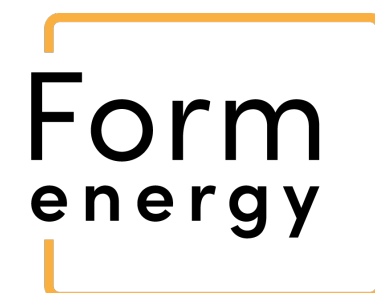


BREAKTHROUGH LOW-COST, MULTI-DAY ENERGY STORAGE FOR MINNESOTA'S ENERGY FUTURE

Scott Burger, Director, Analytics, Form Energy
Jeffrey Stephens, PE, Project Manager, Xcel

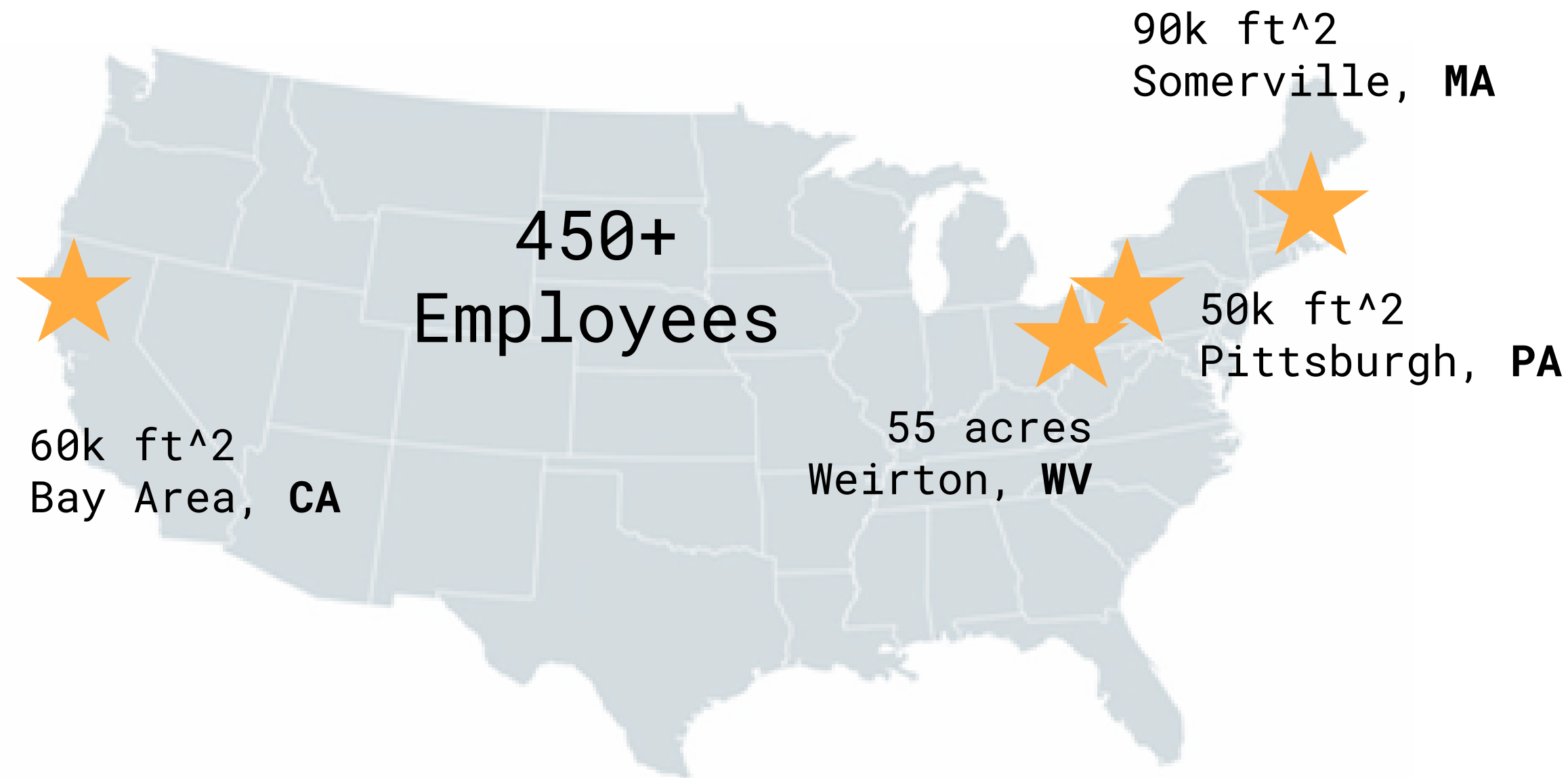
*MACPZA Spring Conference
June 1, 2023*



CONFIDENTIAL



Rising to the challenge of clean reliability with a team that will deliver



OUR INVESTORS: LONG-TERM AND IMPACT-FOCUSED

\$820M+ in venture capital from top investors including: Breakthrough Energy Ventures (BEV), TPG's Climate Rise Fund, Coatue Management, GIP, NGP Energy Technology Partners III, ArcelorMittal, Temasek, Energy Impact Partners, Prelude