GridCARE

Unlocking Existing Grid Potential in Utah
Utah Public Service Commission Briefing

March 16, 2026

GridCARE

"Economic prosperity, quality of life, and national security are all downstream of our ability to deliver **affordable and abundant energy.**"

– Governor Cox

Utah has a rare opportunity to lead in AI and energy growth

Utah is attracting **major AI infrastructure demand.**

Utah's **Operation Gigawatt** targets **doubling Utah's power production within 10 years** through transmission upgrades, diverse generation, policy reforms, and innovation investments.

That creates new urgency to **use the existing grid more efficiently** while new infrastructure is built.

The top 30 US states for current & planned data center capacity

Source: Cleanview
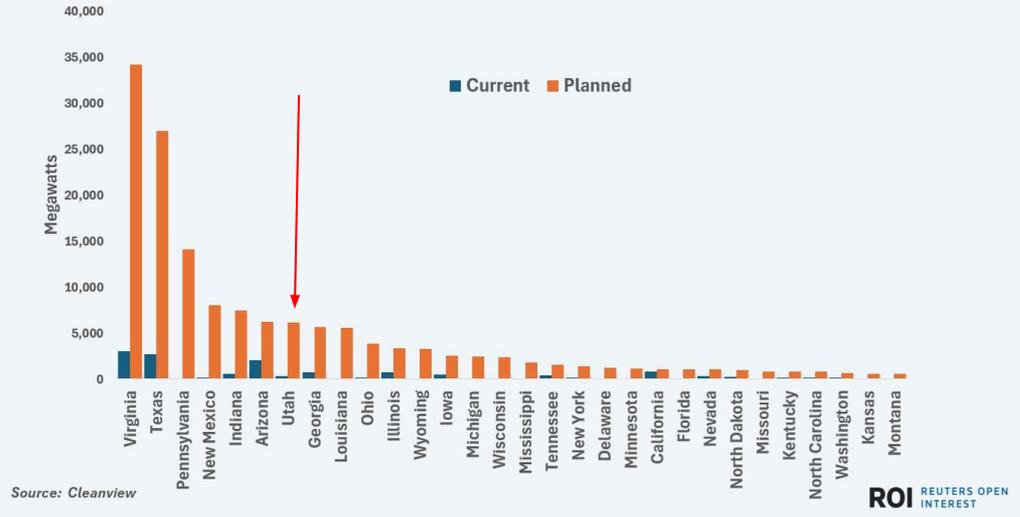
The question becomes how to connect new load faster without compromising reliability or affordability.

Utah policy is creating a path to higher grid utilization

SB 132 and HB212 signal support and an opportunity to optimize grid utilization.

HB 212

Requires utilities to analyze advanced transmission technologies (GETs) when proposing traditional upgrades.

