREL](#), [R Street](#)

# Monopoly Energy Woes

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**Problem:** utility opposes capital-efficient T&D

**Solution:** proper economic regulation

**Problem:** utility refuses service (data centers, crypto)

**Solution:** enforce  
non-discriminatory service

19. As explained by AEP Ohio witnesses Ali and Kelso, in March of 2023, AEP

Ohio implemented a temporary moratorium or pause on taking new service requests in Central

Ohio from data center customers and executing agreements to move forward with serving that

load. This moratorium was taken to allow AEP's transmission planning group time to study

the impacts that the data center load requests will have on the electrical delivery system in

Central Ohio to ensure that the grid can reliably serve the new and existing load. As more

analysis has been done, AEP is resolute and unwavering in its conclusion that an updated set of

terms and conditions for retail service to data center customers is needed in order to move

forward with capacity expansion plans on a just and reasonable basis. [Filing link](#)

# Freer Energy Markets Do Best

**Newsweek**

## Who's the Greenest State of All? Texas!

### Lone Star is Load-Ready

- Superior competition
- Smooth permitting/siting
- Efficient interconnection
- Solid transmission planning

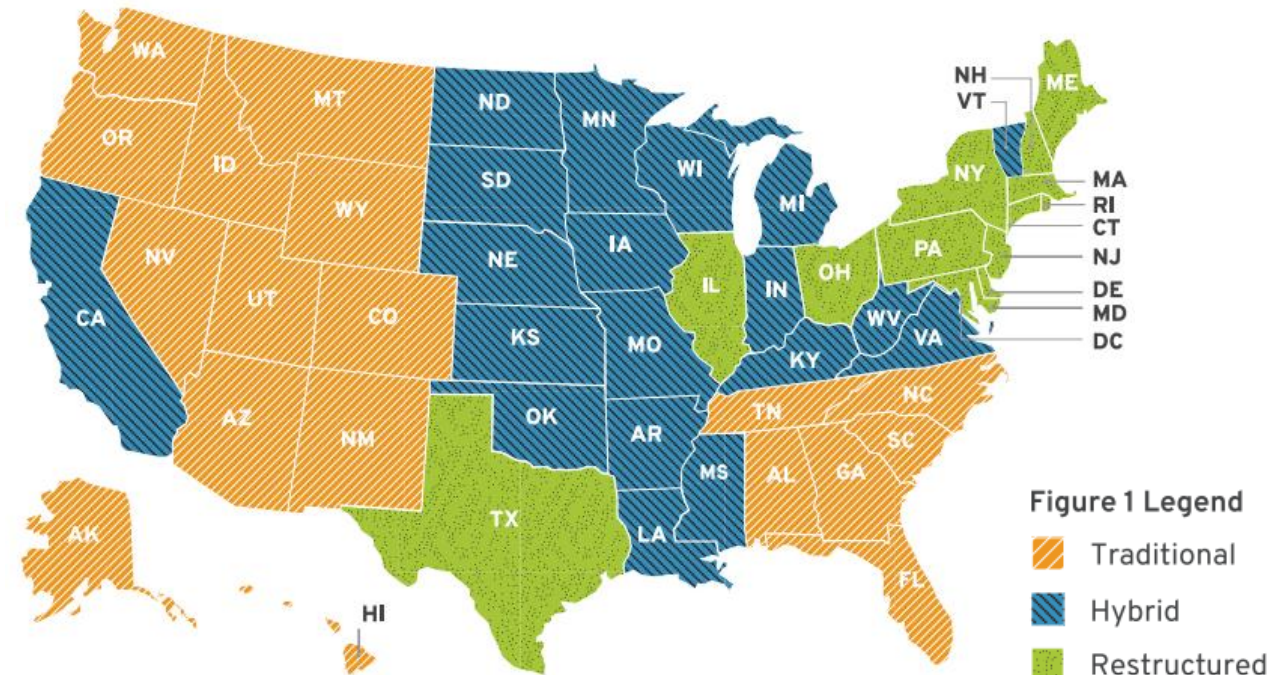


Source: [Newsweek](#), R Street

*San Antonio Express-News*

ERCOT enters 'new era' as grid demand is poised to double by 2030

**Figure 1:** State Status by Electric Paradigm



# Thank you!

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