

Turning the AI datacenter into a grid asset

Mickael Mauger, PhD

Co-founder & Senior Director of Engineering



Two worlds. One grid.



AI HYPERSCALERS

<18 months

to build an AI datacenter

37 GW¹

of new US load in 2027 (44GW capacity installed to date)

>90 MW/s²

load swings from GPU fleets

POWER UTILITIES

5-7 years

to plan generation and transmission

20 MW/min³

hard interconnection ramp limit



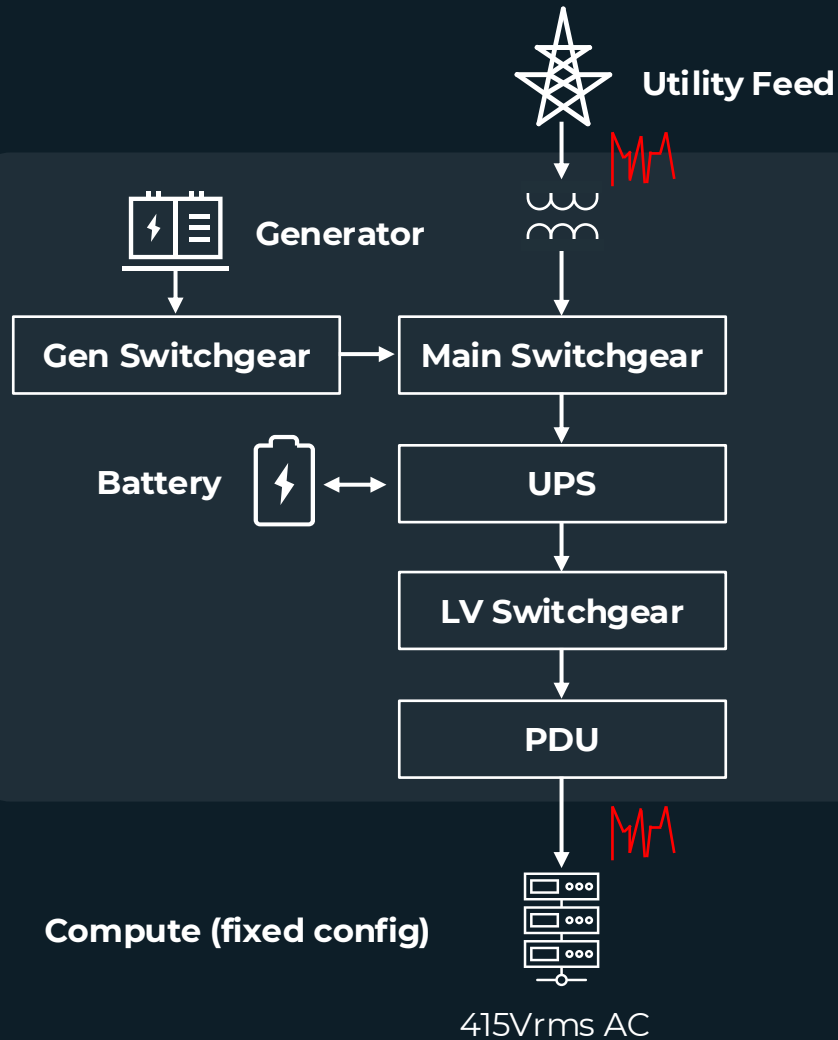
Consensus estimate is that ~15GW of AI compute produced in 2027 cannot be turned on in 2027.

This is harder than just finding power, as you also need to build out all the transformers, wiring, liquid-cooling, (massive) chillers & complex networking.

5:17 PM · Aug 29, 2026 · 6.6M Views

Bridging the two worlds needs a flexible, adaptive power architecture.