- Evaluate **potential for increased capacity** for new energy resources or improved transmission capacity and efficiency.
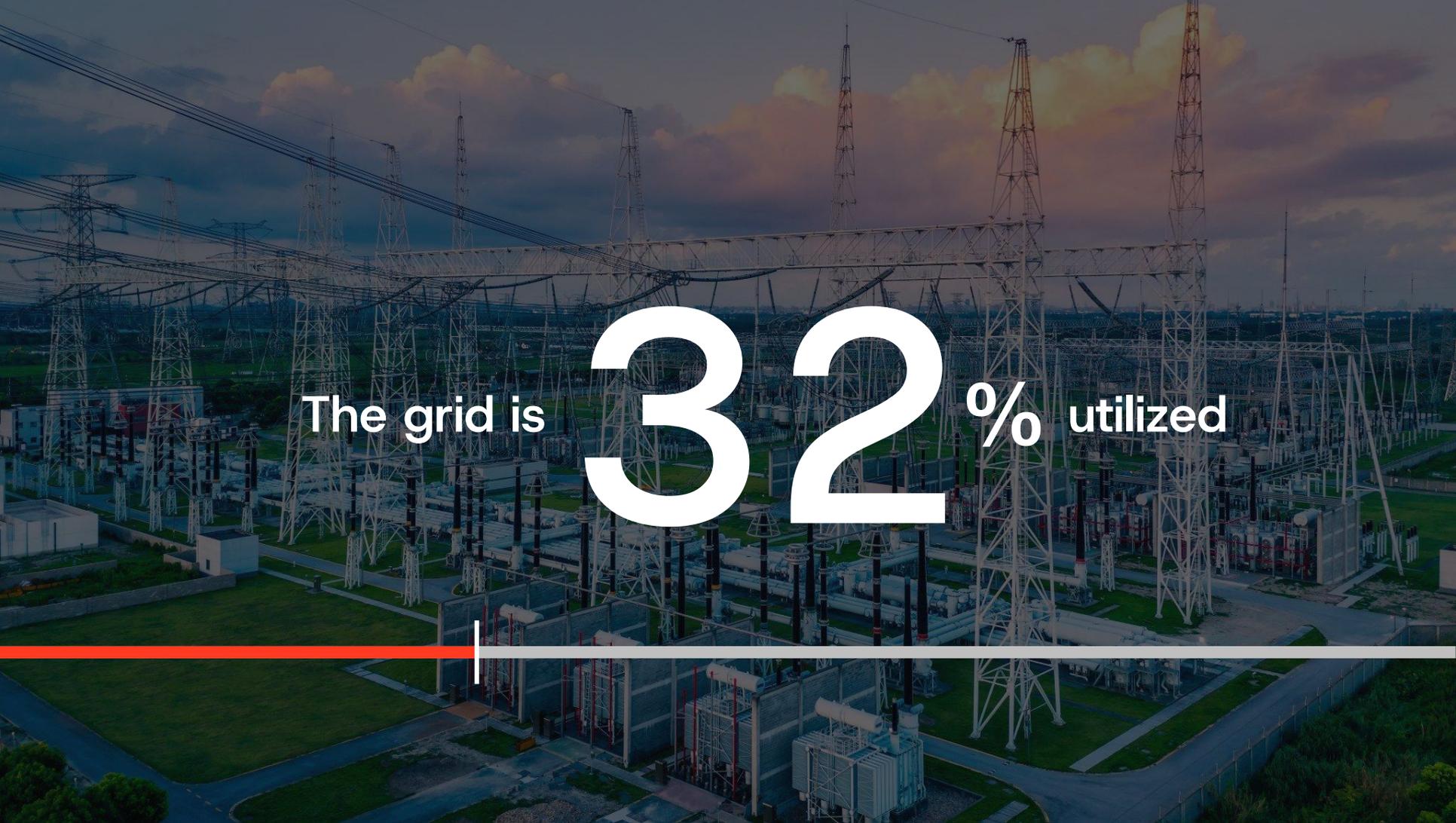- Requires cost–recovery if deemed cost–effective.

SB 132

Modernizes how large loads receive service while protecting native customers allowing large loads to:

