

Distributed Energy

Facing today's challenges while building for the future

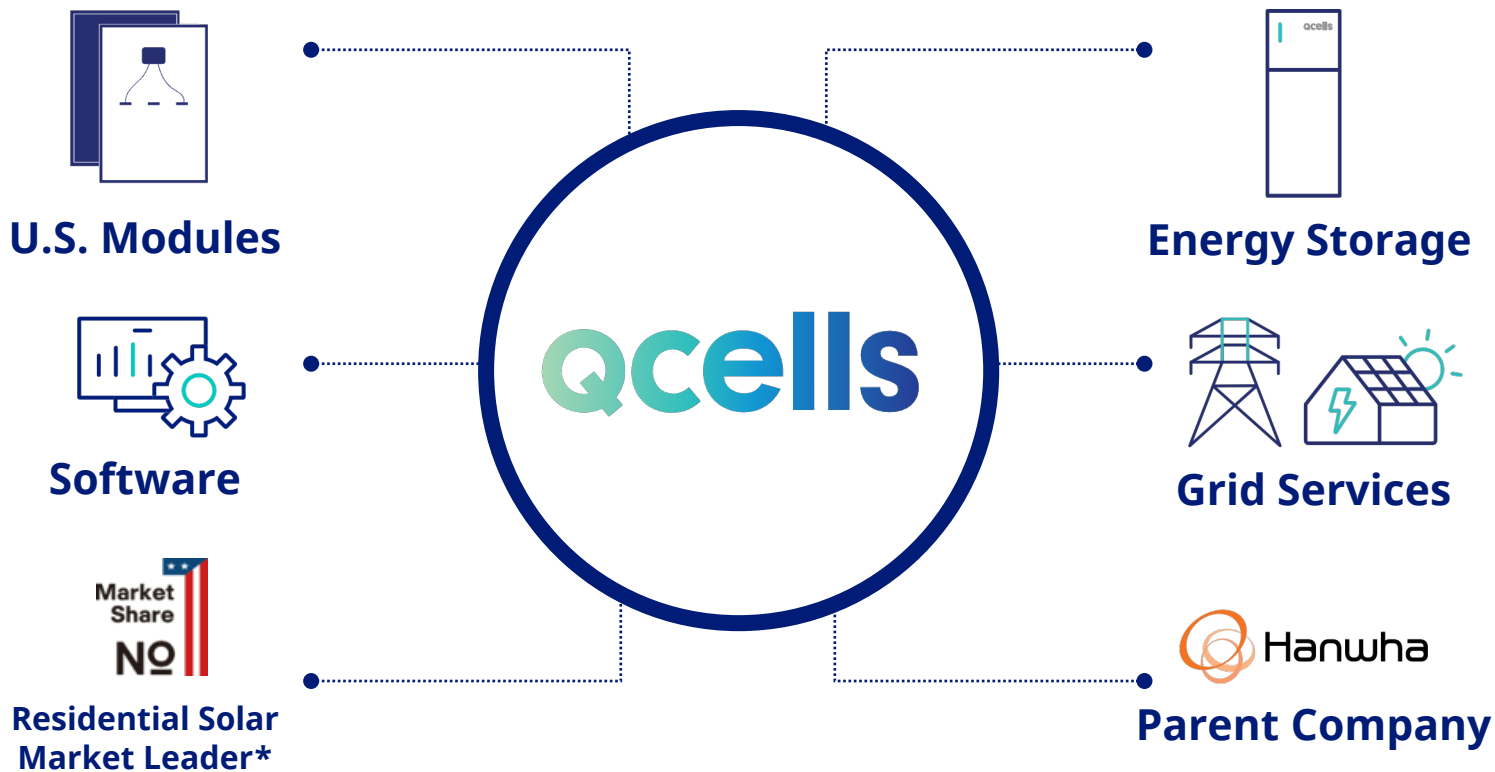
Danielle Merfeld, Global Chief Technology Officer, Qcells

