



AIDC Energy Storage Solution

Create Tier-1 BESS Assets

16 Years

Established in 2019, core team with over 16 years BESS experience

12GWh+

12GWh+ and served more than 100 customers

BBB

Battery StorageTech Bankability Ratings Report 2025 Q1

Tier 1

Tier-1 BESS supplier by BloombergNEF (2024-2026)

5 Continents

Leading BESS Manufacturer with Strong R&D Capabilities, Operating Across Five Continents

15 Years

15-Year Warranty Backed by Munich Re

TOP10

Top 10 Global Energy Storage System Original Equipment Supplier by S&P Global

ESG

Black & Veatch's Bankability and ESG Supply Chain Traceability Reports



Global data-center electricity demand is expected to more than double by 2030, driven largely by AI adoption and rising compute intensity.



01

Technical Challenges
from the Computing
Power Surge

Growth and challenges

Challenge 1: Severe Shortages of Electrical Equipment

Nearly half of the data center projects planned in the United States this year are expected to face delays or cancellations, with shortages of transformers, power supplies, and other electrical equipment being one of the key causes.

~50%

Projects Delayed or Cancelled
Data Centers Planned in the U.S. for 2026

5 Years

Transformer Delivery Time
Extended from 24–30 Months to 5 Years

Challenge 2: Seriousness of AI Training Load Fluctuations

Millisecond-level large fluctuations. Step-like cycles alternating between “fully off (0%)” - “fully on (100%)” over seconds, even milliseconds.

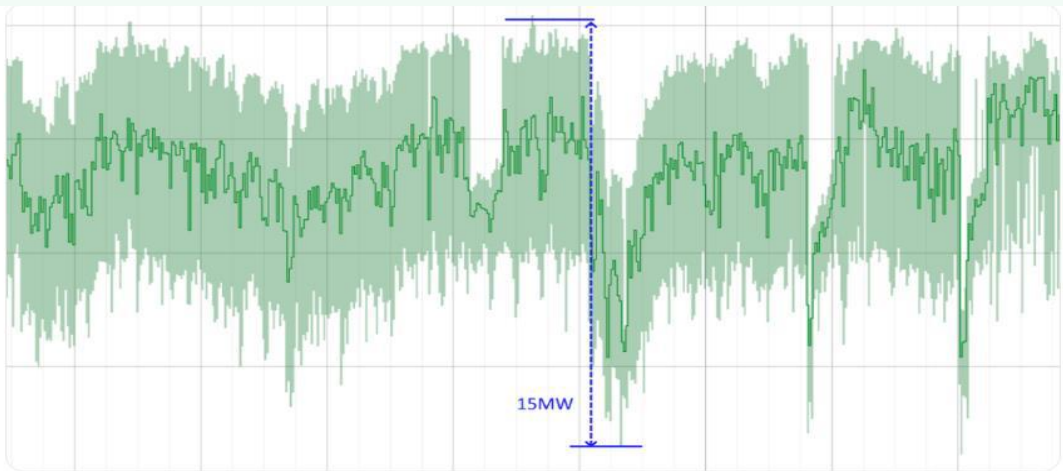
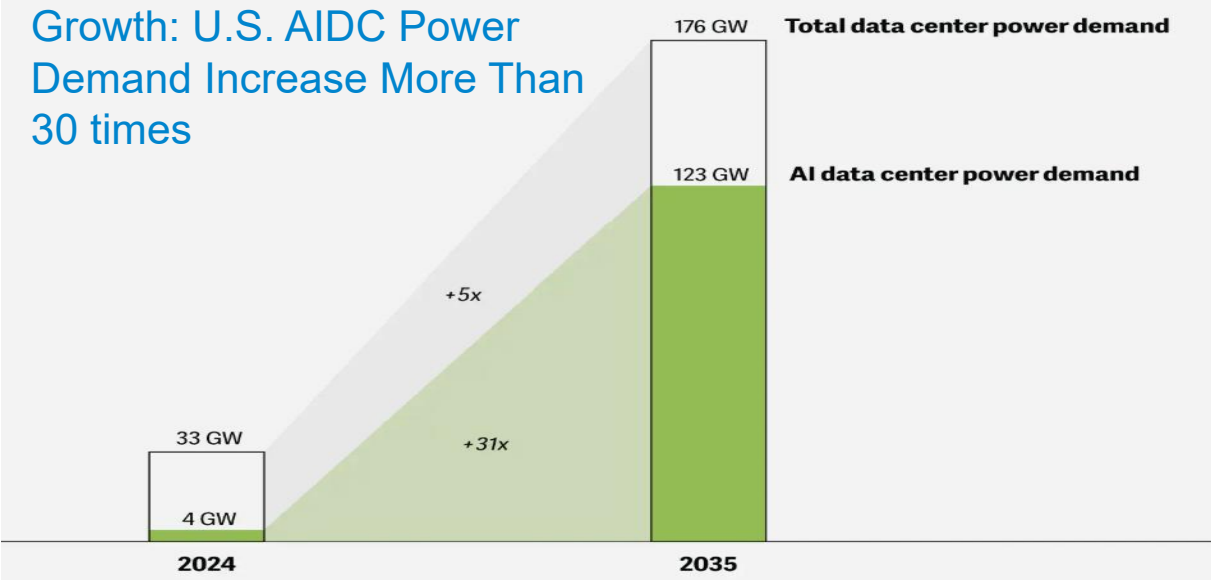


