



*A partnership between*

SLAC-Stanford Battery Center

&

Precourt Institute for Energy



Architecting the energy transition  
by guiding “What to build”

Aug 9, 2024 | ESGC Summit | Manufacturing & Supply Chain



# STEER | Overview

Working backwards from TWh-deployment to guide R&D directions, investment decisions, and policy agendas



**Sally Benson**  
Co-PI

**Precourt Family Professor** | Energy Science & Engineering, Stanford University

**Former Chief Strategist of Energy Transition** | White House Office of Science & Technology Policy



**William Chueh**  
Co-PI

**Director** | Precourt Institute for Energy

**Director** | SLAC-Stanford Battery Center

**Associate Professor** | Materials Science & Engineering, Stanford University



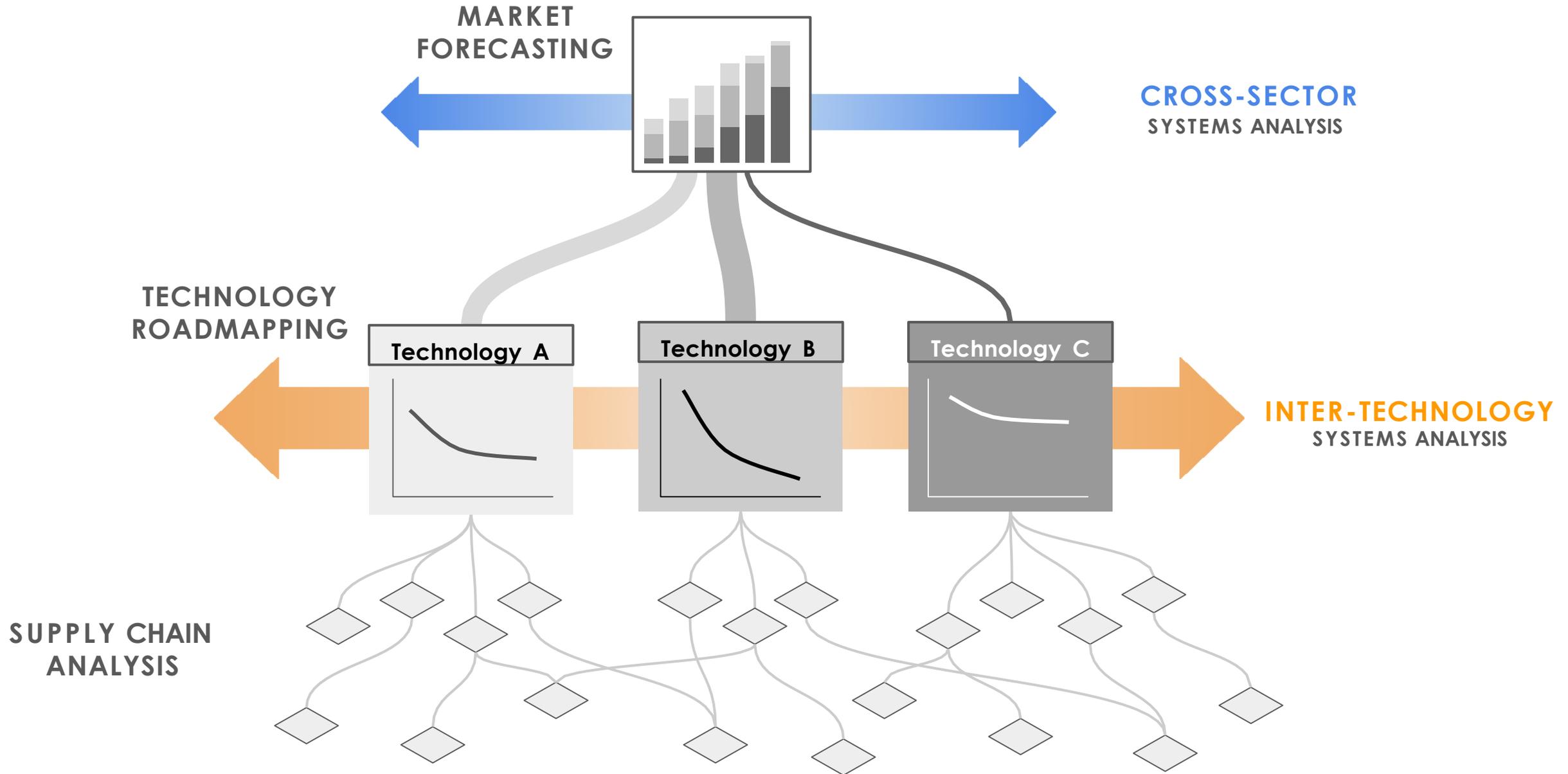
**Adrian Yao**  
Founder & Team Lead

**Co-founder & former CTO** | EnPower, Inc.

**PhD Candidate** | Materials Science & Engineering, Stanford University

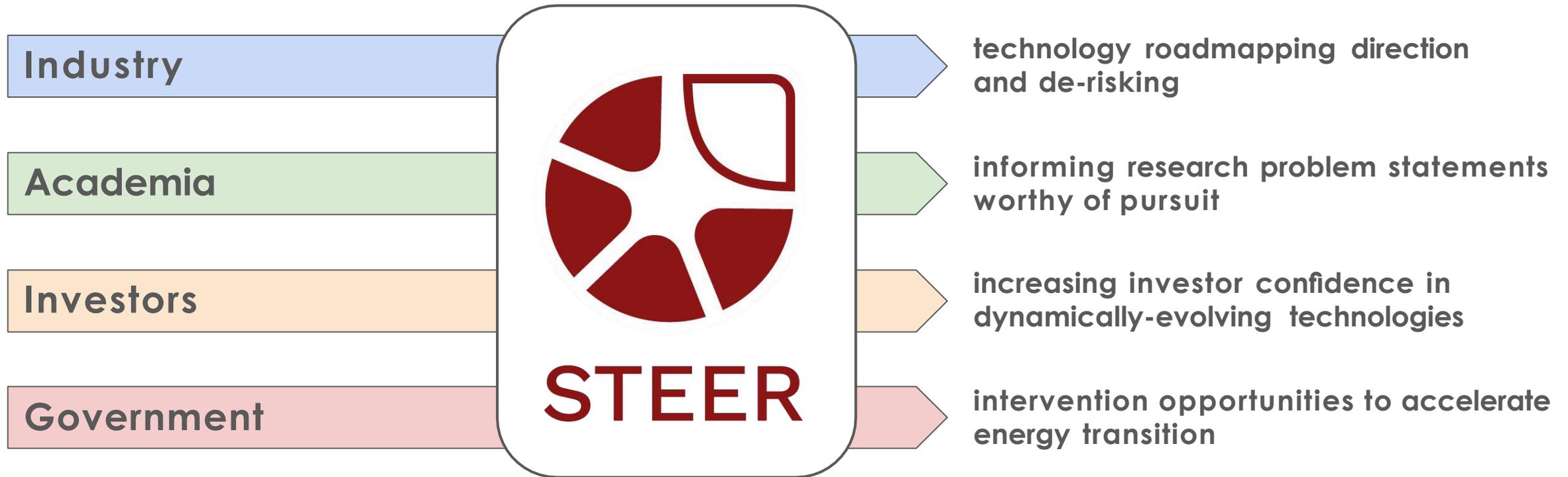
## Support & Key Stakeholders





# A vision for **global, multi-domain impact**

Value propositions servicing  
multiple domains



# ENPOWER

Founder & former CTO

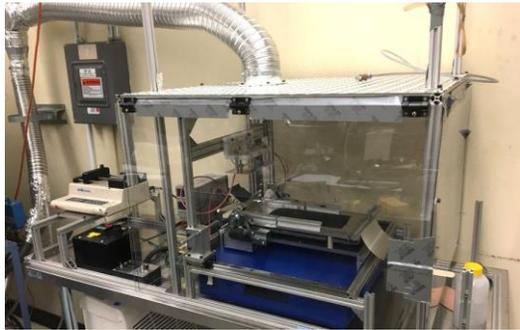
2014 – 2022

*Giga-scale drop-in multi-layered electrode architectures for hi-energy, hi-power Li-ion cells*