pv magazine USA Week 2025 | October 30, 2025



qcells

From Solar Manufacturer to Clean Energy Technology Leader



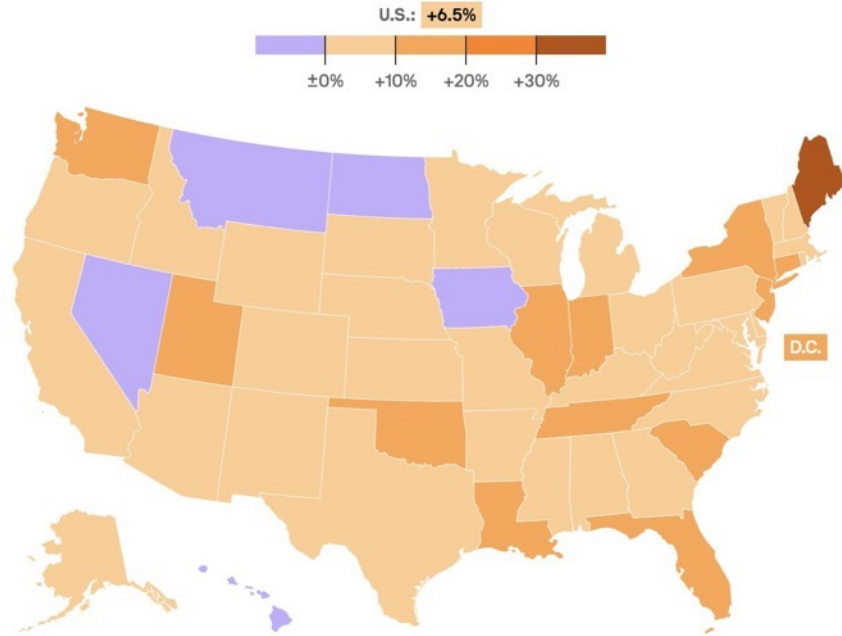
*Wood Mackenzie Power & Renewables US Distributed Solar Leaderboard

An aerial photograph of a school campus. In the foreground, three large, curved solar panel arrays are installed on a grassy area. To the right, there is a school building with a modern design, a basketball court, and a parking lot filled with cars. The background shows a mix of green fields and some residential or commercial buildings on a hillside.

The Case for Distributed, American Manufactured Energy

Energy Costs are Skyrocketing

Change in average residential electricity prices from May 2024 to May 2025



Data: [U.S. Energy Information Administration](#); Map: Alex Fitzpatrick/Axios



Data Center Ramp-Up



Electrification



Weather Mitigation

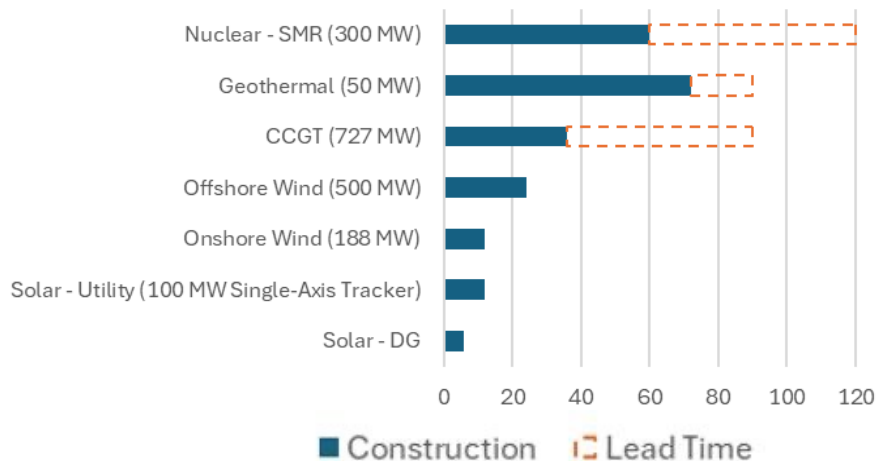


Grid Infrastructure Updates

Distributed Energy Saves Time and Money

Fastest Time to Power

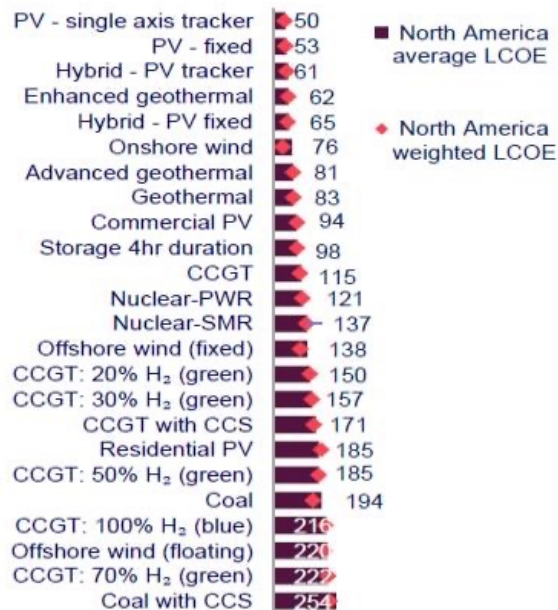
Energy Deployment Timeline (Months)



