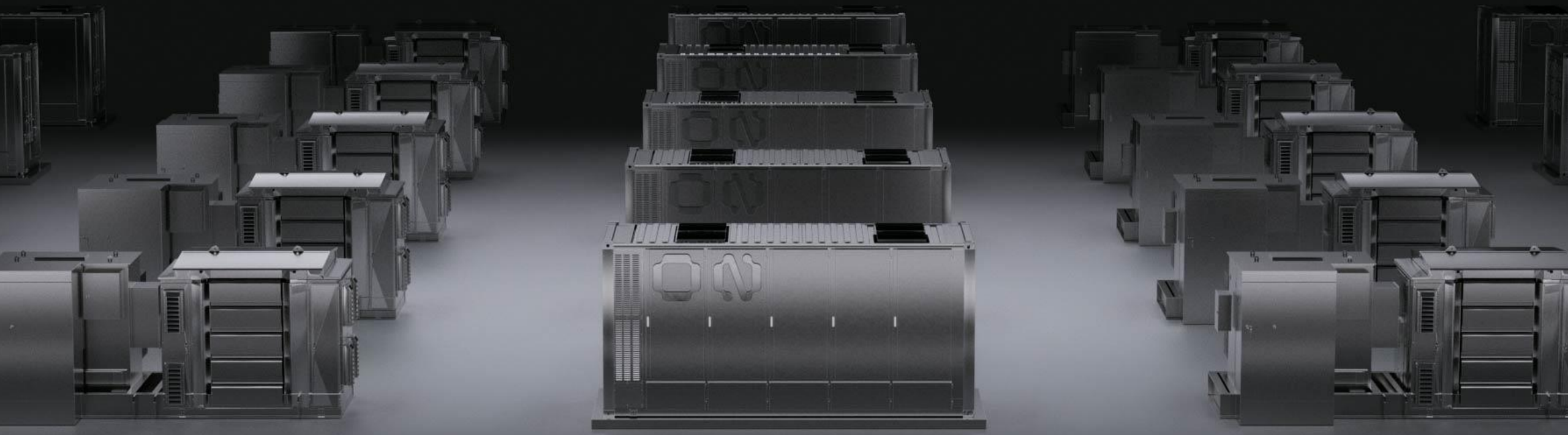
energy™



Perfect Power for AI Factories

AI UPS™

Proven Technology Foundation

3 GW+
Operating & Under Construction

10+ GW
Production Capacity

75+
Projects Across Americas

>99.9%
Uptime Performance

20 Yr
Tier-1 Component Warranties

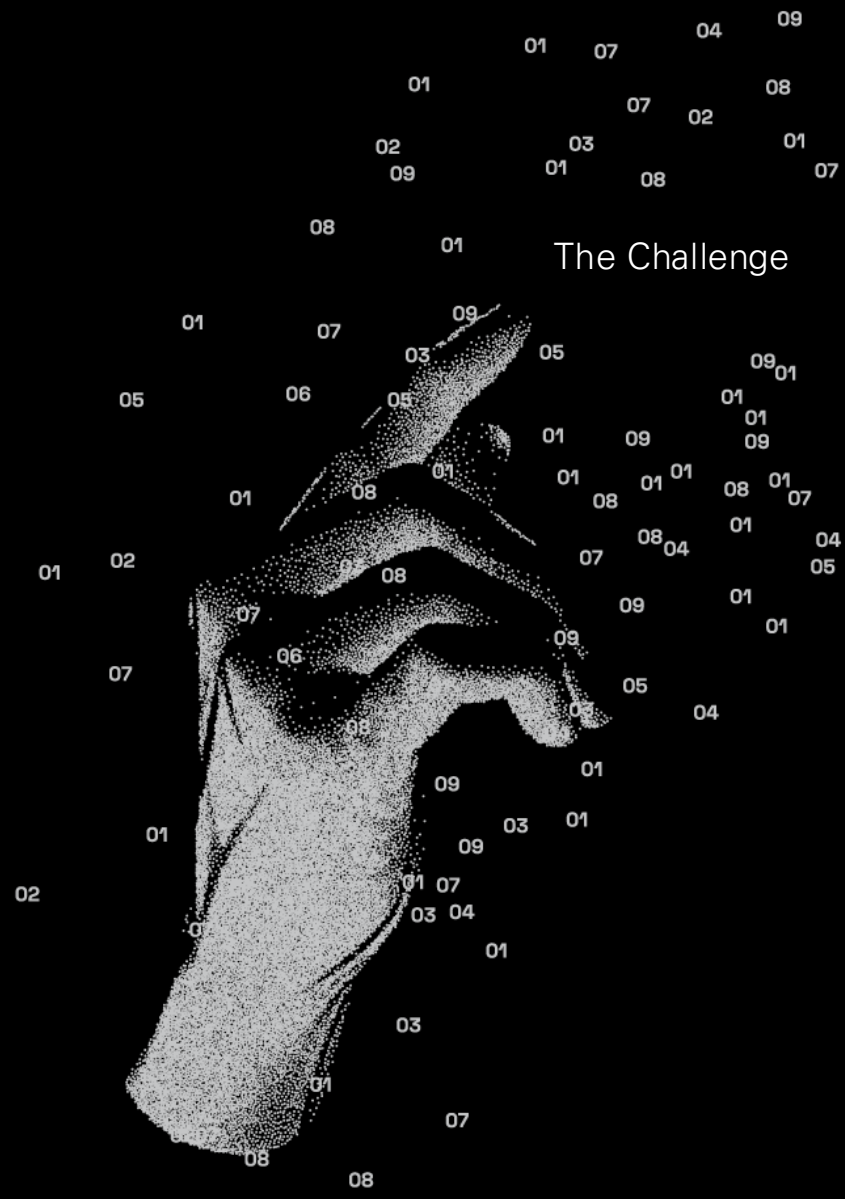
U.S.
Manufacturing, ITC eligible

ON.AI UPS™

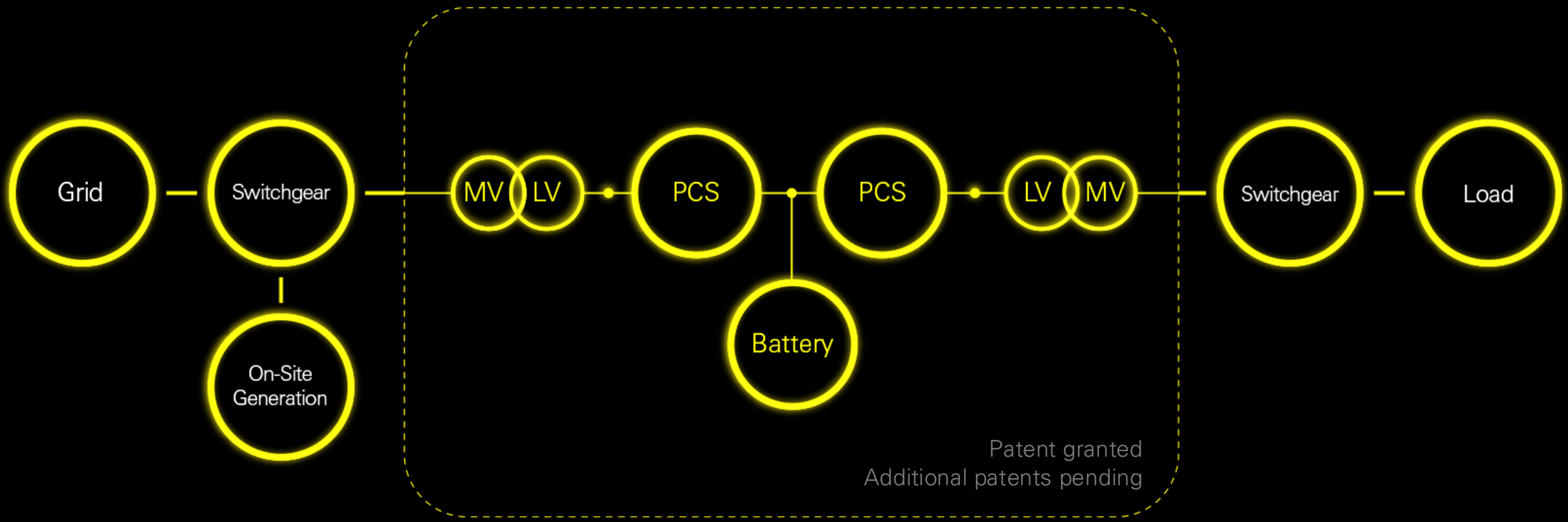
Converging Power Requirements

The Challenge

- Unprecedented Scale
- Voltage Ride-Through
- Low Tolerance for Interruption
- Large Load Flexibility
- Rapid Load Transients
- Ramp Rate Control



Perfect Power for AI Factories



Grid power flows through back-to-back bidirectional inverters for decoupled power supply.

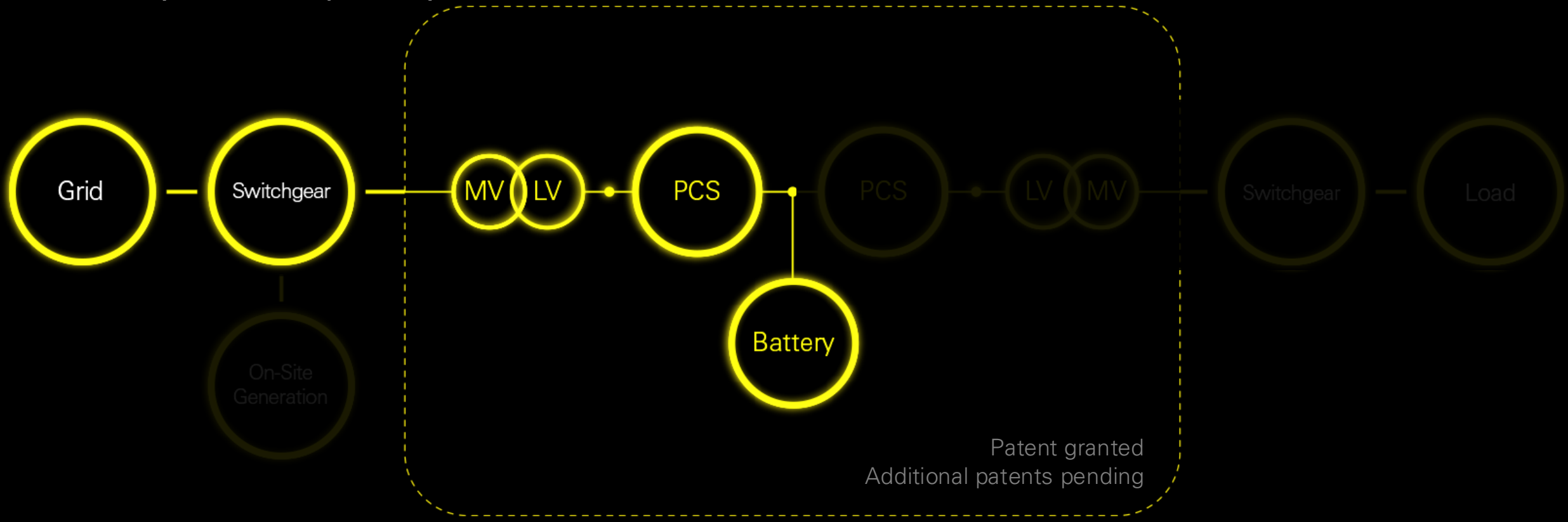
Double-conversion isolates sensitive loads from grid disturbances entirely