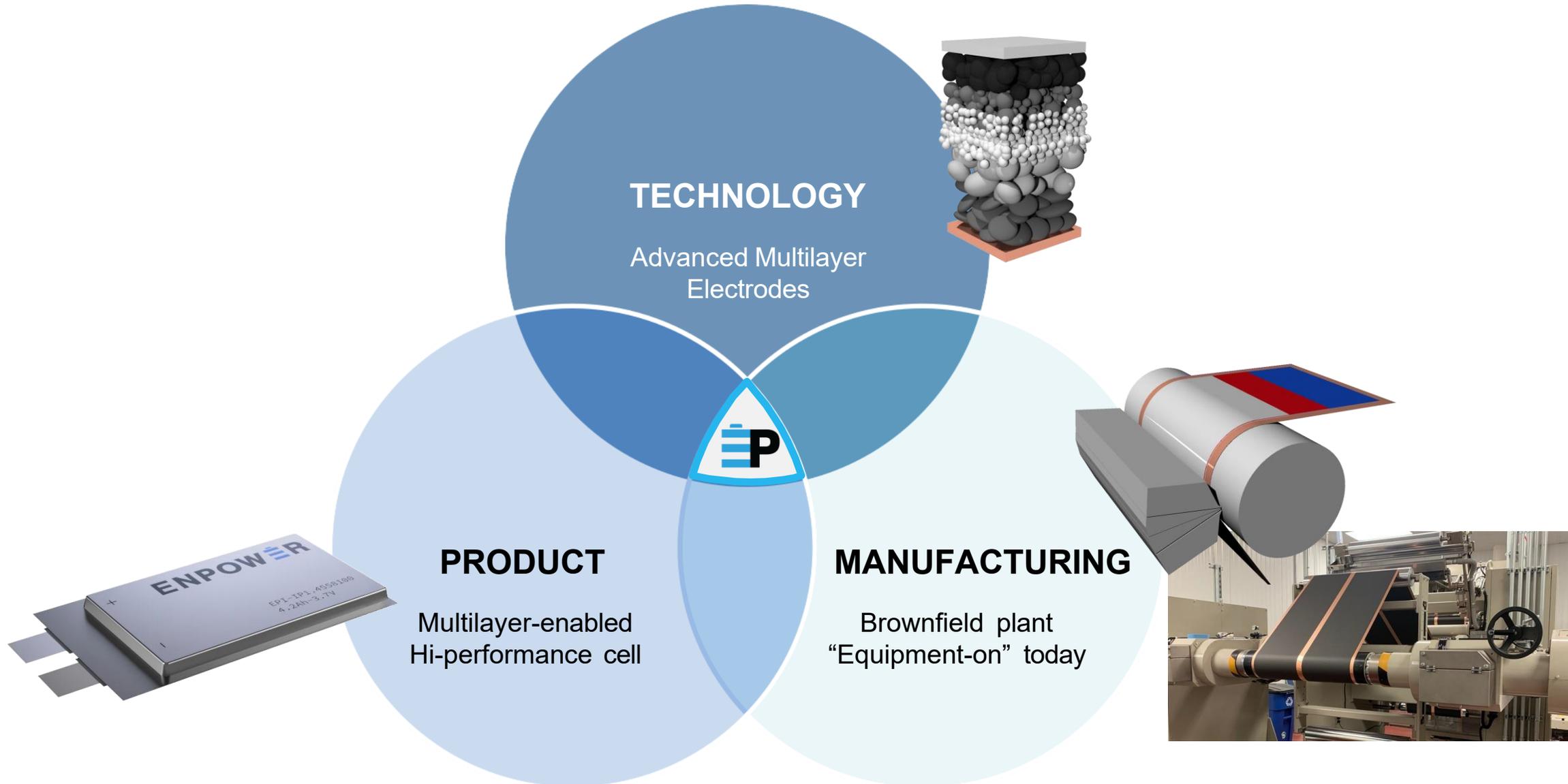
Indianapolis, IN  
Production Scale

Houston, TX  
Lab Scale

Phoenix, AZ  
Pilot Scale



**Uniquely positioned** as leading American performance battery company



# Building Batteries is Hard

## BMW cancels \$2 bln battery cells contract with Northvolt

By Reuters

June 20, 2024 8:08 AM PDT · Updated 13 days ago

The Electric

## The Electric: Freyr Takes Drastic Action After Trouble Scaling Up 24M's Battery

The Electric

## The Electric: Half the West's Planned Gigafactories Are Uncertain to Be Built

 CNBC

**Tesla employees say to expect more Model 3 delays, citing inexperienced workers, manual assembly of batteries**

**POLITICO**

## Britishvolt bankruptcy exposes Britain's battery bluff

The UK is falling far behind in the global race to build batteries.