Ventures, MIT's The Engine, Capricorn Investment Group, Eni Next, Macquarie Capital, Canada Pension Plan Investment Board, and other long-term, impact oriented investors

LED BY ENERGY STORAGE VETERANS

Decades of cumulative experience in energy storage

- 100's of MW of storage deployed



The Challenge

The electrical grid needs to fundamentally transform to meet the challenges posed by the energy transition



Intermittency of renewable assets creates periods of undersupply



Clean energy goals and changing economics risk stranding fossil assets



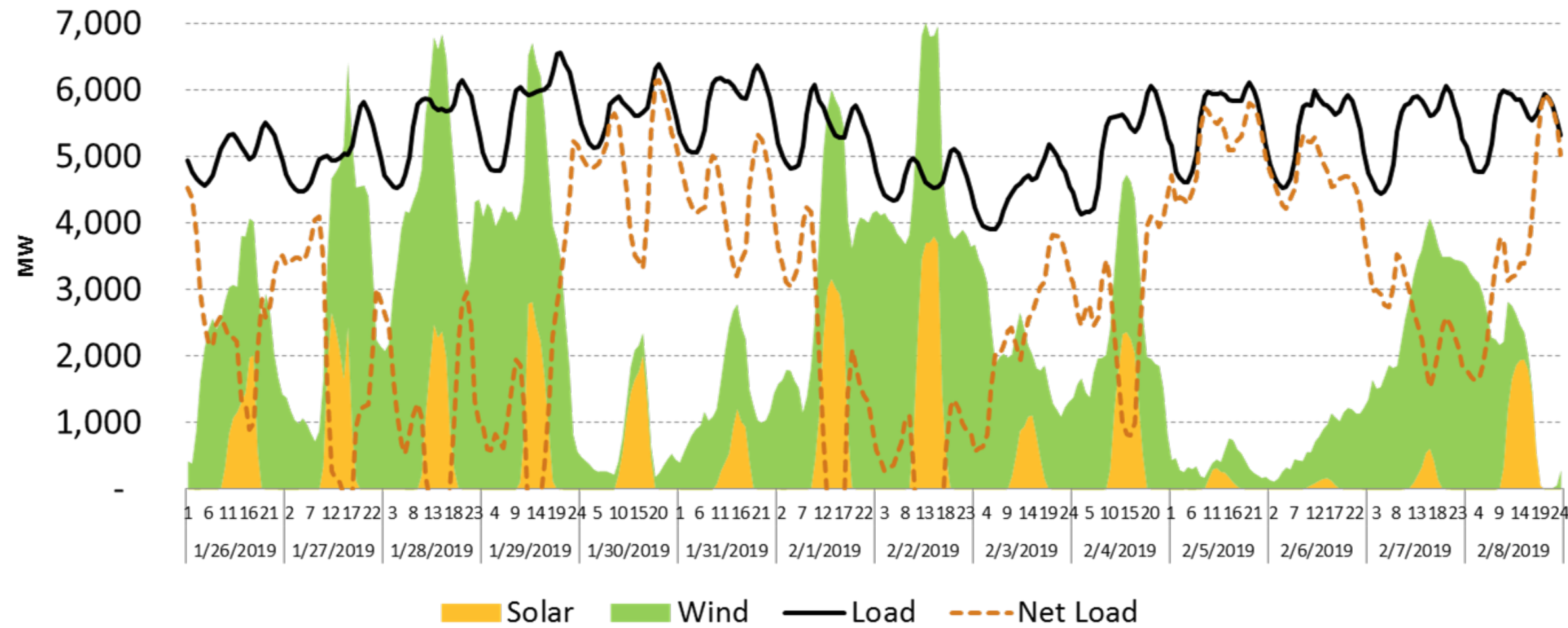
Extreme weather events are becoming more frequent and disruptive to customers