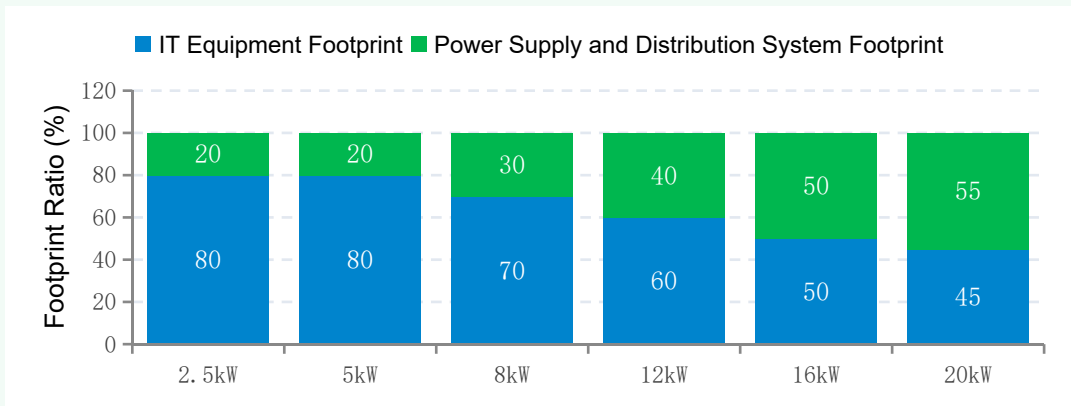
Fig. 1. Large power fluctuations observed on cluster level with large-scale synchronized ML workloads