Sources: Lead time estimates are midpoints for geothermal, CCGT, and SMR. DG timeline provided by South Face Solar

Affordability & Cost Stability

LCOE rankings (2025, US\$/MWh)



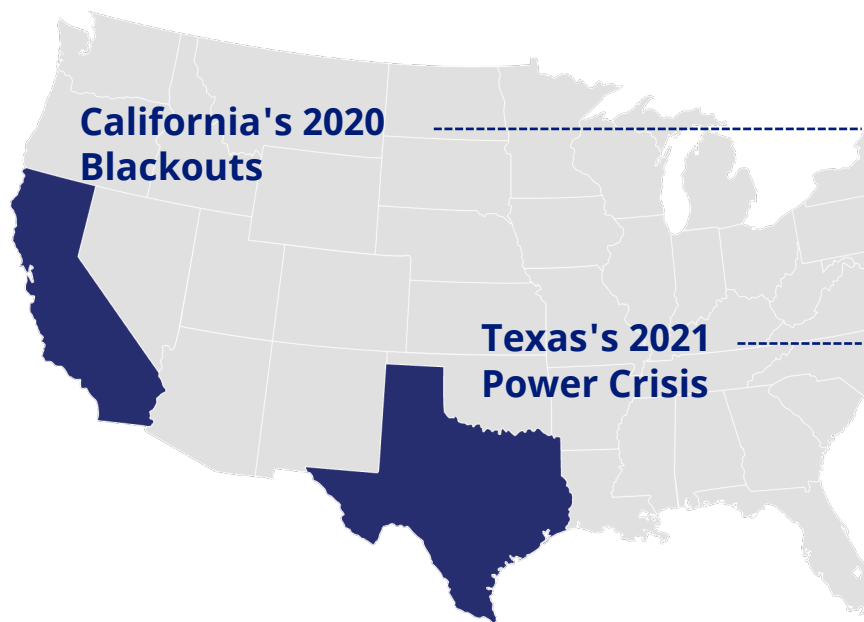
Source: Wood Mackenzie North America levelised cost of electricity (LCOE) 2025 report

Distributed Solar & Storage Have Become Core Stability Assets

Turning Points

Solar + Storage Added to the Grid

Improved Grid Stability



**California's 2020
Blackouts**

California added **28GW+ PV** and **55 GWh+ storage** since 2020 (52% and 9% from DE assets respectively)