Transmission congestion and interconnection queues are increasing

Weather-driven multi-day reliability challenges are universal

Multi-day weather events will drive reliability challenges in a decarbonized future grid



Upper Midwest multi-day weather event

Source: [Xcel Energy](#) 2020-2034 Upper Midwest Resource Plan, May 20, 2019 Workshop

Weather related reliability risks have been identified in nearly every major power market

Pacific Northwest

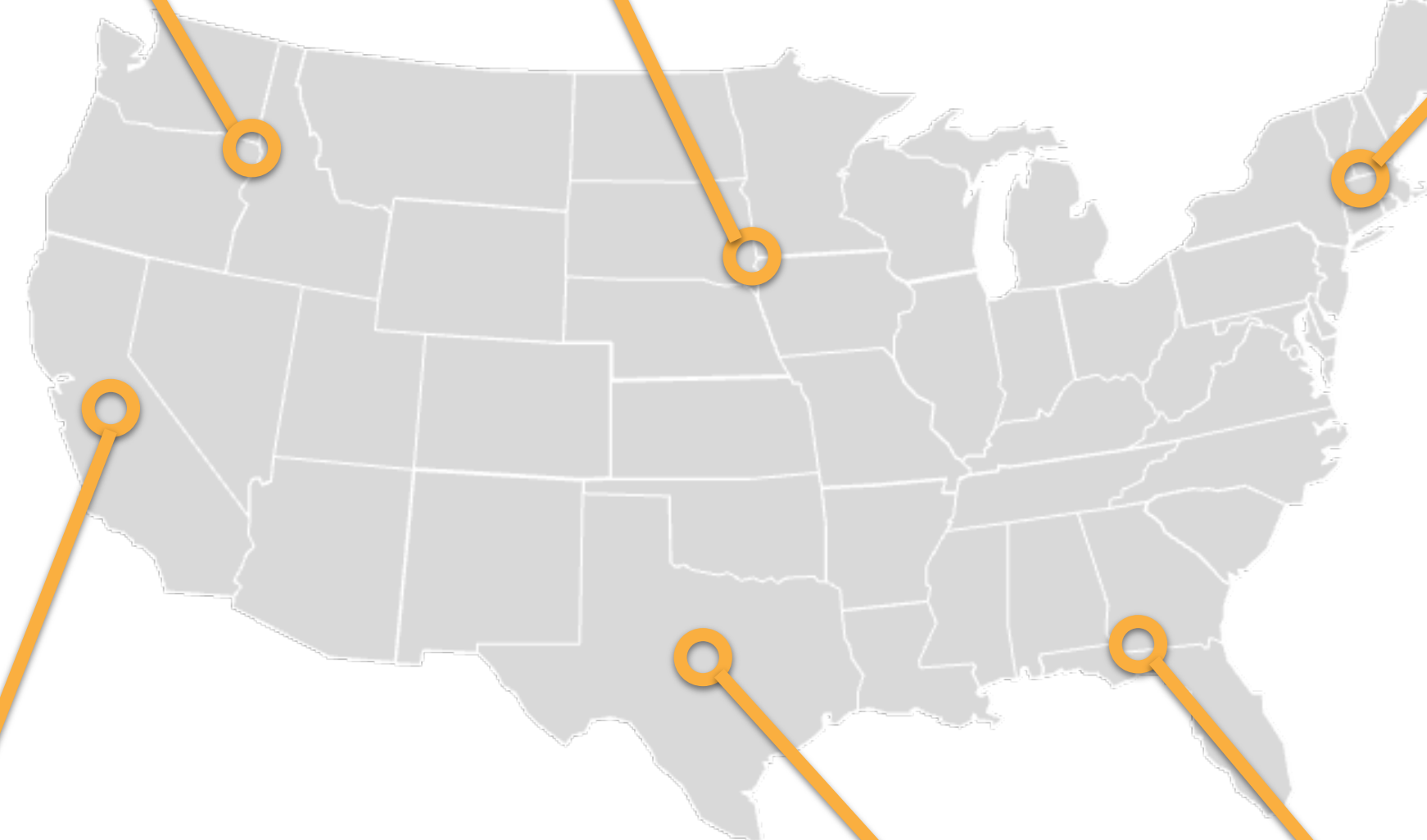
E3 modeled multi-day renewable lull during drought years