- Receive service from qualified utilities (all services or transmission only); or
- Create closed private generation systems operating as BTM
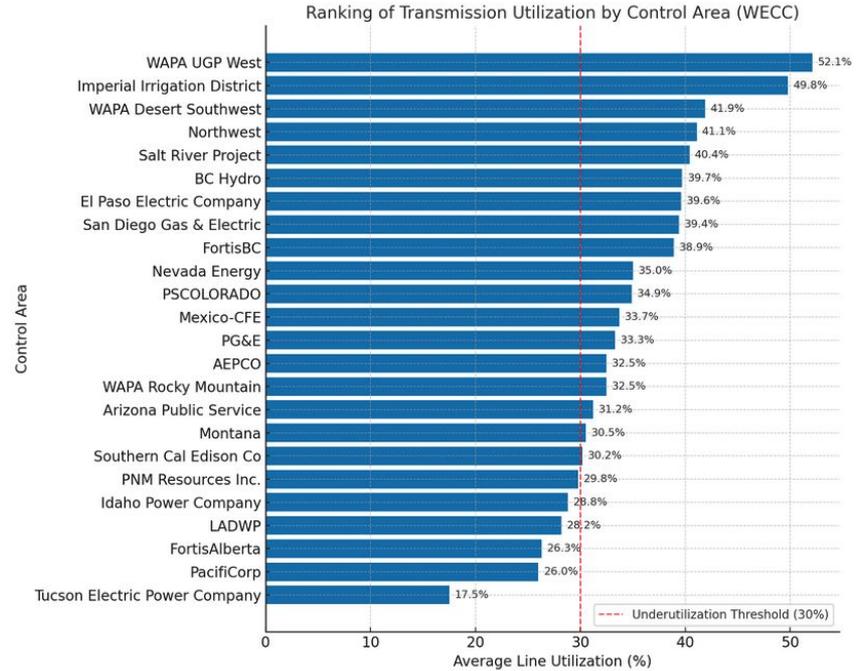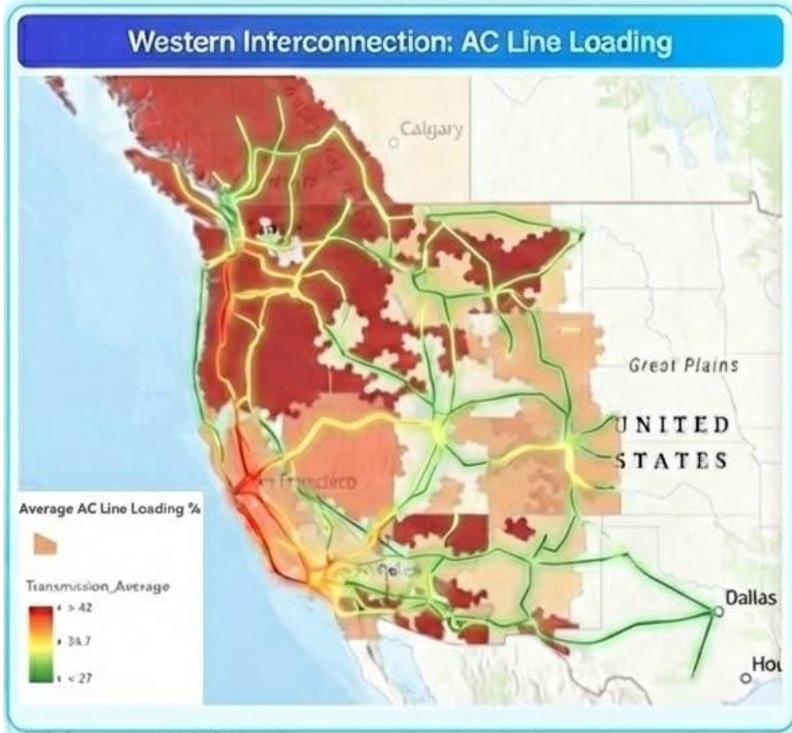- **Directs the PSC to explore a framework for flexible large load interconnections**