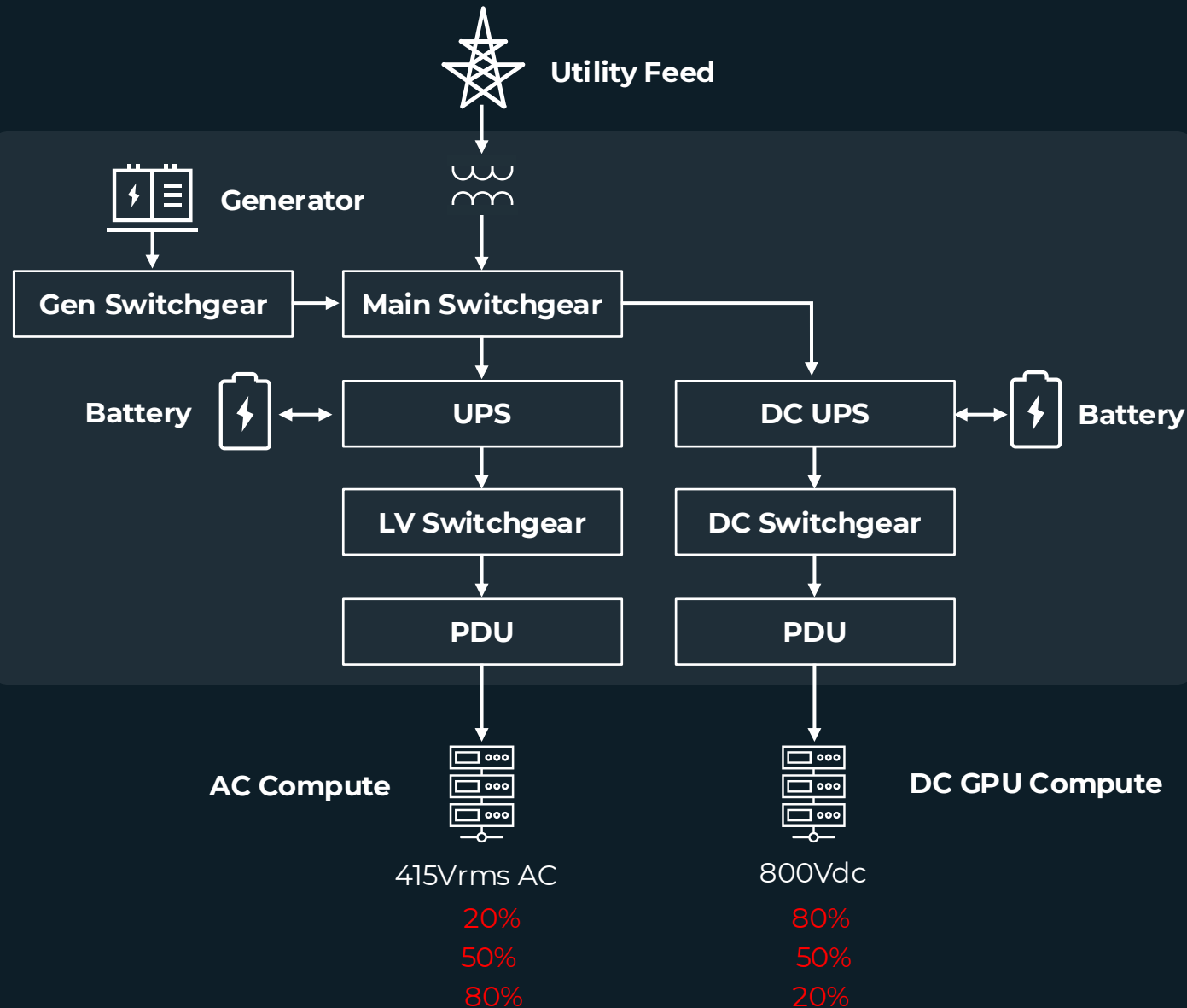
Traditional datacenter power architecture breaks under AI



Load volatility goes directly to the grid and creates instabilities

Need to oversize the equipment to handle fluctuating power

How about DC power distribution?