Upper Midwest:

2019 Polar Vortex drives high power prices & reliability risks

New England:

DNV-GL suggests as many as 2 wind lulls ≥ 3 days during heat waves per year



California

E3 modeled 10 day undersupply during cloudy week in 2050

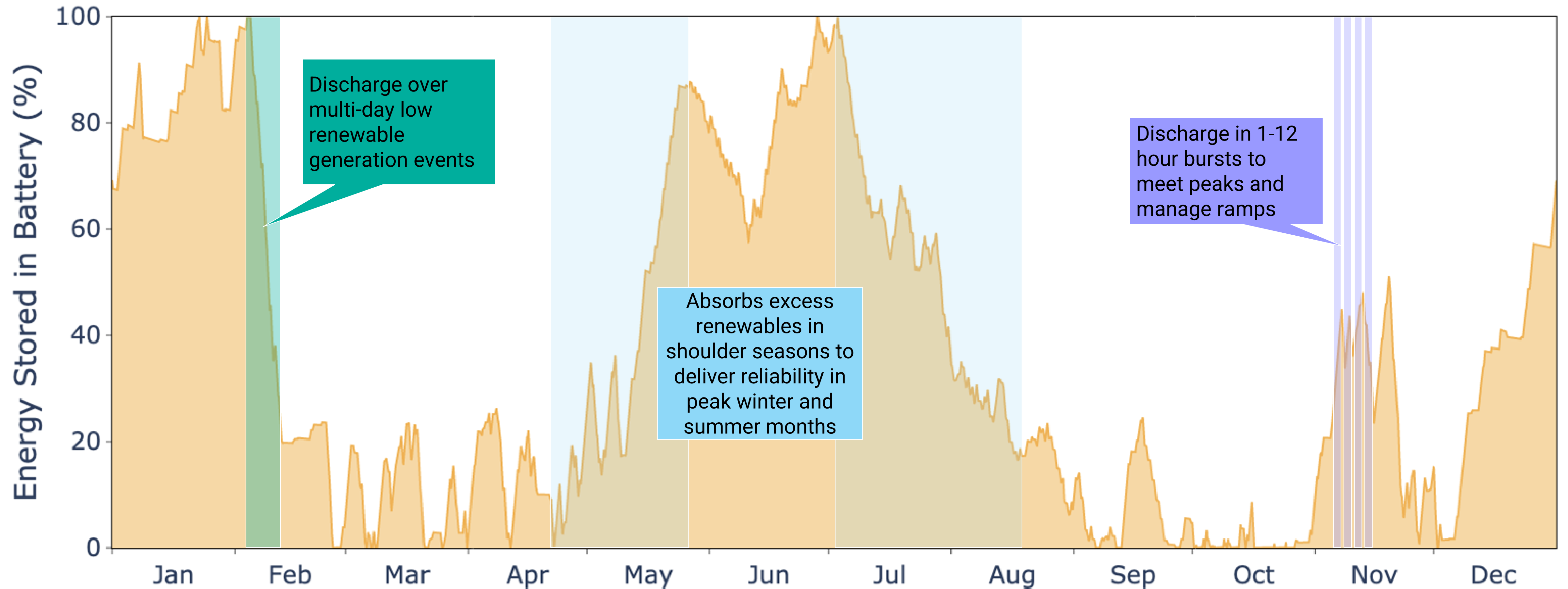
Texas

Winter Storm Uri forces 3 days of load shedding in 2021

Southeast

FP&L adopts to winter peak planning to avoid up to 13M customer outages

Multi-Day Storage operates year-round to balance seasonal, multi-day, and intra-day variability in renewables