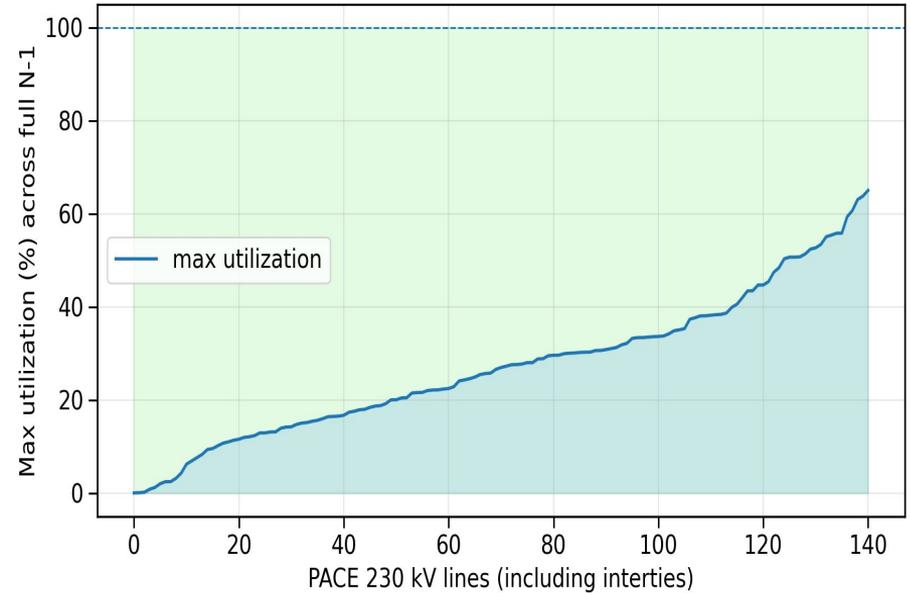# Grid Utilization & GridCARE Case Study

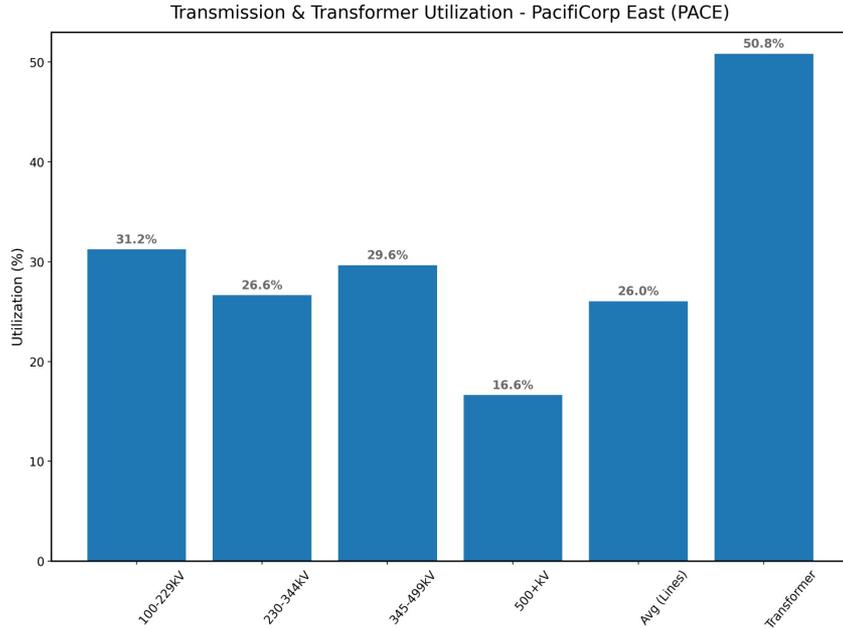The grid is **32**% utilized

The transmission system has a huge amount of untapped capacity

Western Interconnection: AC Line Loading

Average AC Line Loading %

Transmission_Average
- > 42
- 34.7
- < 27

Ranking of Transmission Utilization by Control Area (WECC)

Control Area	Average Line Utilization (%)
WAPA UGP West	52.1%
Imperial Irrigation District	49.8%
WAPA Desert Southwest	41.9%
Northwest	41.1%
Salt River Project	40.4%
BC Hydro	39.7%
El Paso Electric Company	39.6%
San Diego Gas & Electric	39.4%
FortisBC	38.9%
Nevada Energy	35.0%
PSCOLORADO	34.9%
Mexico-CFE	33.7%
PG&E	33.3%
AEPCO	32.5%
WAPA Rocky Mountain	32.5%
Arizona Public Service	31.2%
Montana	30.5%
Southern Cal Edison Co	30.2%
PNM Resources Inc.	29.8%
Idaho Power Company	28.8%
LADWP	28.2%
FortisAlberta	26.3%
PacifiCorp	26.0%
Tucson Electric Power Company	17.5%

Underutilization Threshold (30%)

Few bottlenecks limit overall grid utilization

Transmission & Transformer Utilization - PacifiCorp East (PACE)

Using AI to increase grid utilization

GridCARE's proprietary AI models extract more capacity by optimizing across quadrillions of scenarios

GridCARE studies all scenarios across all locations, with all multiple outage combination scenarios
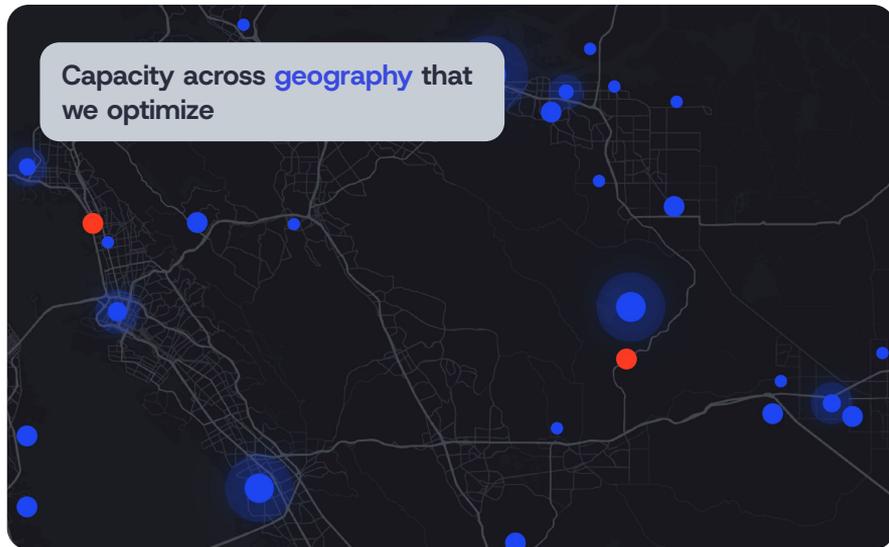
GridCARE analyzes all hours and 20+ flexibility solutions to manage the grid in real–time