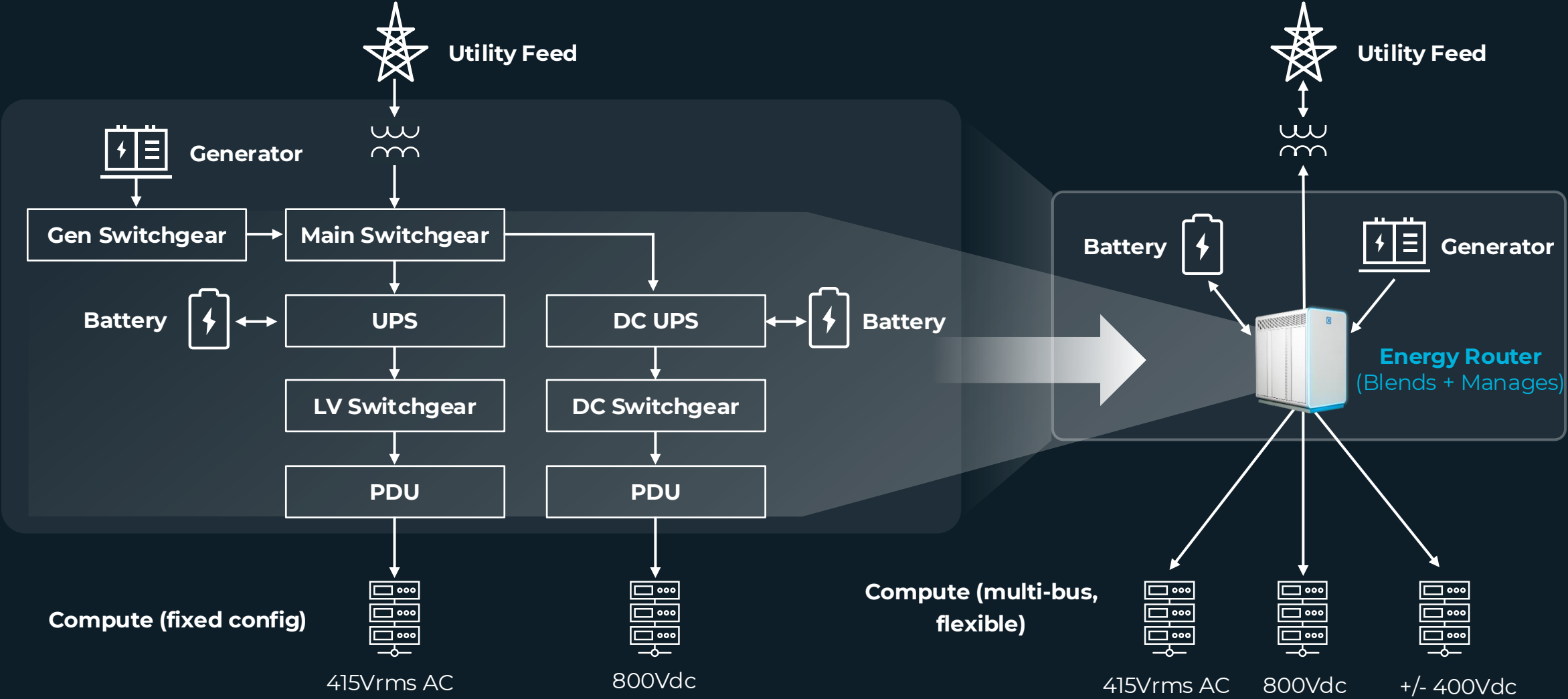


2x power infrastructure?

What is the power demand split between AC/DC?