Growth: U.S. AIDC Power Demand Increase More Than 30 times



Challenge 3: Power distribution equipment footprint is growing

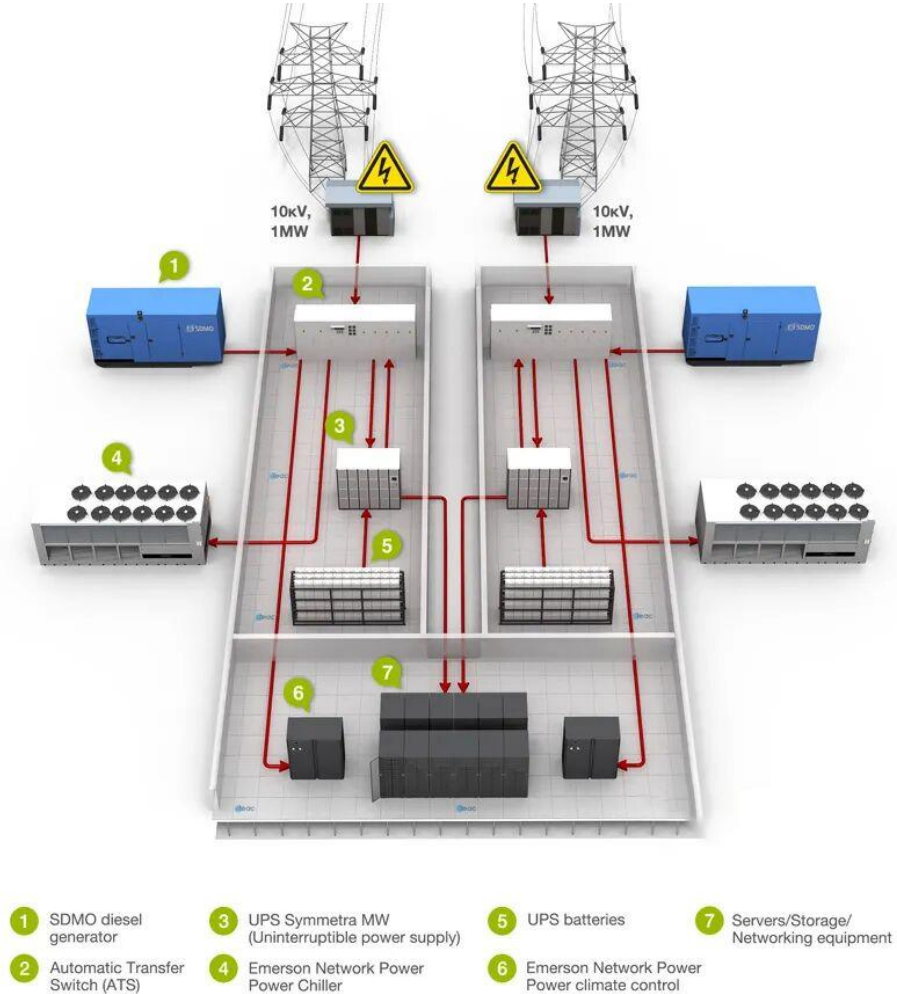
Single rack power density is increasing from 20 kW to over 100 kW, driving exponential growth in power supply and distribution demand



An aerial photograph of a city, likely San Francisco, showing a dense urban area with a prominent bridge and surrounding hills. The image is overlaid with a blue and green gradient, with the blue being more prominent on the left and the green on the right.

02

Application Scenarios and Solutions



Two Core Entry Points for Energy Storage System Applications



01. Backup Power
Replacing traditional lead-acid batteries to provide uninterruptible backup power with longer runtime and higher reliability.



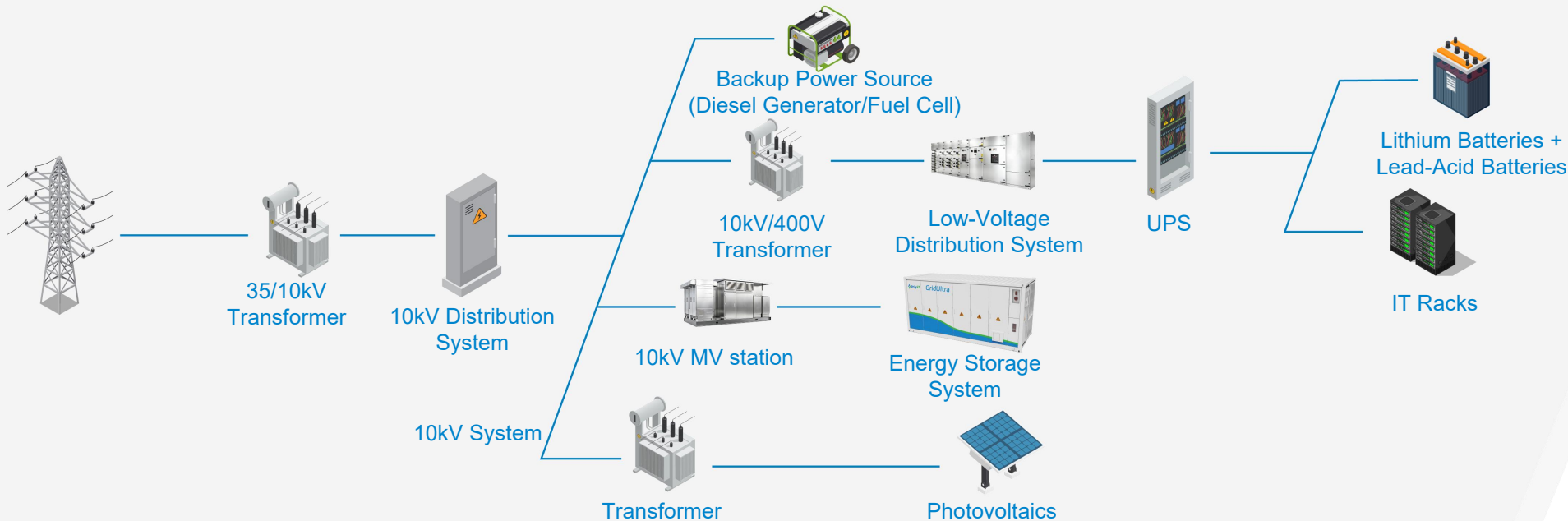
02. Power Supply Optimization
Partially replacing grid power usage while reducing operating costs through peak shaving, valley filling, and output smoothing strategies, while also generating revenue through participation in ancillary grid services.