Capacity across **geography** that we optimize

Unutilized capacity over **time** that we unlock
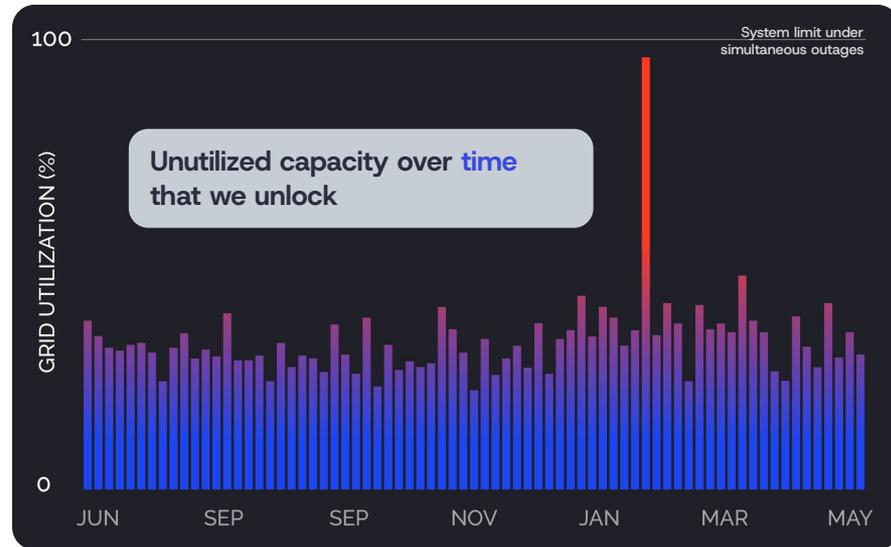
Analyze 10^4 x 10^4 monitored contingencies x 8760 hours/year x 10 years x 100 locations x 25 strategies = 21 quadrillion scenarios (10^{16})

400 MW unlocked in Hillsboro eight years ahead of schedule

"We are really excited about our partnership with GridCARE. Right now we have **80 MW unlocked by 2026, and 400 MW by 2029**.

GridCARE capabilities to process enormous amounts of data, use modern AI and computational power [of cloud] to account for new technologies such as batteries, and dynamic ratings **exceed any other capabilities** available."

Portland General Electric

Maria Pope, CEO
Portland General Electric (NYSE: POR)
October 31, 2025 Earnings Call

Aligned
Adaptive Data Centers

Calibrant

$10B value to data centers

We have the data, technology, and tools needed

Utilities are ready

Once–in–a–lifetime growth opportunity
AI driving a new era of power demand, with data center load set to 2–3x by 2028 (DOE)

Affordability is a priority
Large load–tariffs protect native customers

Increased data and visibility
DERMs, battery storage integration, and grid modernization provide foundational data and capability

Distribution–level adoption
NY FICS, PG&E Flex Connect, VA CapFlex programs offering non–firm interconnection

Technology is proven

Many flexible assets deployed at scale
Battery, VPPs, DLR, turbines are already deployed

AI loads becoming more flexible
AI training can pause, inference can shift easily

Orchestration is proven
AutoGrid managed 8 GW across 20 countries

Cloud and AI computational power
Analyze quadrillions of scenarios, impossible three years ago

Regulatory tailwinds

National security priority
DOE FERC ANOPR directive and recent PJM non–firm transmission service directive, SPP HILLS approval & CHILLs consideration

State action accelerating
VA grid utilization legislation, TX (SB6) flexibility prioritization requirement

EPRI, NARUC, Rate proceedings
33 states acted in 2025; 60+ tariffs in progress

AI and grid physics can find, unlock, and operate new capacity at scale

Rethinking interconnection

TRADITIONAL INTERCONNECTION

> Can we serve 100MW new load at this POI?

Binary yes/no
Large upgrades

FLEXIBLE POWER ACTIVATION

> How many hours can this POI serve 50MW, 100MW, 150MW?

50MW: 8760 hrs/yr
100MW: 8600 hrs/yr
500MW: 8400 hrs/yr

Objective: Create capacity and increase utilization using flexibility

Increasing grid utilization creates a bridge to Operation Gigawatt

AFFORDABILITY

5% customer rate reduction enabled by connecting 1 GW of data centers

RESILIENCE

$1.3B CapEx investment for grid upgrades without raising rates (with 1 GW addition)

ENERGY SUPER DOMINANCE

Faster data center development enables **Utah AI leadership** and new revenue to invest in innovation

ECONOMIC GROWTH

Bringing on data centers more quickly delivers **jobs and tax base**

AI Data Centers as Engines of Affordability and Capital Investment

A quantitative framework for how utilities can turn the AI energy boom into affordability, investment, and national competitiveness

AI data centers represent the most significant opportunity for grid economics in a generation.

Source: *AI Data Centers as Engines of Affordability and Capital Investment,* GridCARE, 2025.

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