● Multi-Day

● Seasonal Up
(net charge with excess renewables)

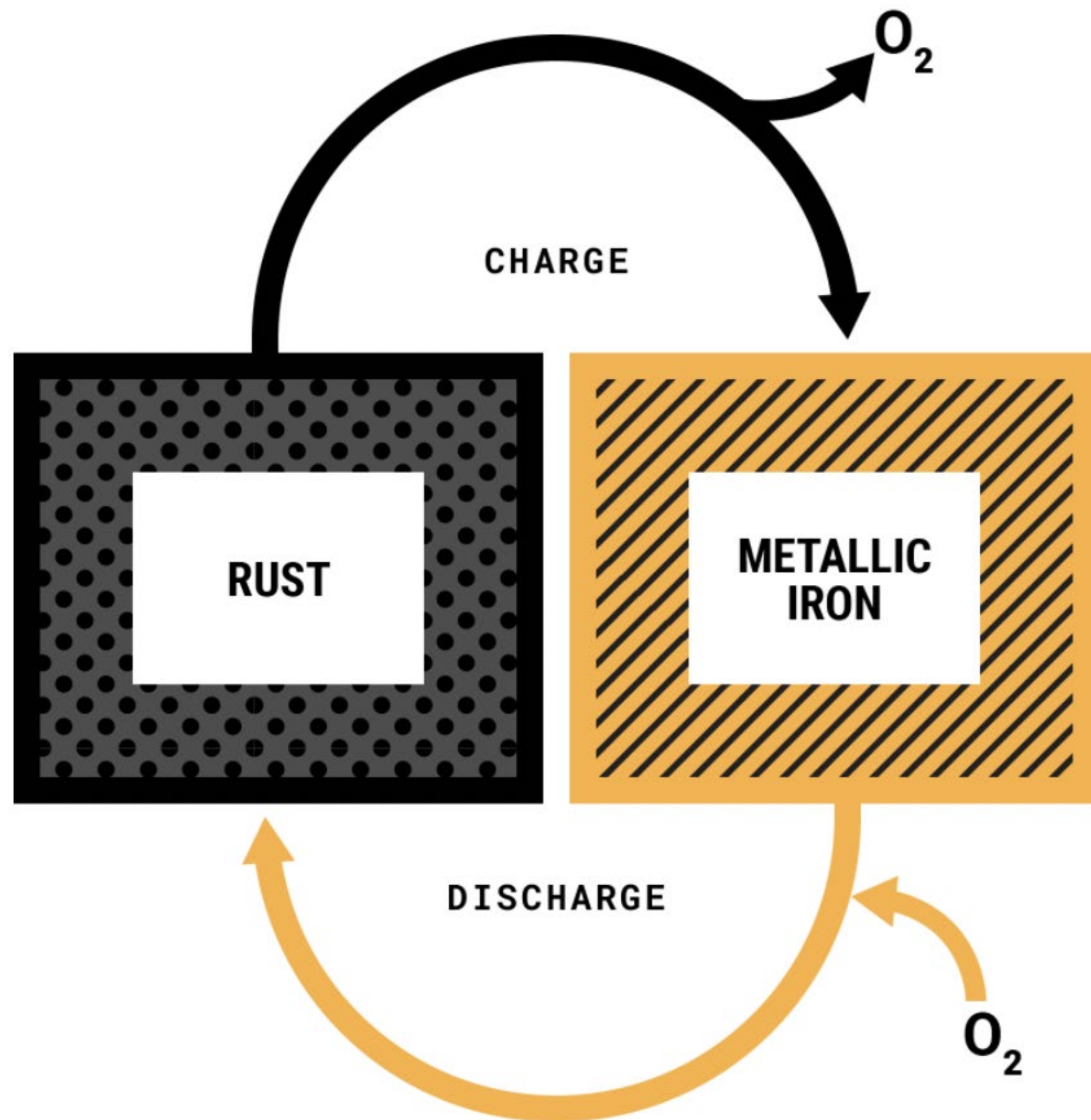
● Seasonal Down
(net discharge during peak load season)