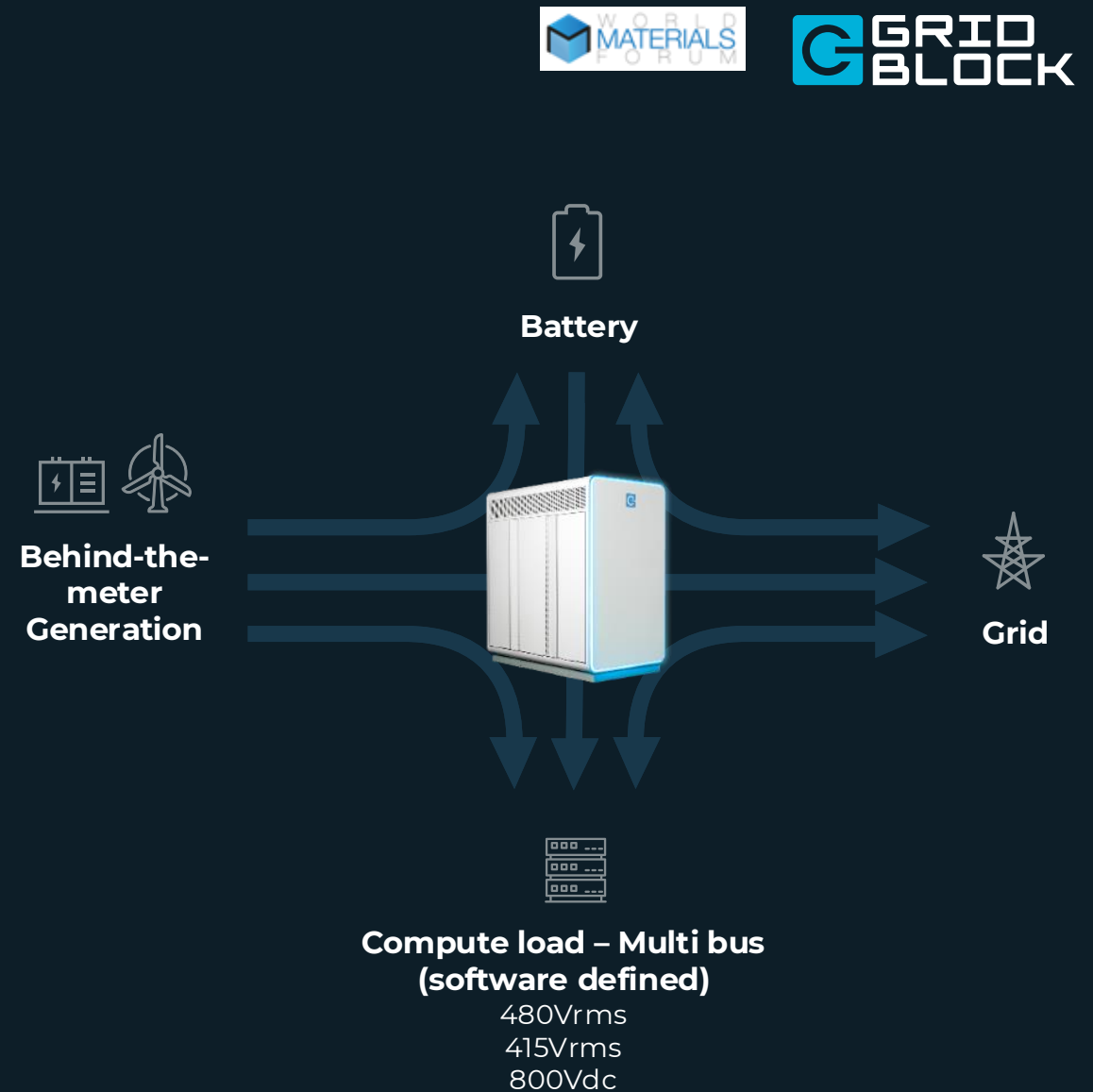
Now, and... 5 years from now?