The batteries are always on resulting in Zero-Flicker with Zero-Transfer time

Reduce grid stress by peak shaving / demand response

N+1 to 2N+1 redundancy assures resilient operations (Tier III +)

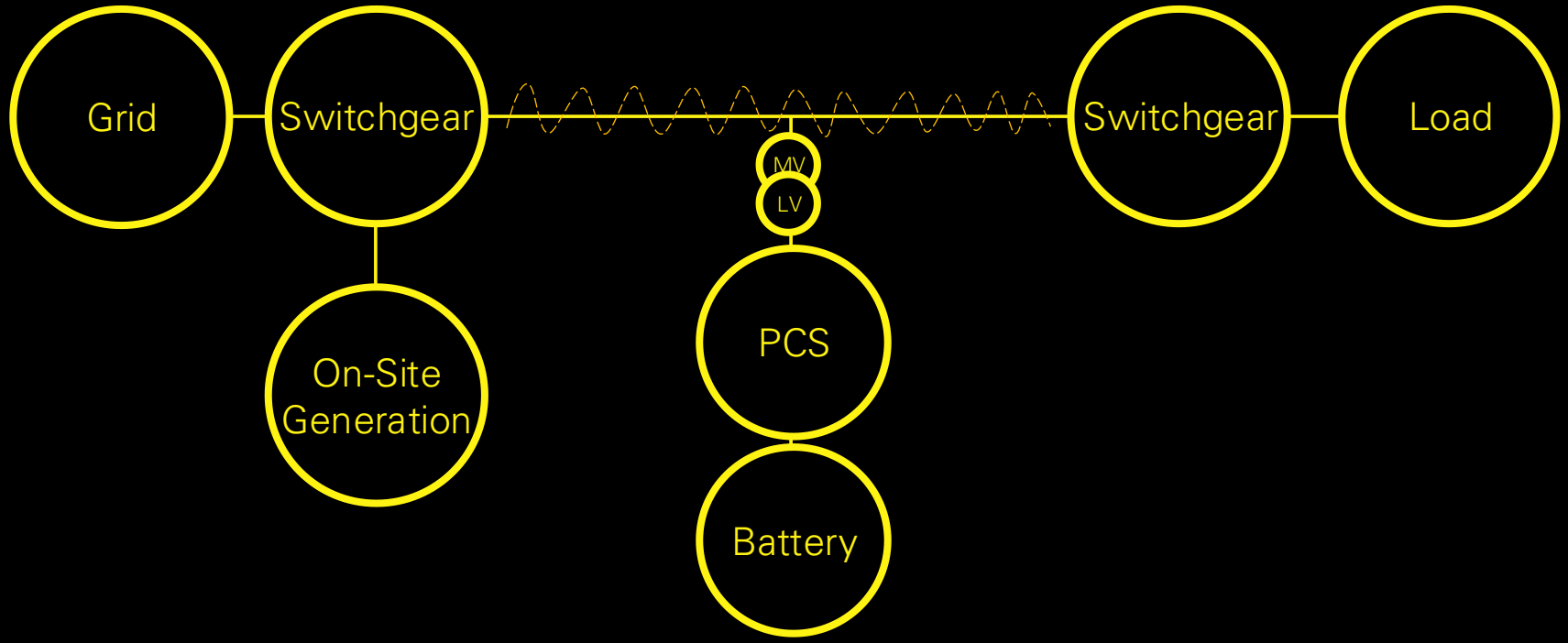
Beauty in Simplicity



To the grid, the ***whole*** site becomes a BESS equivalent that only charges…

"Armed with new batteries and winterized plants, ERCOT survives Fern" – Latitude Media
"BESS buildout crosses 15 GW in ERCOT in Q1 2026" – Modo Energy

The Alternative

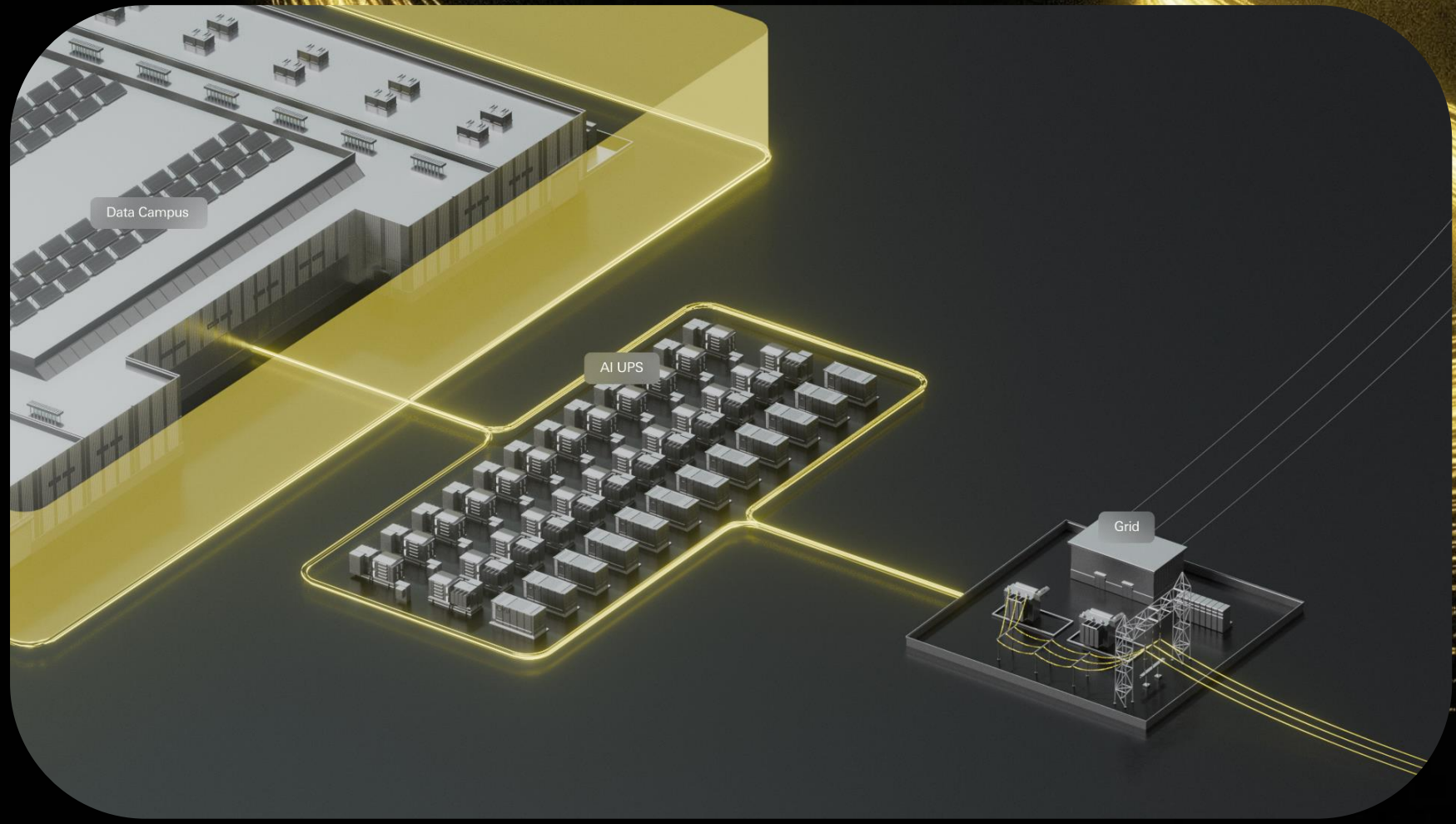


Parallel BESS can't intercept transients – it's always playing catchup.

*For the interconnection process, this means **modeling the BESS and all load equipment** (IT racks, chillers, pumps etc.)*