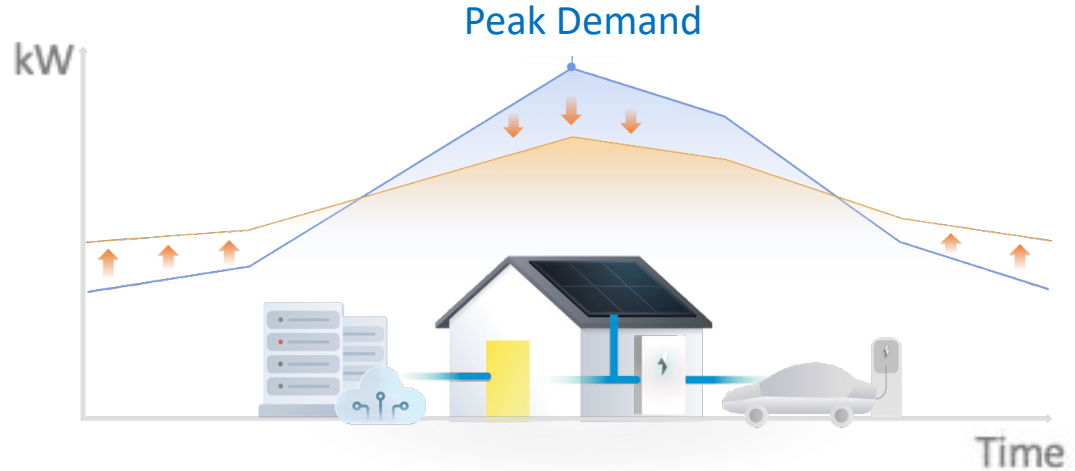
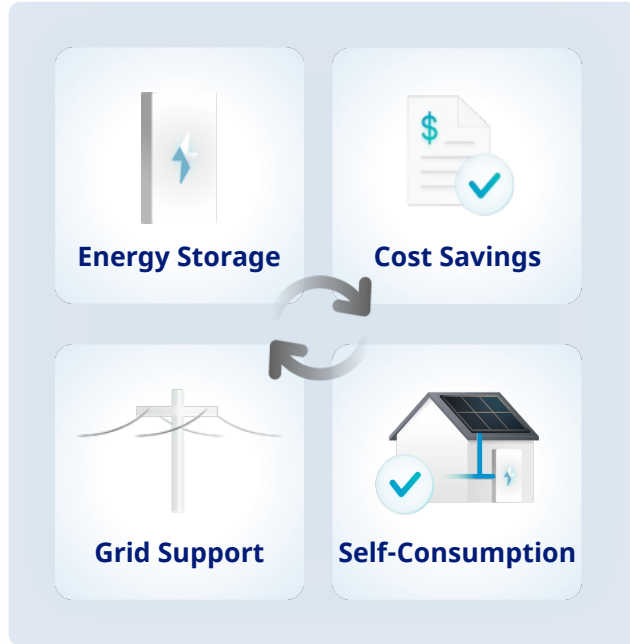
Avoided rolling blackouts in 2022 during a record 52 GW peak

**Texas's 2021
Power Crisis**

Texas added **37 GW+ PV** and **16 GWh+ storage** since 2021 (6% and 3% from DE assets respectively)

ERCOT issued zero grid conservation appeals in summer 2024

Energy Storage Compounds the Value of Solar



- Grid stabilization
- Peak shaving
- Solar time-shifting
- Reduced grid reliance on peaking power plants during high demand

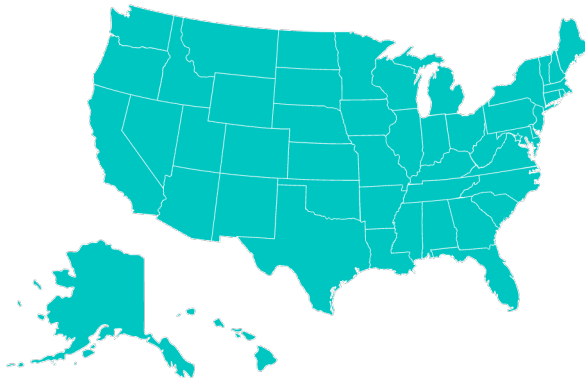
An aerial photograph of a large industrial facility, possibly a warehouse or manufacturing plant, with a flat roof and several parking lots. In the foreground, a large array of solar panels is installed on a grassy field. The background features a dense forested hill under a cloudy sky. The text "Why Isn't There More Distributed Energy?" is overlaid in the center of the image.

**Why Isn't There More
Distributed Energy?**

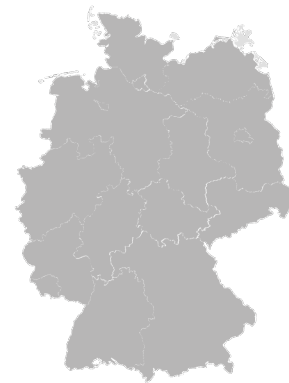
Barriers to Adoption- Cost



Australia
\$4,000 (\$0.57/w)



United States
\$28,000 (\$4/w)