Energy routing for a flexible, adaptive and scalable power fabric



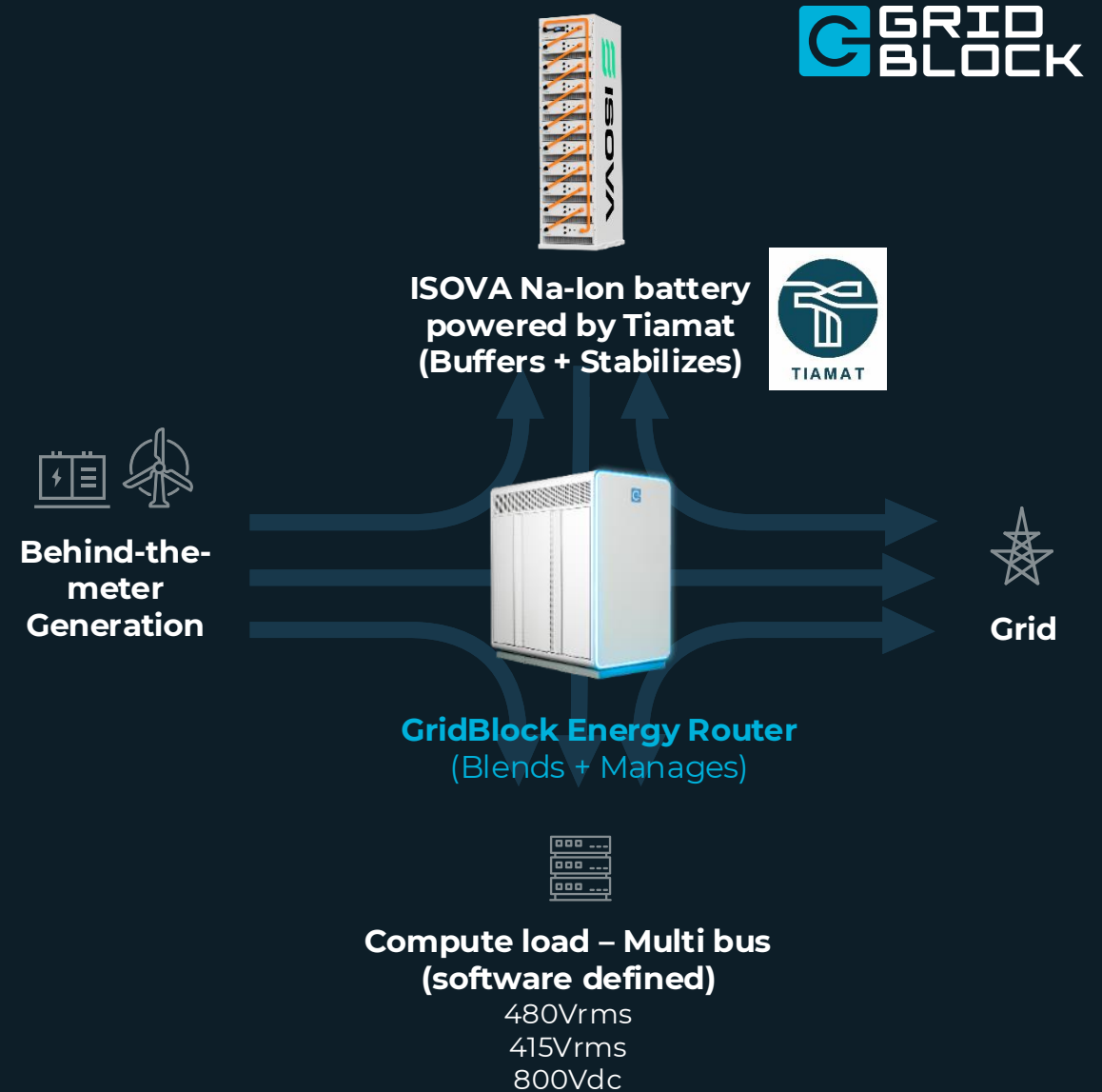
GridBlock Energy routing: Flexible and scalable power for the AI datacenter

- Energy routing creates a **modular power fabric** between grid, storage, on-site generation and data-center loads
- **Power is blended and managed dynamically** rather than locked into fixed point-to-point paths
- **Native hybridization** meets utility requirements with AI load smoothing and accelerates time-to-power. Supports the grid in times of need.
- **Lean, compact and simpler architecture** reduces material use (e.g. copper, Hi-B Silicon Steel)
- **Flexible, scalable software-defined power** supports existing and emerging distribution modes (AC and DC). Infrastructure adapts over time: **no overbuild, no rip-and-replace.**



GridBlock Energy routing: Flexible and scalable power for the AI datacenter

- Energy routing creates a **modular power fabric** between grid, storage, on-site generation and data-center loads
- **Power is blended and managed dynamically** rather than locked into fixed point-to-point paths
- **Native hybridization** meets utility requirements with AI load smoothing and accelerates time-to-power. Supports the grid in times of need.
- **Lean, compact and simpler architecture** reduces material use (e.g. copper, Hi-B Silicon Steel)
- **Flexible, scalable software-defined power** supports existing and emerging distribution modes (AC and DC). Infrastructure adapts over time: **no overbuild, no rip-and-replace.**



ISOVA Na-Ion power battery rack

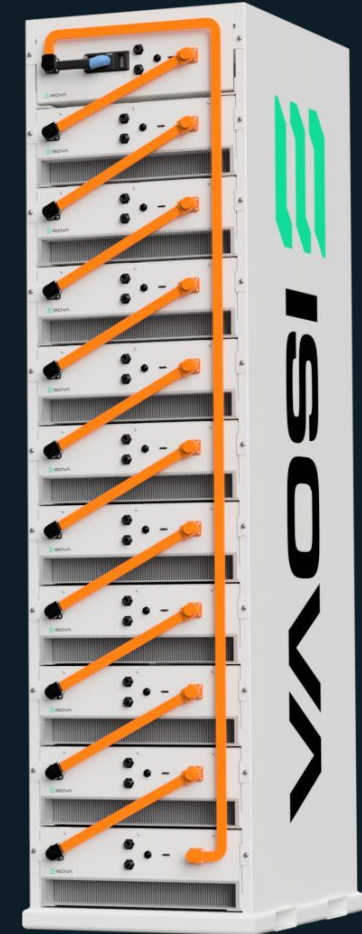


Continuous load smoothing on any AI load profile
(training + inference)