Grid-Safe Architecture

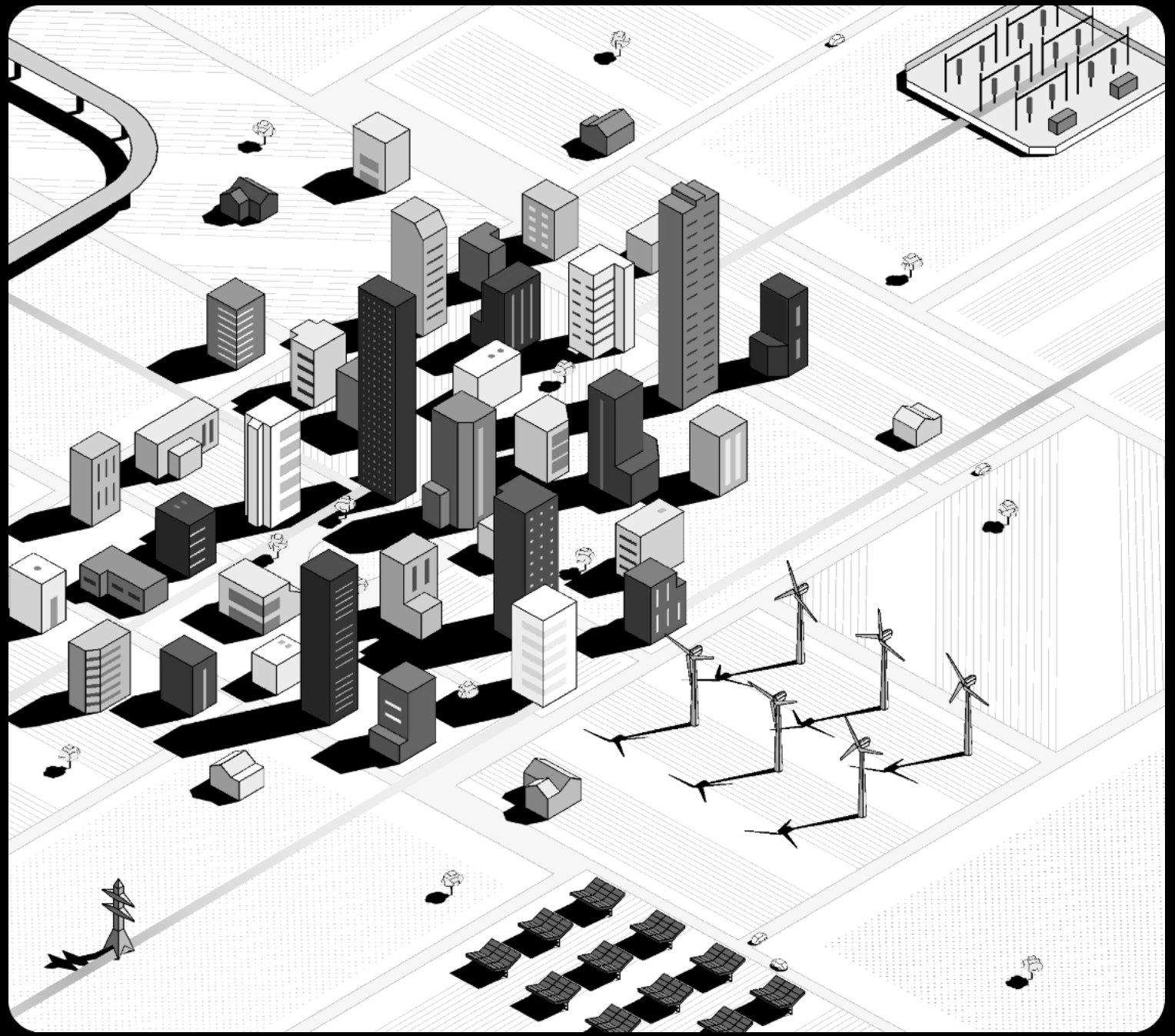
- AI UPS has been approved for a 500+ MW LEL in ERCOT / Oncor territory.
- Commissioning is starting Q2 2026, and the whole campus will end up being 1.5GW+ of total load.



Technical Benefits for the grid

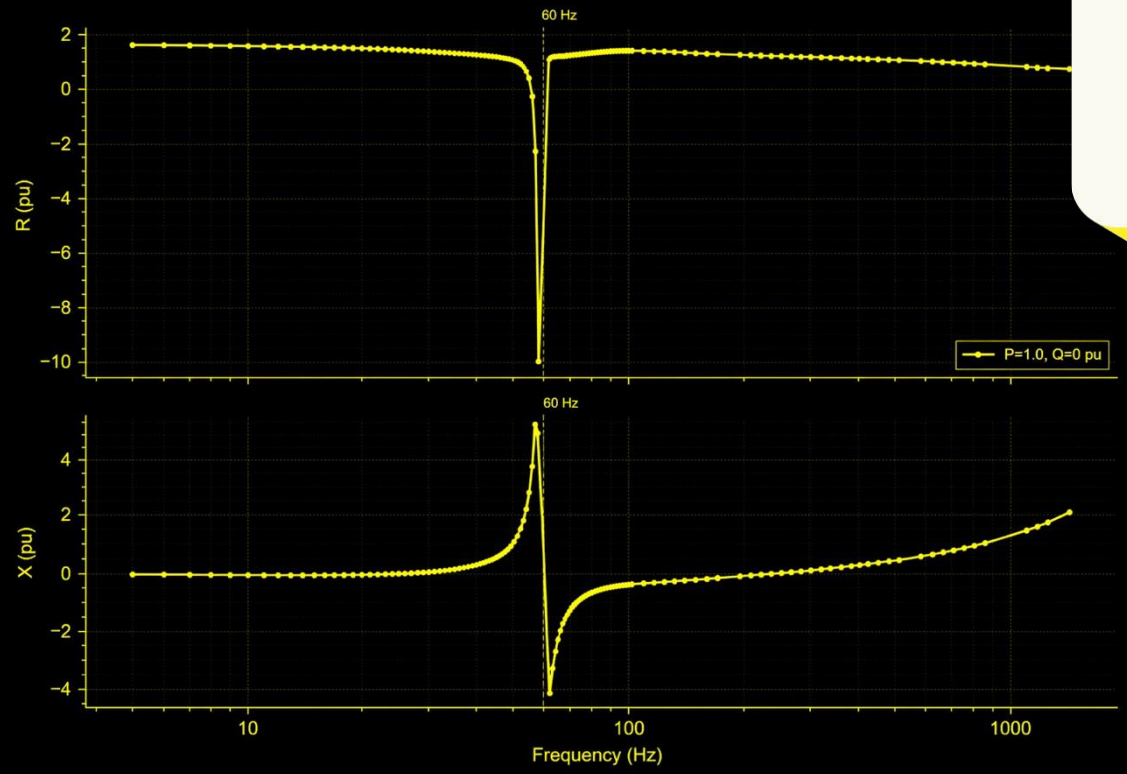
AI UPS™ makes data centers Grid-Safe

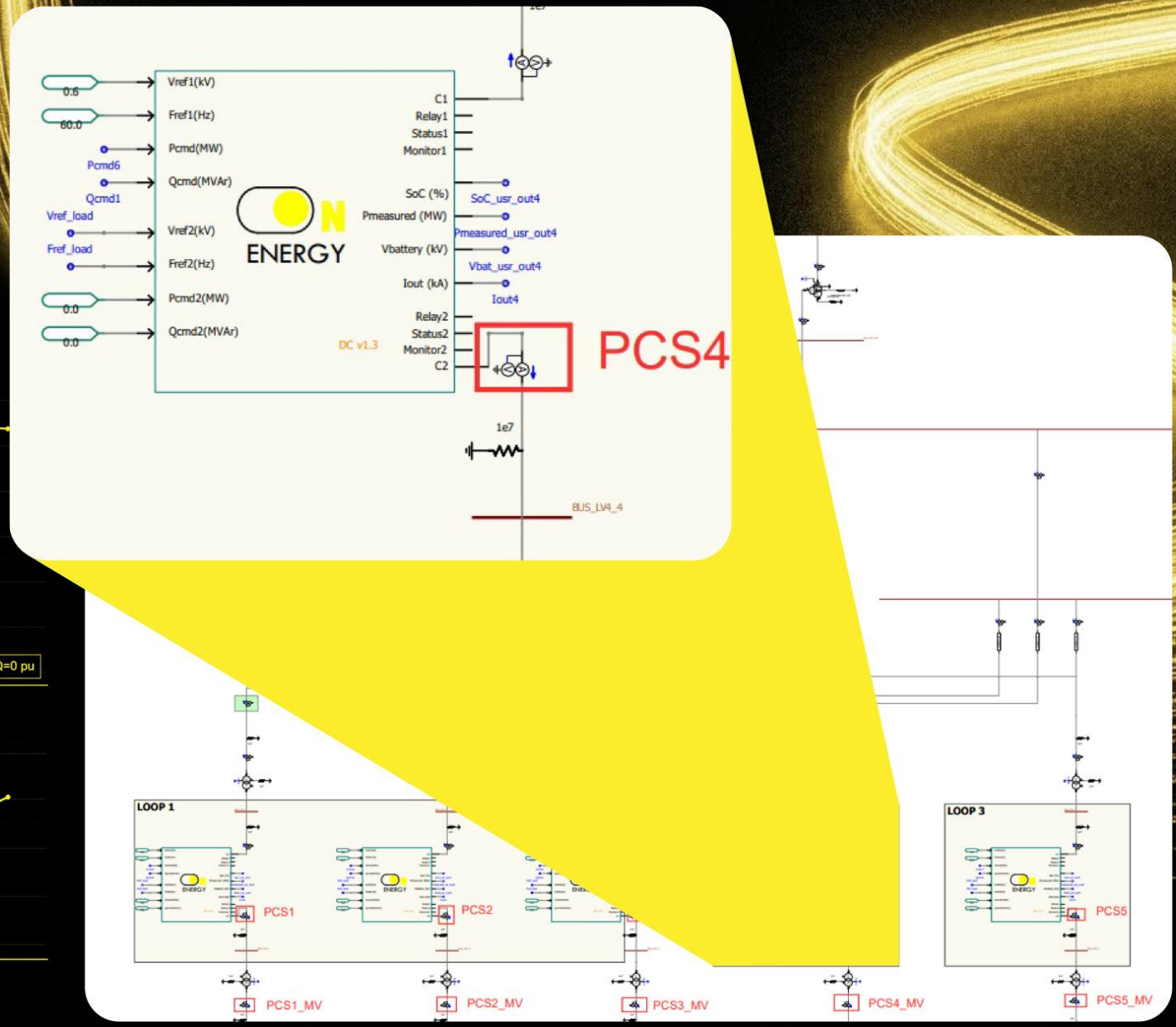
- Voltage Ride Through
- Ramp-Rate Limits
- Peak shaving when the grid is at capacity
- Interconnection speed



Model Alignment

- Load-flow + EMT Models Reviewed and Approved (ERCOT + Oncor)
- Impedance Scanned for Stability