● Intra-Day

Form Energy's Iron-Air Multi-day storage systems (MDS)

Rechargeable iron-air is the best technology for multi-day storage

Reversible Rust Battery



COST

Lowest cost rechargeable battery chemistry.
Less than 1/10th the cost of lithium-ion batteries



SAFETY

Non-flammable aqueous electrolyte. No risk of thermal runaway. No heavy metals.



SCALE

Uses materials available at the global scale needed for a zero carbon economy. High recyclability.

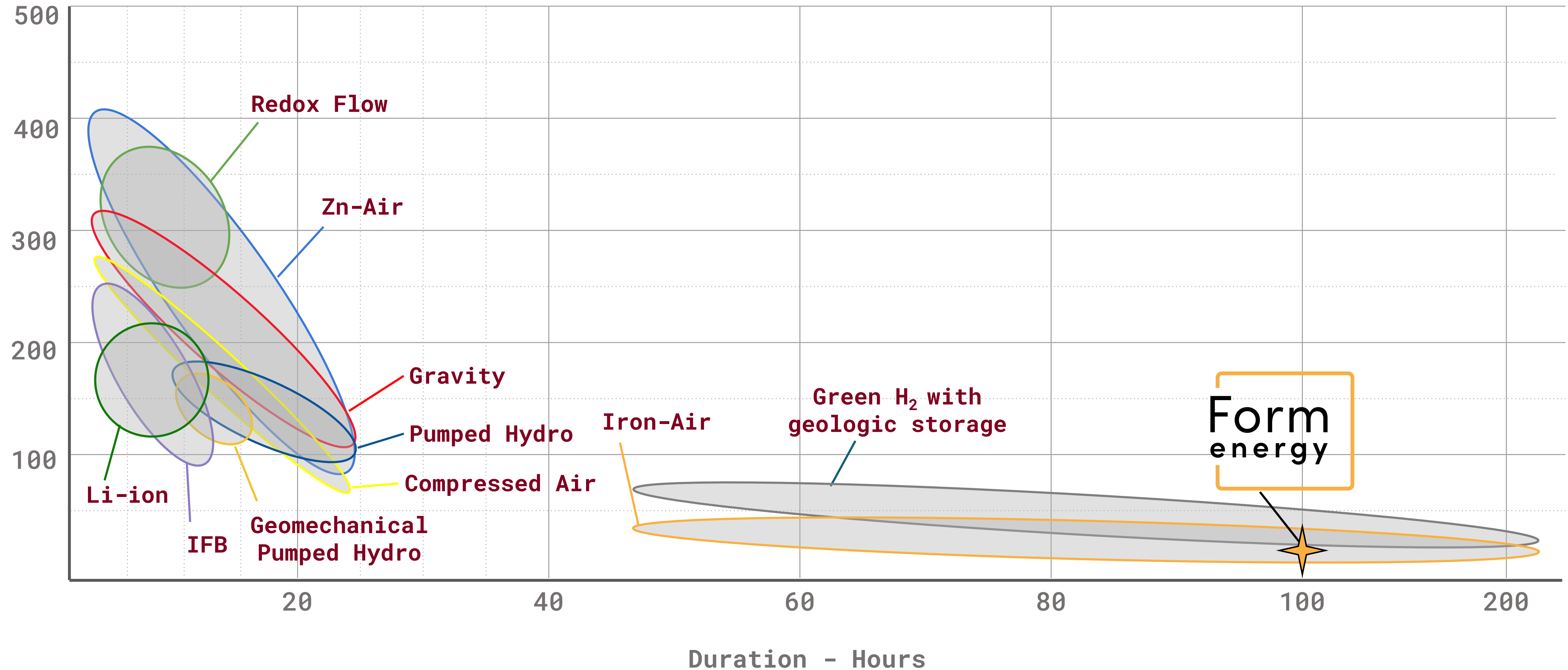


RELIABLE

100+ hr duration required to make wind, water and solar reliable year round, anywhere in the world.