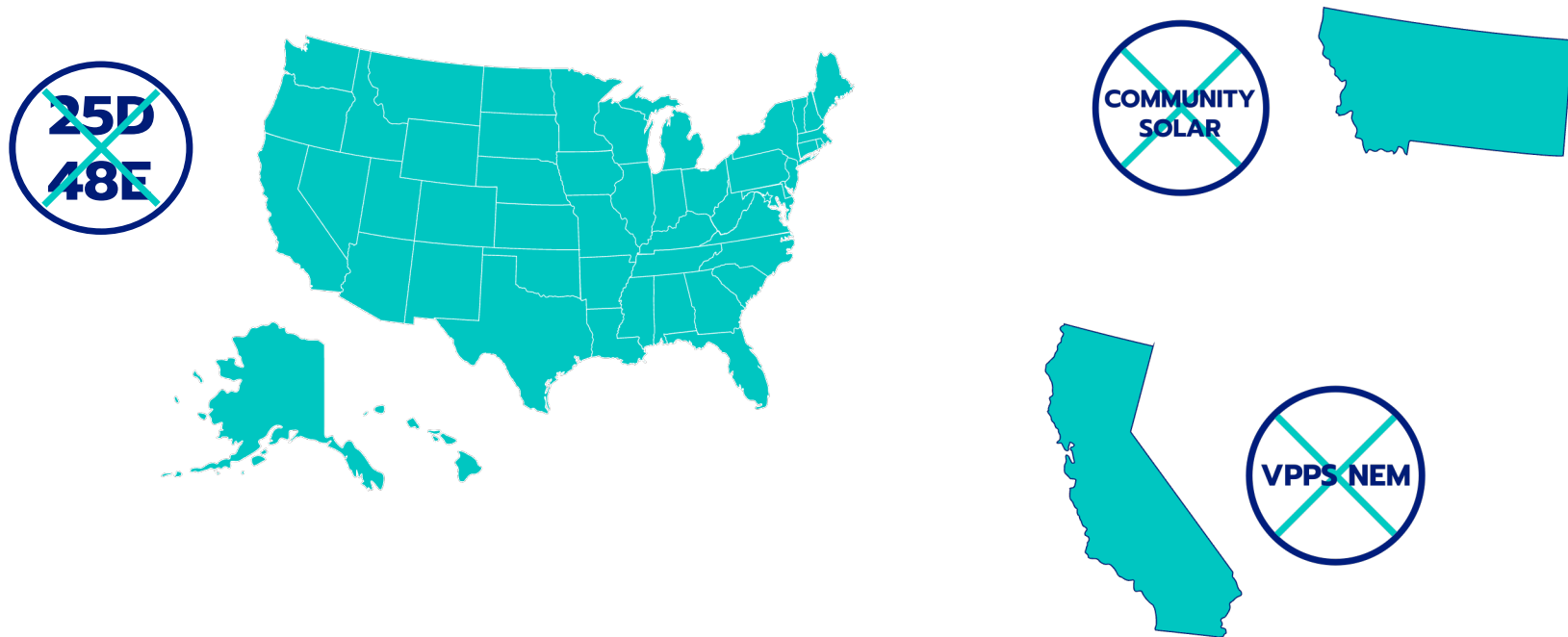


Germany
\$10,000 (\$1.42/w)

Based on median cost of a 7kW residential system

Source: [Permit Power](#) "As Cheap as Our Peers: How cutting red tape can lower the cost of rooftop solar and offset rising utility bills"

Barriers to Adoption – Policy Rollbacks/Gridlock



*While residential TPO projects still stand to benefit from the 30% ITC under Section 48E, the OBBBA now accelerates the phase-out of the Section 48E tax credit for community solar projects.



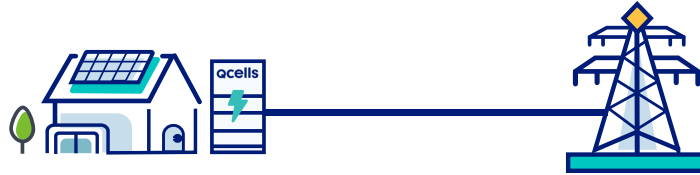
How To Get More Distributed Energy Online

Cut Red Tape and Drive Down 'Soft Costs'