Proven at the National Laboratory of the Rockies

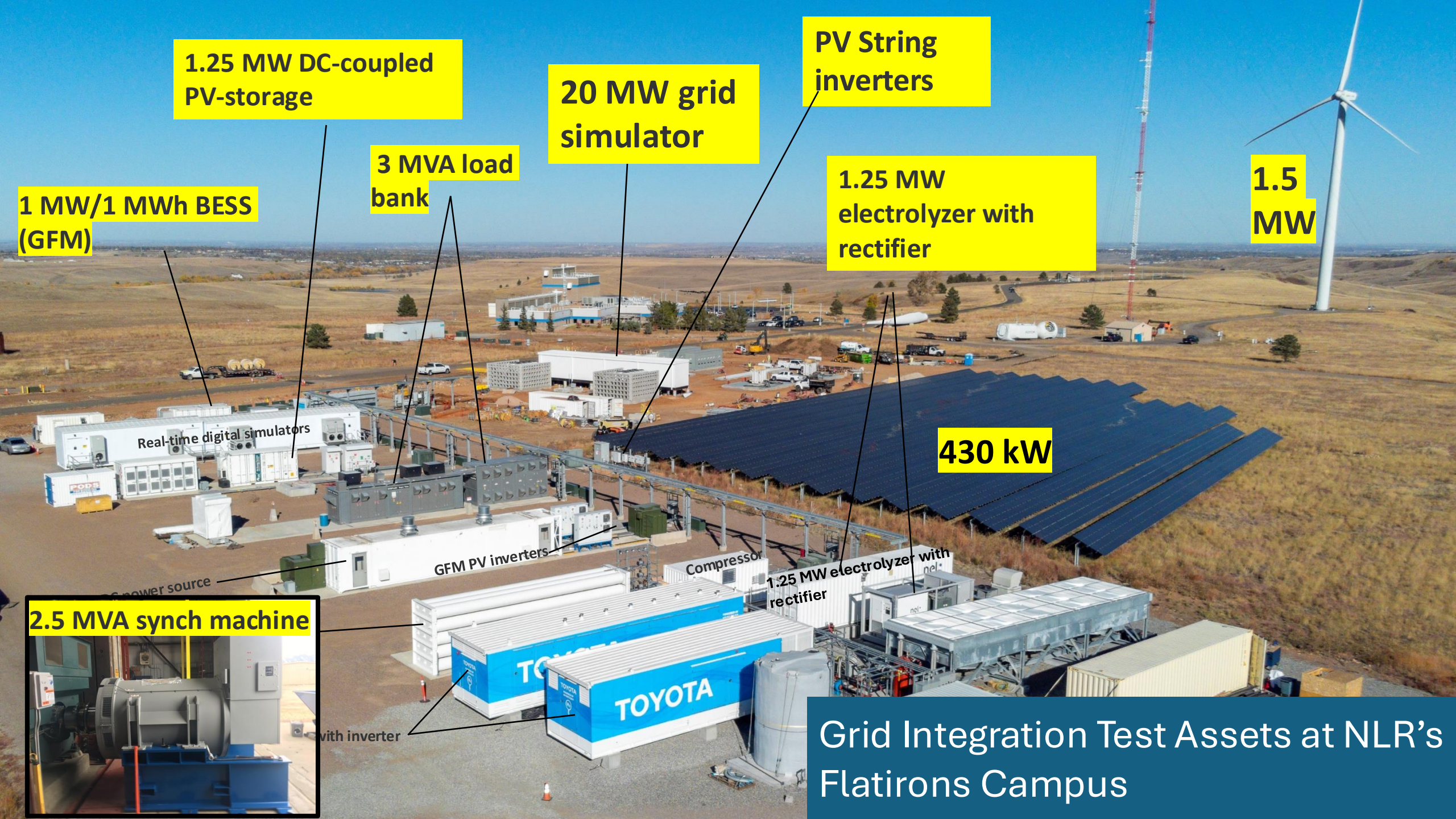
National Laboratory of the Rockies

7 MW
Grid Simulator

20 MW
Load Simulator (400 µs)

3.2 MW
Full Branch Under Test

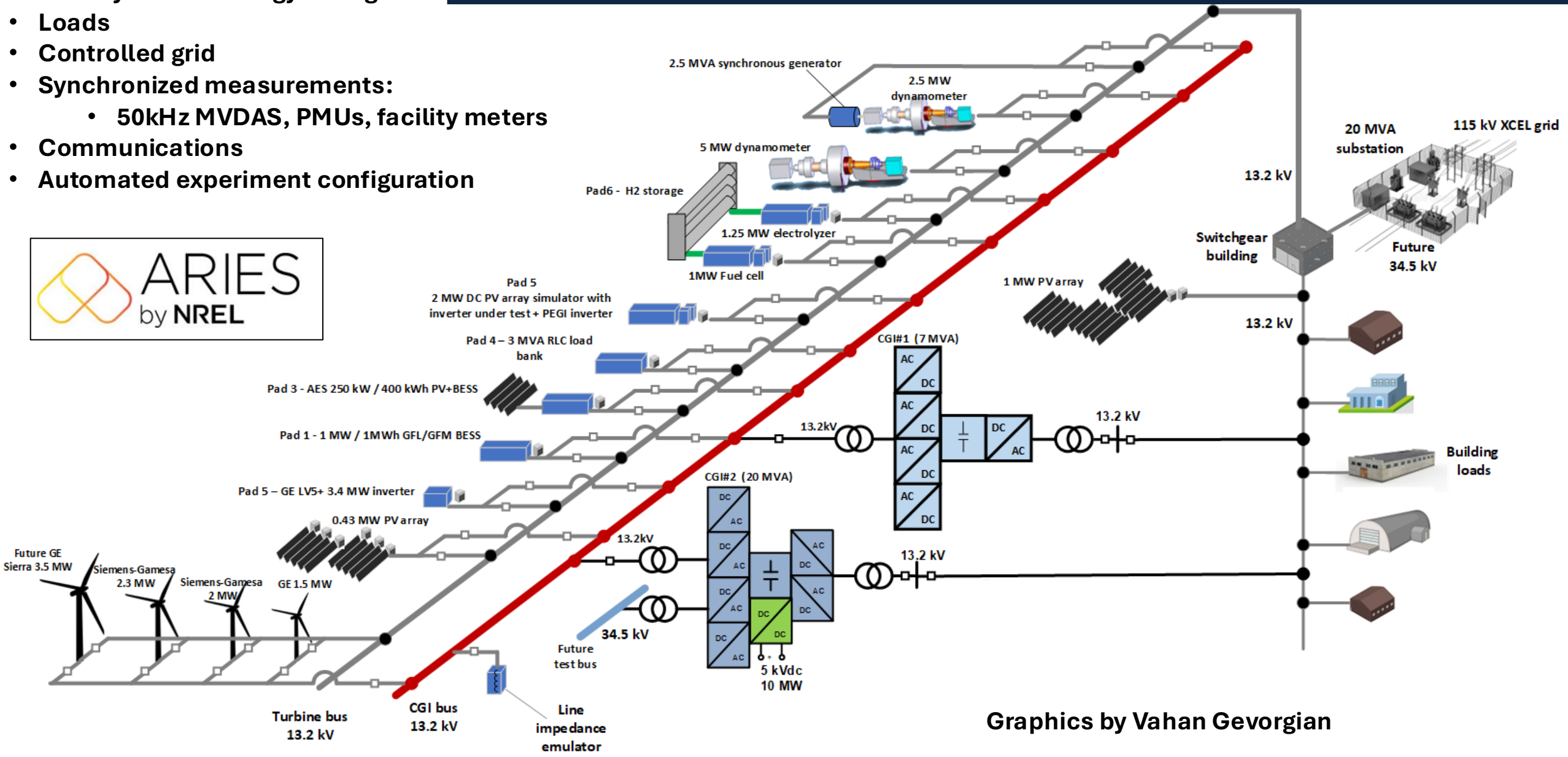
13.2 kV
Medium Voltage Connection



Grid Integration Test Assets at NLR's Flatirons Campus

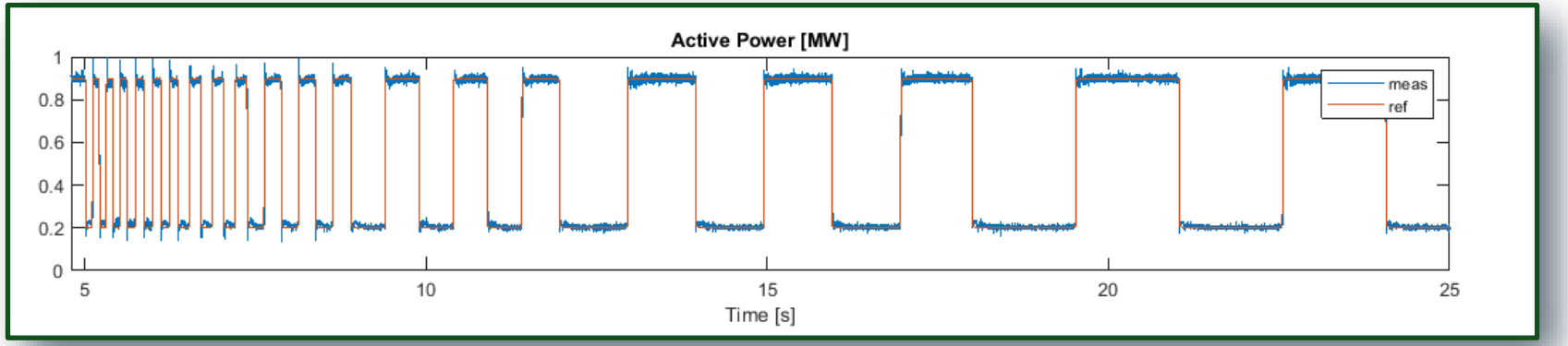
NLR's ARIES Testbed at Flatirons Campus

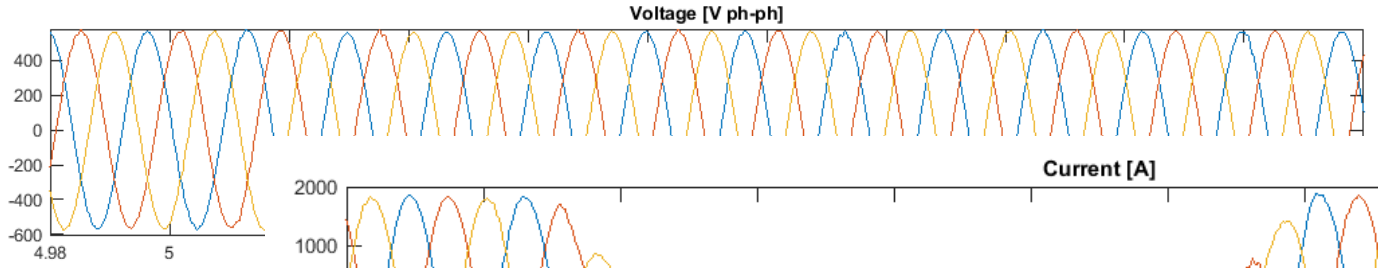
- Utility-scale wind
- Utility-scale PV
- Battery and H2 energy storage
- Loads
- Controlled grid
- Synchronized measurements:
  - 50kHz MVDAS, PMUs, facility meters
- Communications
- Automated experiment configuration