Form MDS is the only technology targeting multi-day duration without geographic constraints

2030 Installed Cost - \$/kWh



Iron-Air MDS

Ultra Low Cost Multi-day Storage



100 hr
duration

1/10th the cost of
lithium ion

Domestically
available materials

Transforming the Grid

Form Factory 1: Commercial-Scale Manufacturing

Transforming Weirton Steel Land for Battery Manufacturing in West Virginia



Building rendering



Groundbreaking, May 2023

- **Total Local Investment:** \$760 million
- **Construction Start:** Early 2023
- **Production Start:** Late 2024
- **Jobs:** Minimum of 750 full-time jobs

Location Benefits

- Close to our existing pilot manufacturing facility in PA
- Strong natural infrastructure
- Local manufacturing know-how

Factory Function

- Semi-to-fully automated cell, module, & enclosure assembly
- Ability to scale production in modular blocks

Over 3 GWh of Commercial Engagements



Collaborating with Georgia Power on a project application of **up to 15 megawatts/1500 megawatt hours (MW/MWh)** of energy storage systems to be located in the utility's service area

"At Georgia Power, we know that we must make smart investments and embrace new technologies now to continue to prepare for our state's future energy landscape," said **Chris Womack, Chairman, President and CEO of Georgia Power**. "We're excited to have Form Energy as a partner to help us build on Georgia's solid energy foundation."



Partnering with Great River Energy to deploy a first-of-its-kind **1.5 megawatt/150 megawatt hour** multi-day energy storage project in Cambridge, Minnesota in 2024

"Great River Energy is excited to partner with Form Energy on this important project. Commercially viable long-duration storage could increase reliability by ensuring that the power generated by renewable energy is available at all hours to serve our membership," said **Great River Energy Vice President and Chief Power Supply Officer Jon Brekke**.



Partnering with Xcel Energy to deploy **two 10 MW / 1,000 MWh** multi-day storage systems; one in Becker, MN and one in Pueblo, CO. Both projects are expected to come online as early as 2025

"As we build more renewable energy into our systems, our partnership with Form Energy opens the door to significantly improve how we deliver carbon-free energy so that we can continue to provide reliable and affordable electric service to our customers well into the future." said **Bob Frenzel, Xcel Energy President and CEO**.

The Form-Xcel Partnership

Xcel Energy Strategy, Vision and Mission

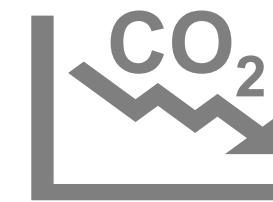
VISION

We will be the **preferred** and **trusted** provider of the energy our customers need

MISSION

We provide our customers the safe, clean, reliable energy services they want and value at a competitive price

PRIORITIES



Lead the Clean Energy Transition

- Electricity: 80% carbon reduction by 2030, 100% carbon-free by 2050
- Natural gas: 25% GHG reduction by 2030, net-zero by 2050



Enhance the Customer Experience

- Conservation, new products/services
- 1 in 5 EVs enabled by 2030



Keep Bills Low

Average bill increases \leq rate of inflation

VALUES



Connected



Committed



Safe



Trustworthy

Xcel Energy's pilots aim to demonstrate complementary use cases across market contexts



- Firm coal capacity replacement
- Wind integration
- Energy Community: Environmental Justice & Just Transition
- Non-RTO WECC portfolio optimization



- Firm coal capacity replacement
- Wind integration
- Winter storm hedge
- MISO market interaction

Xcel Energy – Sherco 10MW Pilot

- Xcel will deploy Form's 10MW, 100hr duration, iron-air battery at the Sherburne County Generating Station in Becker, MN.
- Construction is expected to begin in 2024 with Sherco Pilot operational in late 2025.
- Expecting a Site Permit requirement through PUC, but will still work to inform local government.



Thank you!