Permitting



Interconnection



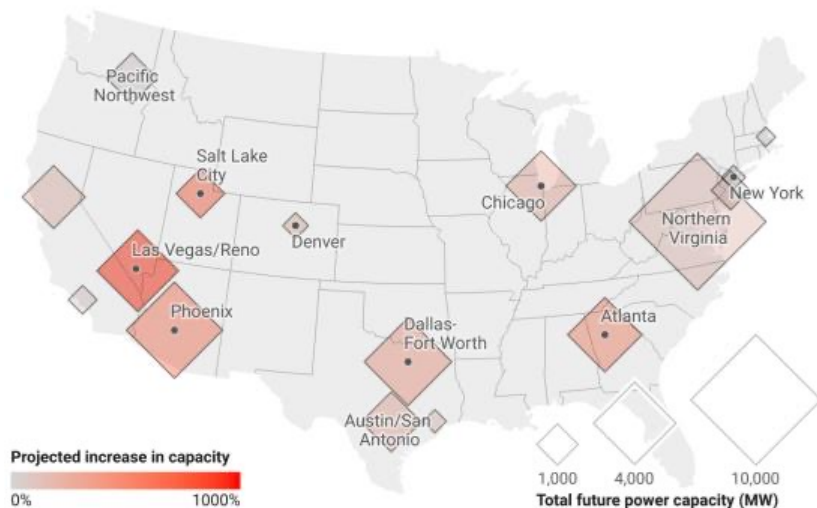
Inspection



Use Distributed Energy to Support Hyperscalers

Data Center Hot Spots in the U.S.

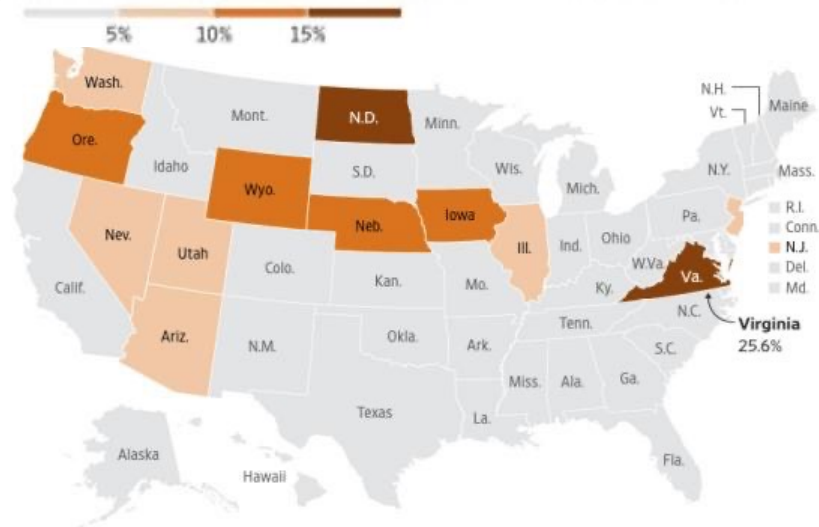
Areas with fastest data-center growth and planned capacity



Map: & the West • Source: Upwind, JLL 2024 Data Center Report • Created with Datawrapper

Source: [& the West](#), Upwind, JLL 2024 Data Center Report

Share of electricity consumed by data centers in 2023, for each state



Source: Electric Power Research Institute
Dannv Dougherty/THE WALL STREET JOURNAL

Source: [The Wall Street Journal](#), Electric Power Research Institute

Get Bipartisan Distributed Energy Bills over the Finish Line



SOLAR POWER

Support the Georgia Homegrown Solar Act

Source: [Environment America.org](https://www.environmentamerica.org)

Republican-led community solar legislation moves forward in Missouri and Iowa

Legislation in Missouri aims to launch a three-year pilot program, whereas a new comprehensive community solar policy goes before the House in Iowa.

FEBRUARY 19, 2025 ANNE FISCHER

MARKETS & POLICY POLICY IOWA MISSOURI



A new 1.75-megawatt agrivoltaic solar array at Iowa State University will study how best to optimize land use while providing local community benefits.

Image: Iowa State University

Source: [PV magazine](https://www.pv-magazine.com)



Republican Reps. Ray (left) and Hoops (right) listen to members ask questions about their legislation.