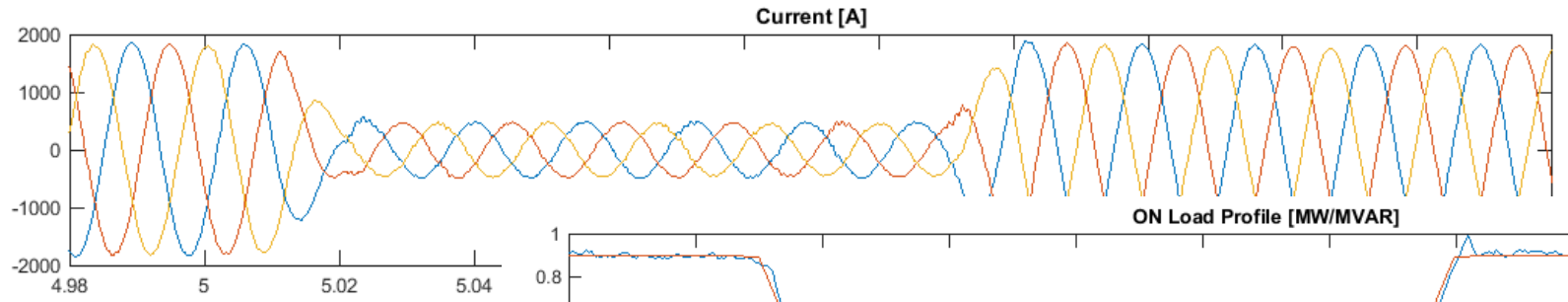


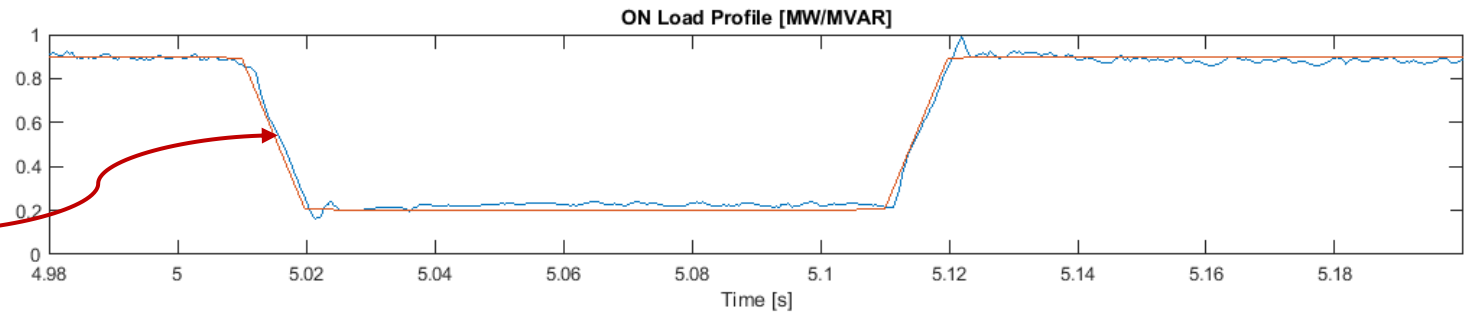
Graphics by Vahan Gevorgian

Test Example: AI Load Profile Emulation







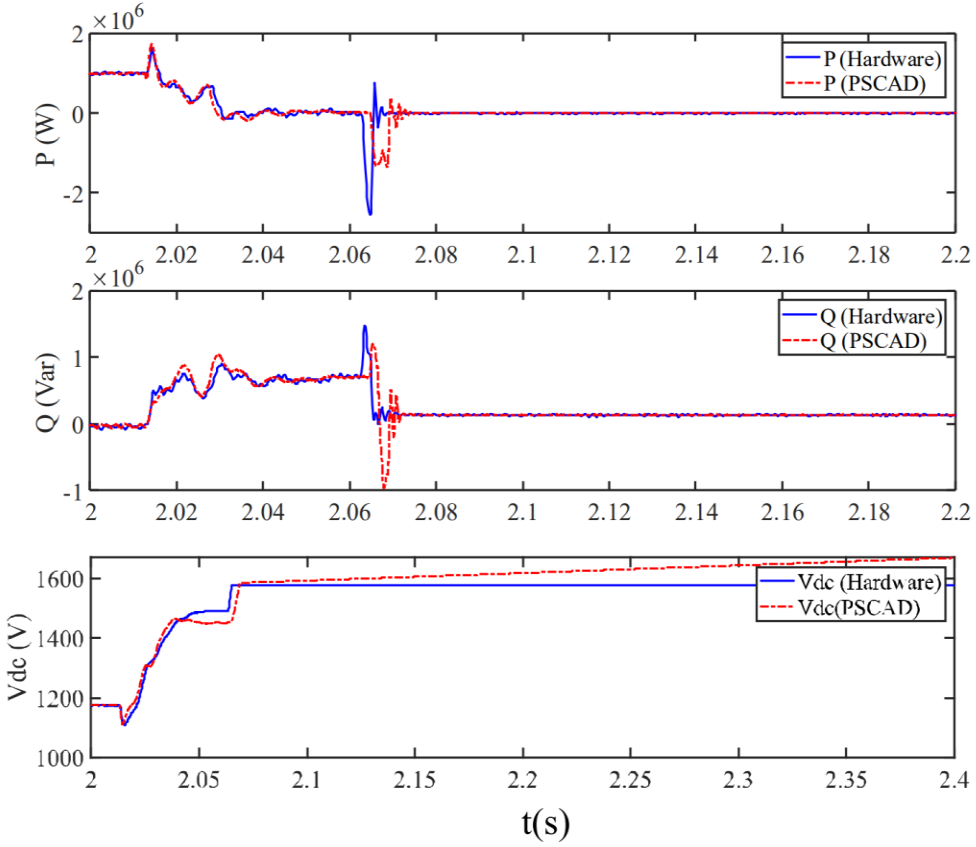


Response of a 2.2 MVA Inverter During AI Load Profile Emulations

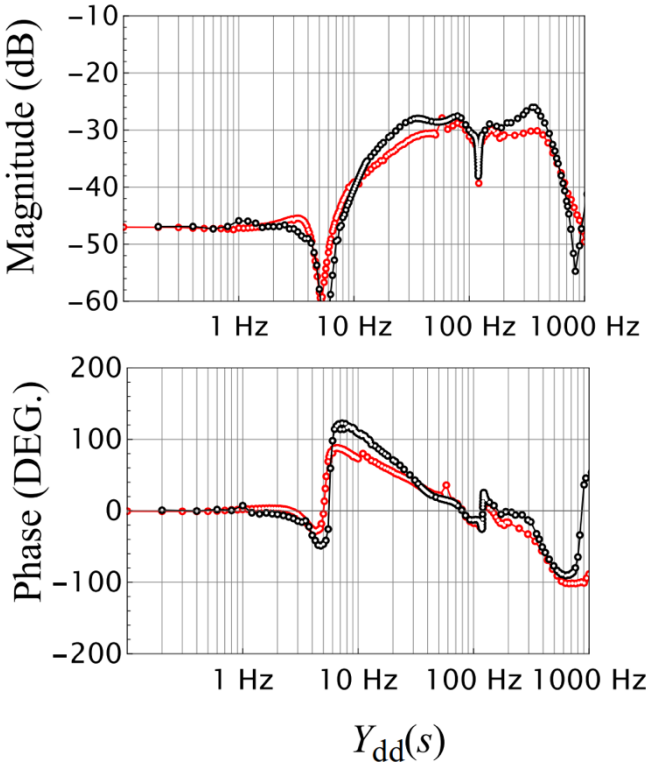
0.8 p.u in 10 ms

Test Example: Transient and Frequency-Domain Testing

- 60% Voltage Dip of 50 ms



- Admittance Scan



Red: EMT Model
Black: Hardware Measurements

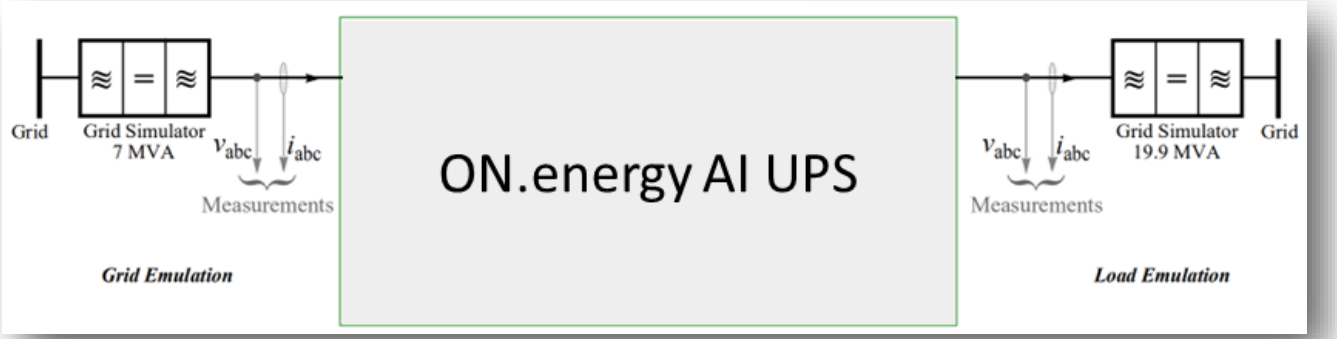
ON.energy AI UPS Test Setup

Grid Safe AI UPS Insulates Grid from AI Load Transients

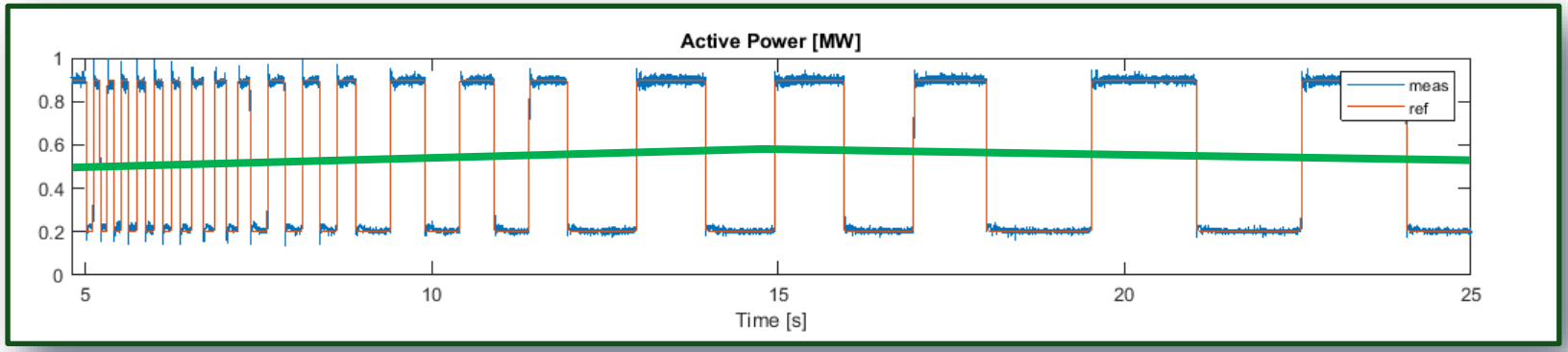
Key ARIES assets used for testing:

- Two grid simulators (7 MVA and 20 MVA) for AI load and grid disturbance emulation, respectively.
- MVIN for emulating low system strength conditions or load-side impedance.