1MW/50kWh Rack in 44OU

Air-cooled
Safe Chemistry
No Lithium

Flexible deployment in data hall, electrical room
or outdoor systems



2290 x 595 x 765mm
44OU

Footprint Comparison for 100MW AI Datacenter

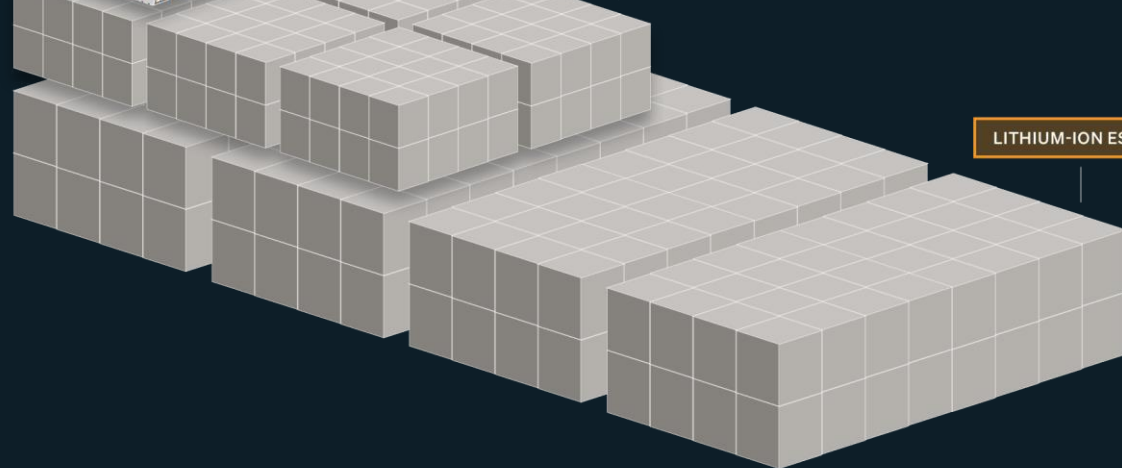
ISOVA NA-ION POWER BATTERY



SUPERCAPACITOR ESS



LITHIUM-ION ESS



ISOVA Power Battery

Energy + Power Dense

TYPICAL SYSTEM METRICS:

Energy Density: 50 Wh/L

Power Density: 1000 W/L

FOOTPRINT 1MWh/100MW

Balanced Sizing

 $62 \text{ m}^3 / 27 \text{ m}^2$

TOTAL AREA


 27 m^2

Supercapacitor ESS

Power Dense

TYPICAL SYSTEM METRICS:

Energy Density: 1.2 Wh/L

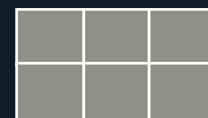
Power Density: 1100 W/L

FOOTPRINT 1MWh/100MW

Energy-constrained

 $830 \text{ m}^3 / 360 \text{ m}^2$

TOTAL AREA


 360 m^2

Lithium-Ion ESS

Energy Dense

TYPICAL SYSTEM METRICS:

Energy Density: 80 Wh/L

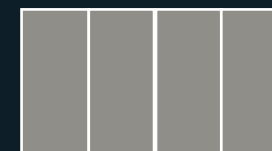
Power Density: 40 W/L

FOOTPRINT 1MWh/100MW

Power-constrained

 $1500 \text{ m}^3 / 650 \text{ m}^2$

TOTAL AREA


 650 m^2

95% footprint reduction!

Infrastructure that adapts instead of overbuilds.

GridBlock turns datacenter power infrastructure into an adaptive, software-orchestrated layer:

Up to 40%

peak shaving on grid power

Up to 30%

energy savings

Up to 5x

leaner system footprint

- Faster time-to-power: ramp-rate held within utility requirements, quicker interconnection
- More GPU for a given site power, at a reduced cost/token
- Adapts across AC and DC as the mix changes: no overbuild, no rip-and-replace
- Datacenters become a grid asset, pushing power back when the grid needs it

Build lean. Build smart. Build flexible.