Image: The Ohio House of Representatives

A photograph of a modern, light-colored building with a large glass facade. The word "qcells" is mounted on the upper part of the building in large, teal-colored letters. In the foreground, three people are seen from behind, looking towards the building. On the left, a man wears a blue baseball cap and a dark shirt. In the center, a man wears a dark polo shirt and jeans. On the right, a woman has long brown hair and wears a dark top. The scene is set outdoors during the day.

qcells

Qcells is Leading On Distributed Energy

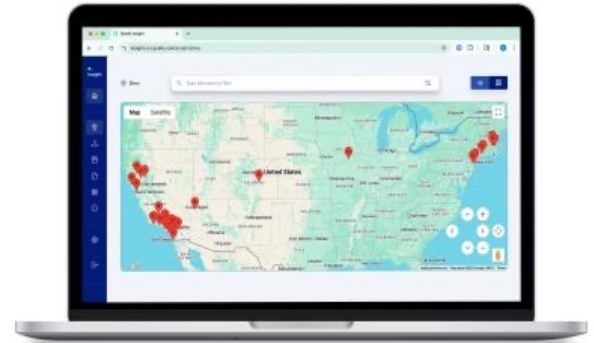
U.S. Manufacturing Leadership

- Qcells has invested **\$2.8 billion** to build an integrated solar supply chain in the U.S.
- Job creation and local economic development (**4,000+ total new jobs** in Georgia)
- One in three residential rooftop PV modules in the U.S. is a Qcells module

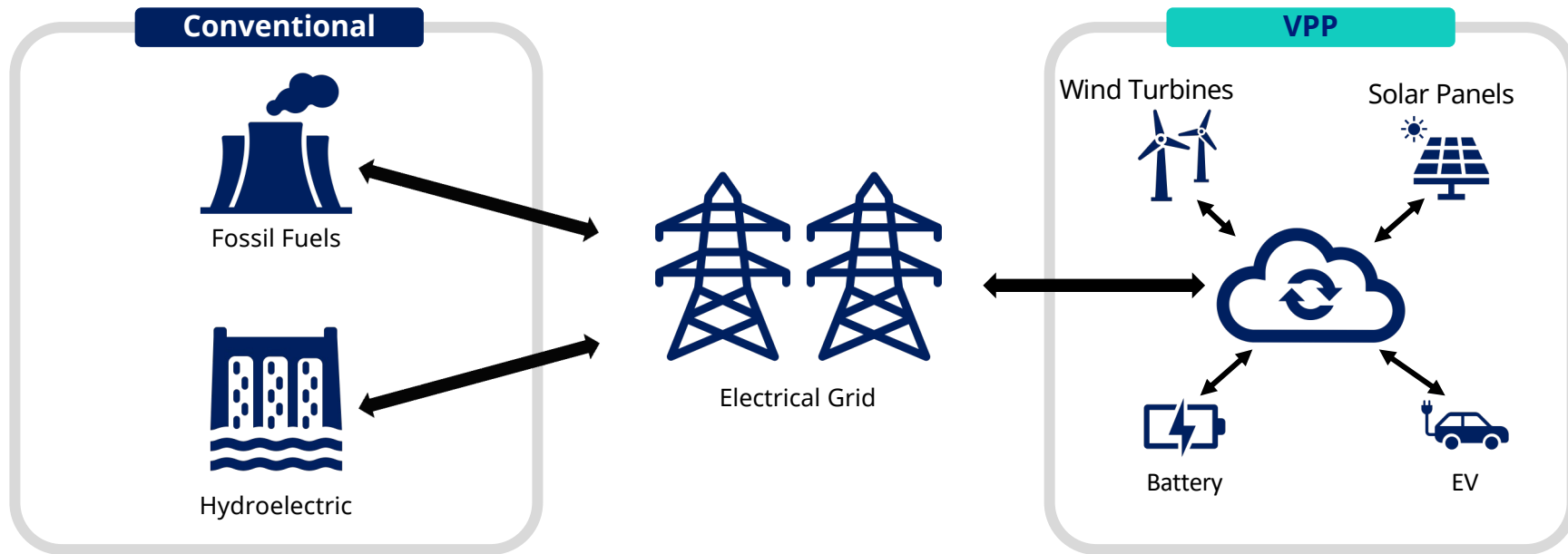


Innovations in U.S. Originated Software

- At the forefront of developing commercial, community & industrial (CCI) software solutions
- Software solutions leverage real-time analytics, AI and machine learning algorithms
- All engineered to meet utility, customer, and regulatory needs in a dynamic energy market



Expanding Grid Services / Virtual Power Plant (VPP) Footprint



Qcells systems participating in grid services provide
resilience, economic sufficiency and sustainability



qcells

Thank you!

www.qcells.com