Rapid Timeline. 11/20/2025 12/31/2025



Grid → Load



ERCOT Large Load Requirements are Achievable

NOGRR282:

- Supports Grid Health
- Is Practical
- Proven with ON.AI UPS Hardware At-Scale

LEL-RT-Requirements_LLWG_20Nov2025.pptx

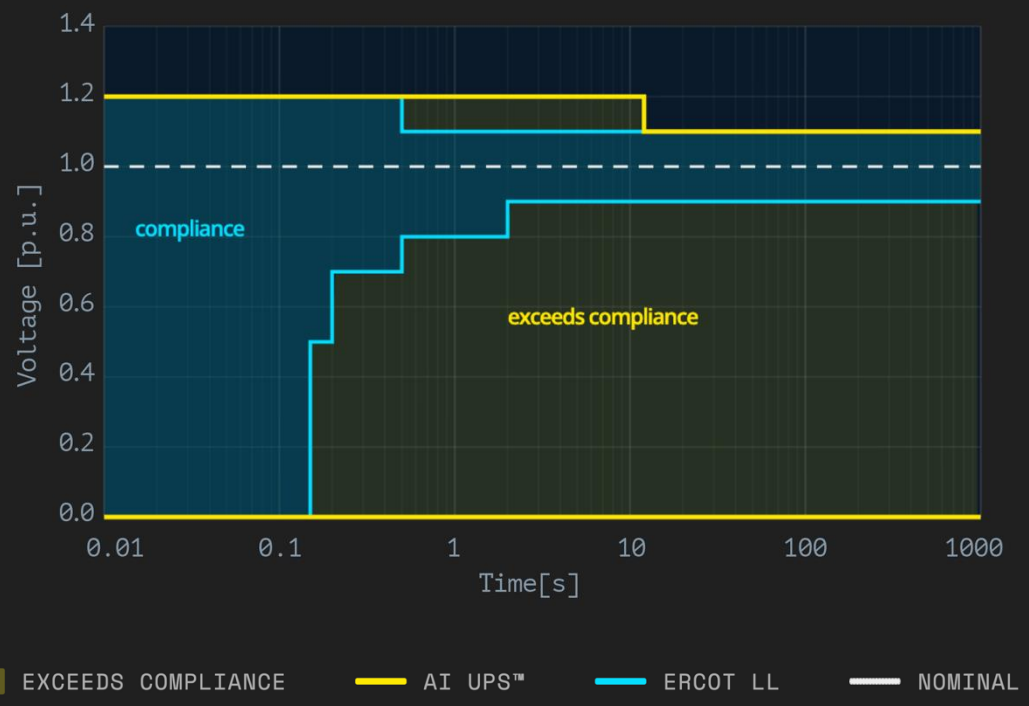
Table A

Root-Mean-Square Voltage (p.u. of nominal)	Minimum Ride-Through Time (seconds)
V > 1.20	May Ride-Through or trip
1.10 < V ≤ 1.20	2.0
0.90 ≤ V ≤ 1.10	Continuous
0.80 ≤ V < 0.90	2.0
0.50 ≤ V < 0.80	0.5
0.20 ≤ V < 0.50	0.25
V < 0.20	0.15

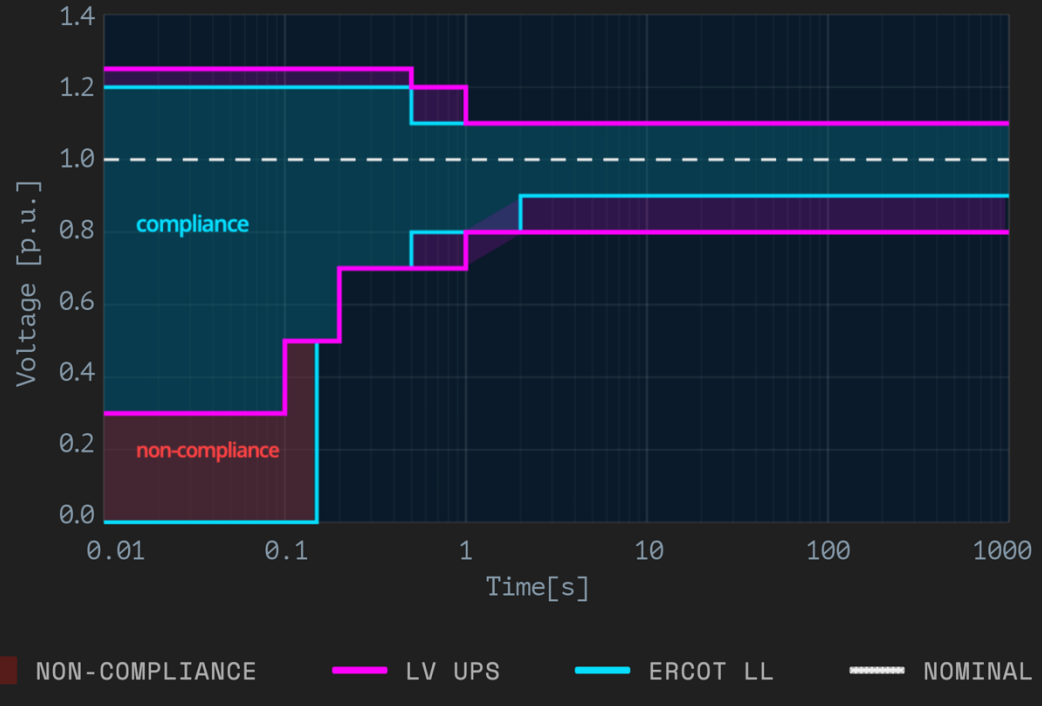
(c) For any voltage condition at the Service Delivery Point or POIB that an LEL is required to ride-through and involves a voltage condition below 0.8 per unit, the LEL may decrease active power consumption from the grid but shall return to at least **90% of its pre-disturbance consumption level from the grid within one second of voltage** at the Service Delivery Point or POIB returning to above 0.90 per unit. Additional performance requirements for the allowable reduction of consumption in active power when voltage drops below 0.8 per unit are defined as follows: *(next slides)*

Exceeds ERCOT Compliance

AI UPS™ (MV UPS)