Traditional Data Center – Energy Storage Solution

Traditional Data Center Retrofit Logic: Small-Scale Green Energy × Peak Shaving and Valley Filling × Energy Storage Buffering × Integrated Backup Power Operations

Core Architecture Logic

- Applicable Scenarios:
Existing IDC Facilities /
Minimal Retrofit Requirements
- Power Supply Chain:
Utility Grid → Transformer →
Low Voltage → UPS → IT Racks
- Backup Power Architecture:
Retain Traditional UPS +
Lead-Acid Batteries
- Energy Storage Integration:
Grid-connected on the 10 kV medium-voltage side, combined
with photovoltaics and small-scale wind power to form a zero-
carbon campus and enable a regional virtual power plant



Direct Green Power Connection to Data Centers – Energy Storage Solution



Zero-Carbon IDC Architecture Logic: Direct Green Power Connection × Energy Storage Buffering × Integrated Backup Power Operations

Core Architecture Logic

Applicable Scenarios:

New Zero-Carbon Campuses / Large-Scale Green Power Consumption

Power Supply Chain:

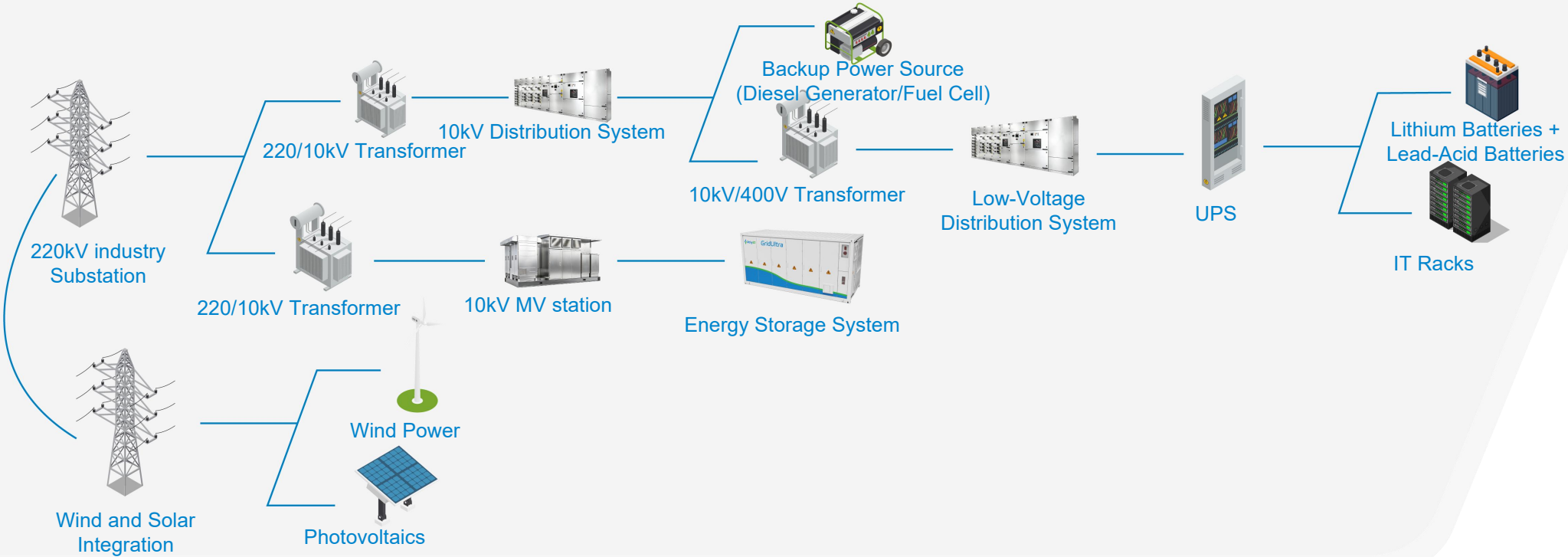
Green Power & Utility Grid → Transformer → Low Voltage → UPS → IT Racks