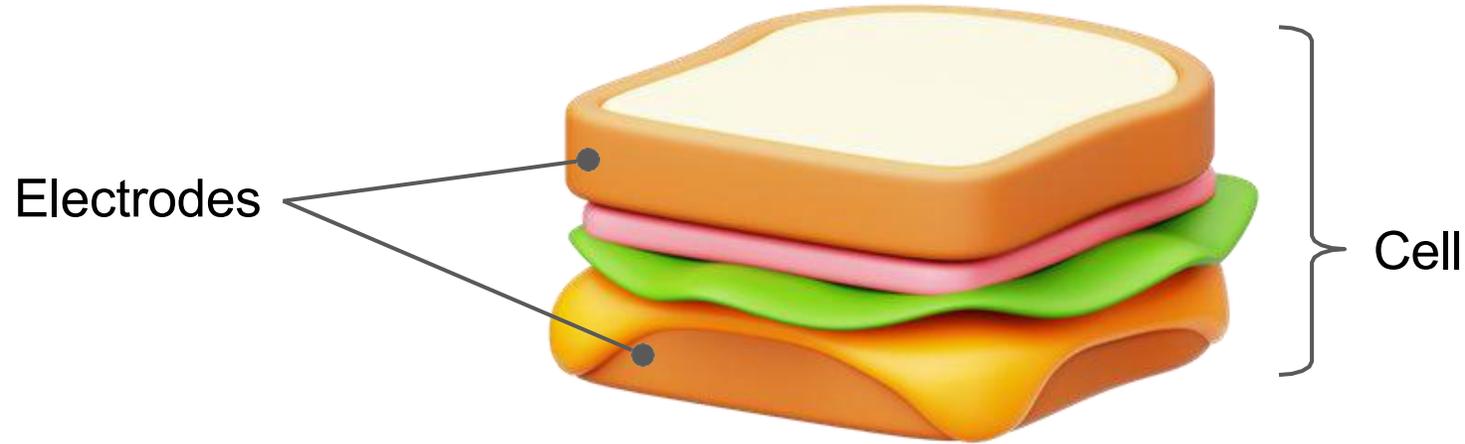
**FINANCIAL TIMES**

## Northvolt considers cutting back aggressive expansion plans

Europe's leading battery maker recently lost a \$2bn BMW contract as it struggles to produce at scale

# Core Strategy: An “Electrode-first” Philosophy

The Li-ion Sandwich Analogy



> **70%** of BOM

> **50%** of labor hours

> **40%** of plant footprint

> **30%** of energy input

~ **30%** of total CapEx

**“Electrode-first”** throughout:

**Technology:** Electrode-level innovations at core of EnPower

**Product:** Hi-performance cells enabled by multilayer advantage

**Manufacturing:** State-of-art electrode processing equipment

**Go-to-market:** Superior electrode capabilities enable early revenue