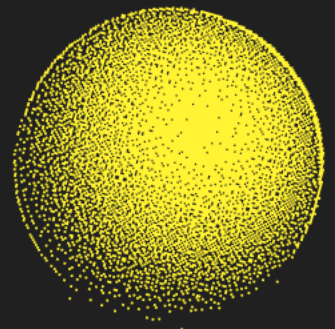
TRADITIONAL LV UPS – NON COMPLIANT



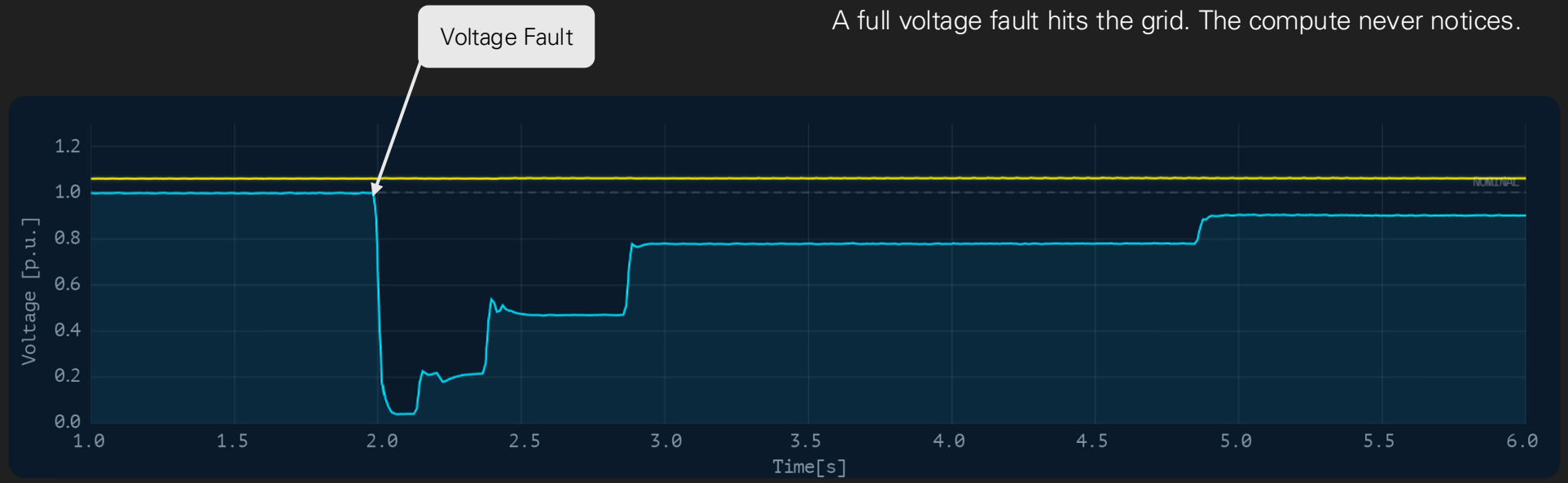
AI UPS™

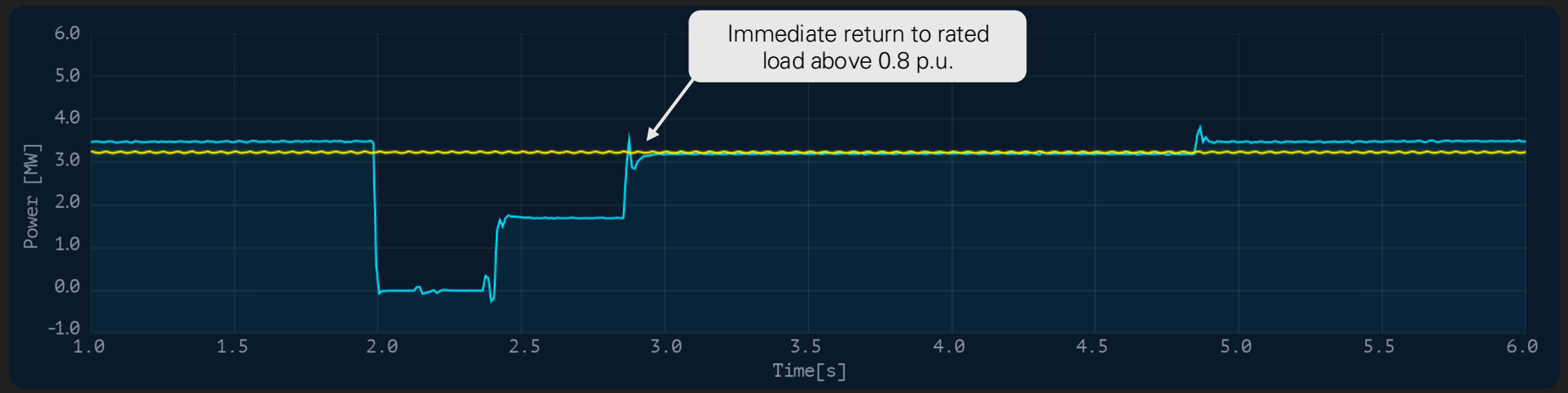
NATIONAL LABORATORY OF THE ROCKIES

Proven VRT Performance



A full voltage fault hits the grid. The compute never notices.





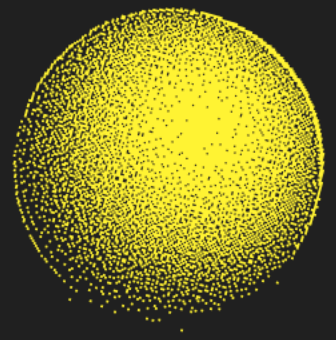
Real data. Full-scale Testbed

AI UPS™

NATIONAL LABORATORY OF THE ROCKIES

Proven GPU Suppression

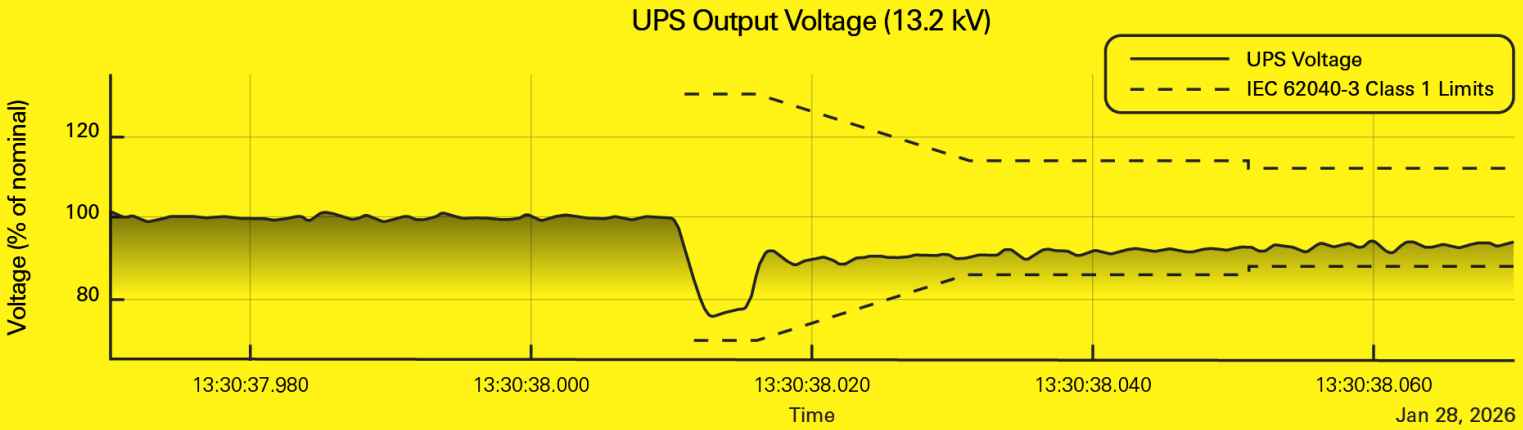
GPUs spike repeatedly. The grid never notices.

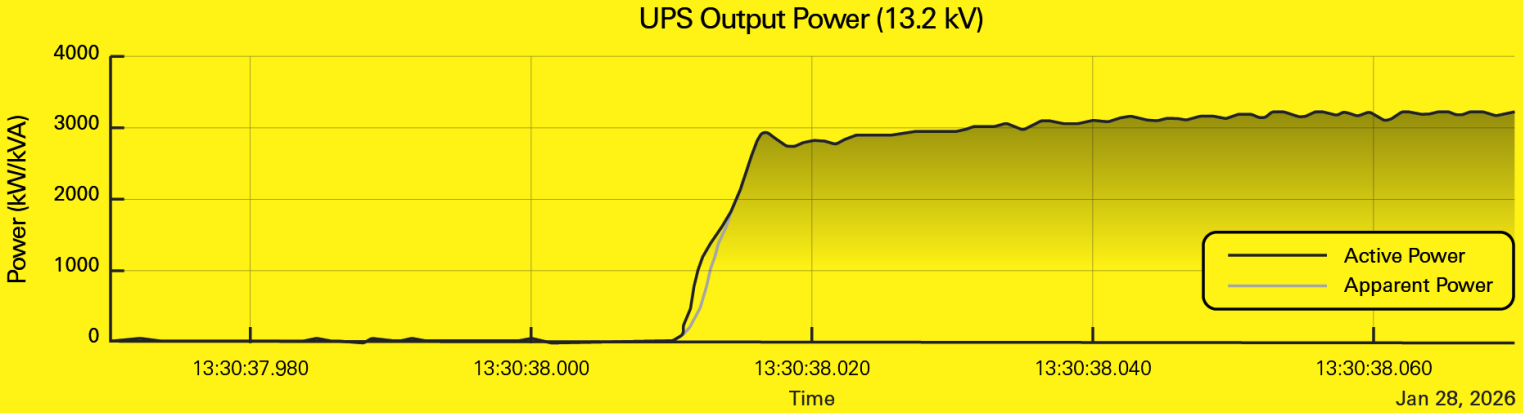


Real data. Full-scale Testbed

UPS Power Quality Results

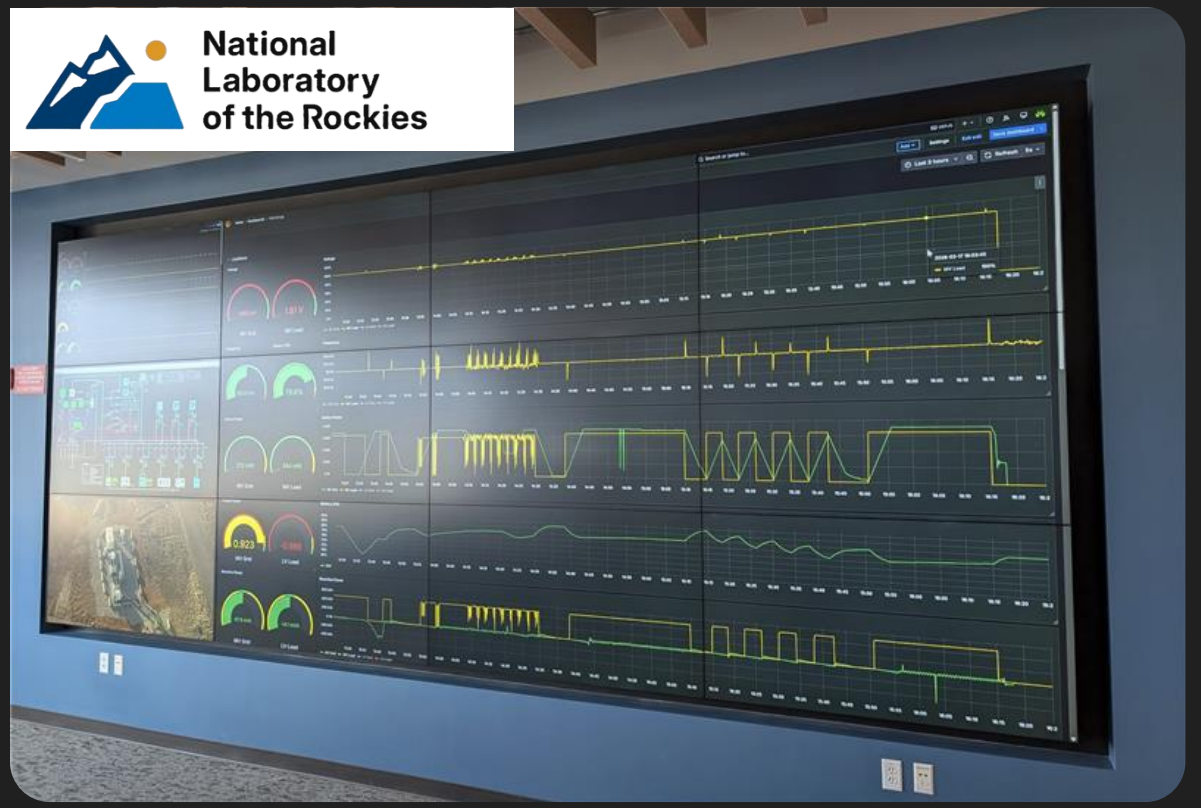
All IEC 62040-3 Class 1 requirements **met or exceeded**





Real loads, real voltage ride through

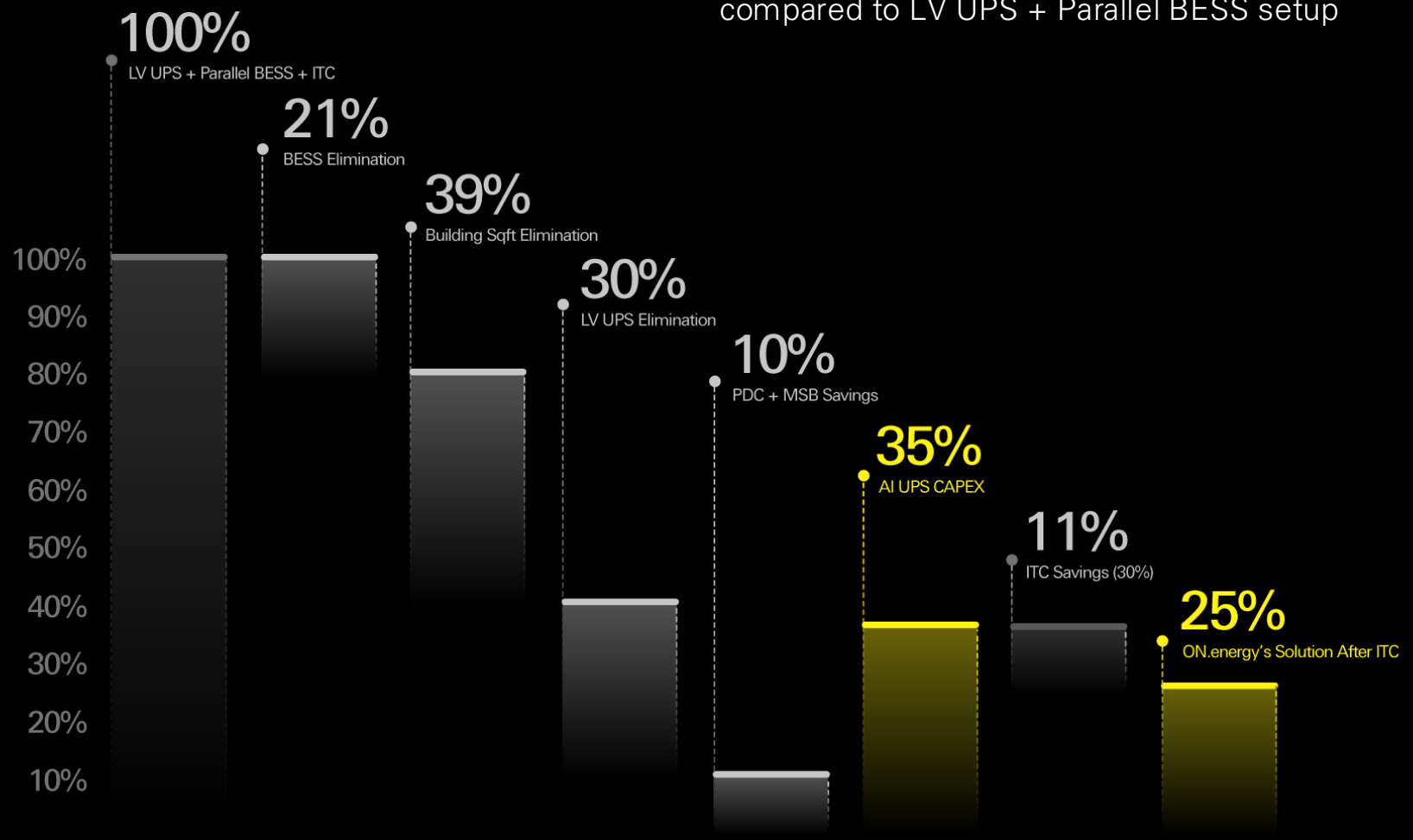
Real data. Full-scale Testbed.
Simultaneous AI load profile during low voltage ride through



Cost Savings
CAPEX: AI UPS™
vs LV UPS + BESS

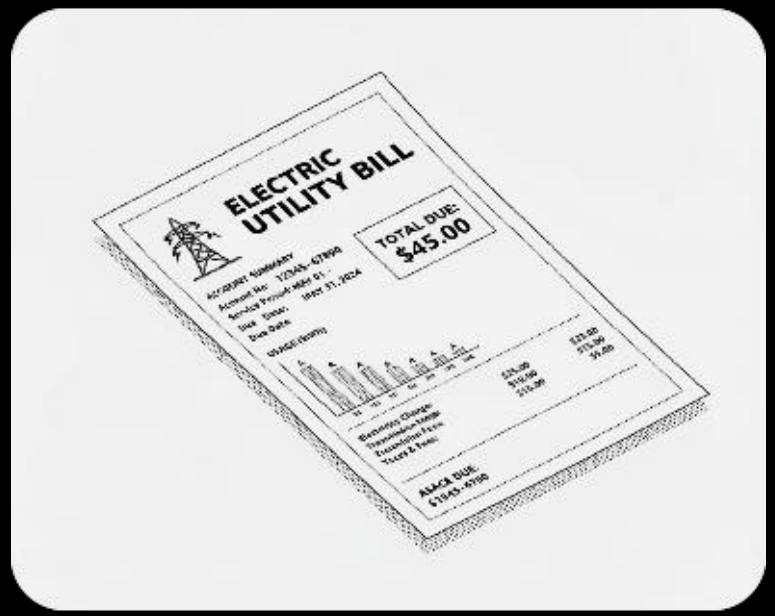
AI UPS™ Capex is 75% less (after ITC) compared to LV UPS + Parallel BESS setup

- Datacenter saves 75%



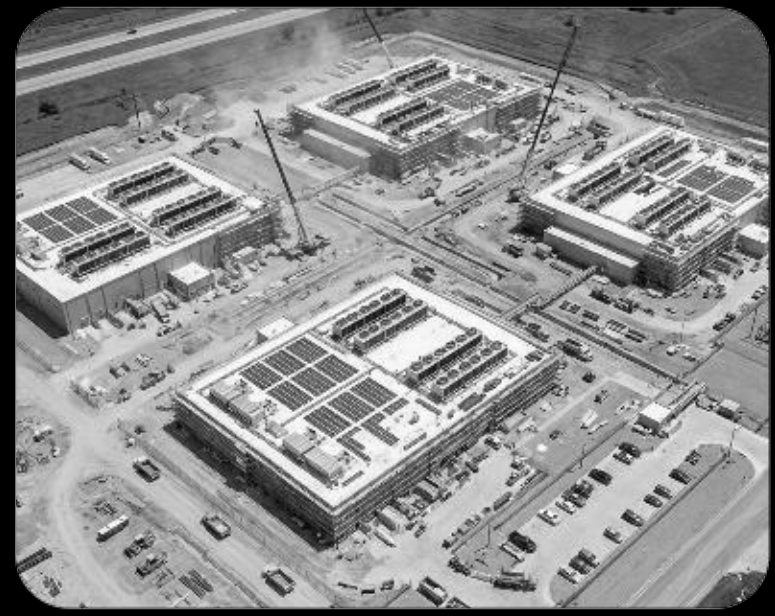
Financial benefits for the data centers

ITC tax credit eligibility



Peak shaving

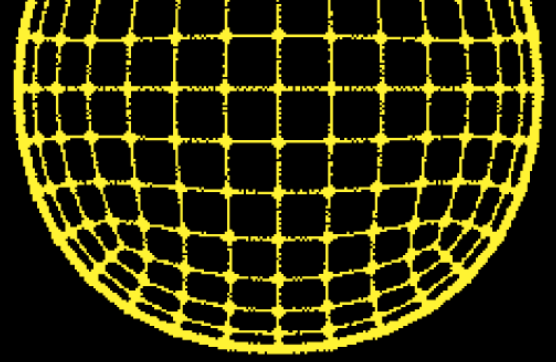
Saves on electric bill



Lower construction costs

AI UPS can go outside without enclosure. Simplify building design

Beyond Backup: Grid Services Revenue



Peak Shaving

Reduce facility demand charges by limiting grid draw during peak periods. Store low-cost energy during off-peak hours.

15–30% demand charge reduction

Demand Response

Participate in utility demand response programs and provide grid support during system emergencies.

$50–200 /kW-year

Energy Arbitrage

Charge during low-price periods, discharge during high-price periods. Particularly valuable in ERCOT and CAISO markets.

Market-dependent

Ancillary Services

Frequency regulation, spinning reserves, and voltage support across multiple market structures.

$20–100 /kW-year

AI UPS™

Unified Power Protection and Grid Integration

CAPABILITY	PERFORMANCE
Transfer Time	Zero (continuous power conversion)
Power Quality	Complete isolation from grid disturbances
Backup Duration	1–8+ hours (configurable)
Scalability	3.2 MW per module to multi-GW per site
Redundancy	N+1 to 2N+1 configurations
Installation	Outdoor-rated (IP55), upstream of facility

The Solution

24/7
Monitoring & Support

IP55
Environmental Rating

0 MS
Transfer Time

>99.9%
Uptime Performance

Industry Standards Compliance

Grid Interconnection

- IEEE 2800 — Inverter-Based Resources
- IEEE 1547 — Distributed Energy Resources
- ERCOT NOGRR245 — Large Load Requirements
- PJM, CAISO, MISO regional requirements

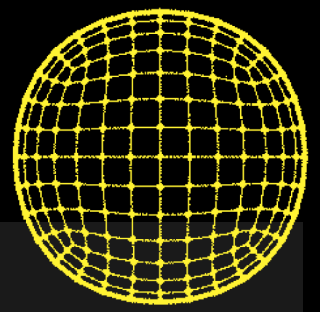
Data Center

- Uptime Institute Tier III/IV
- TIA-942 Infrastructure Standards
- ASHRAE TC 9.9 Environmental Guidelines
- IEC 62040-3 Class 1 UPS Performance

Electrical Safety

- UL 1741 — Inverters & Interconnection
- UL 9540 — Energy Storage Systems Safety
- IEEE 1584 — Arc-Flash Hazard
- NFPA 70 — National Electrical Code

Built Better Across the Board



FACTOR	TRADITIONAL UPS + BESS	AI UPS™
GPU Ripple	Buffering with ms delay	100% filtering
Transfer Time	10–20 ms (STS)	Zero
Grid Compliance	Requires additional equipment	Integrated
Revenue Generation	Limited (BESS only)	Multiple streams
Scalability	Limited by LV architecture	Linear to multi-GW
Maintenance	Separate UPS & BESS systems	Single integrated system
Space Requirements	Indoor UPS + outdoor BESS	Outdoor only

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