Backup Power Architecture:

Lithium Batteries + Lead-Acid Batteries + UPS, Enabling Daily Backup Power Utilization

Energy Storage Integration:

Grid-connected on the medium- and high-voltage side, combined with photovoltaics and wind power to form a zero-carbon campus and enable a regional virtual power plant

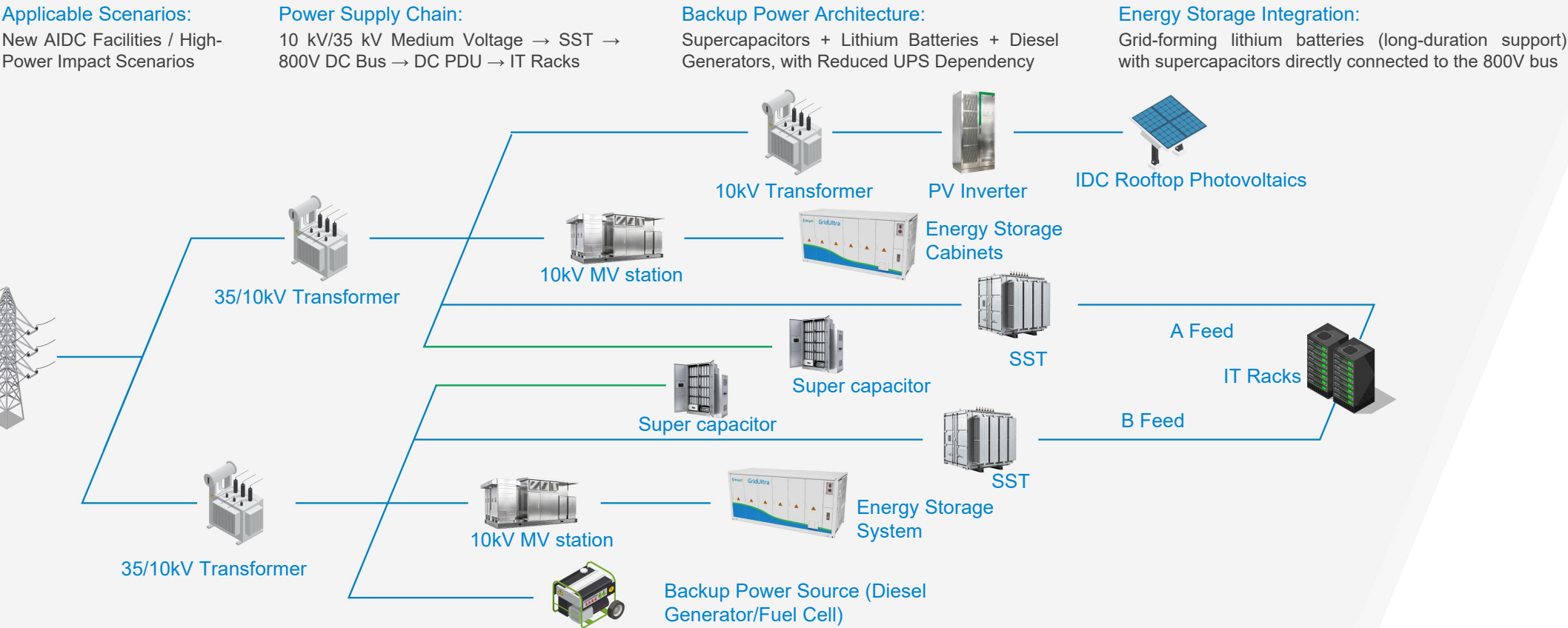


AIDC Data Center – Lithium Battery & Supercapacitor Solution



AIDC Architecture Logic: Direct Green Power Connection × Energy Storage Buffering × Integrated Backup Power Operations × Power Regulation

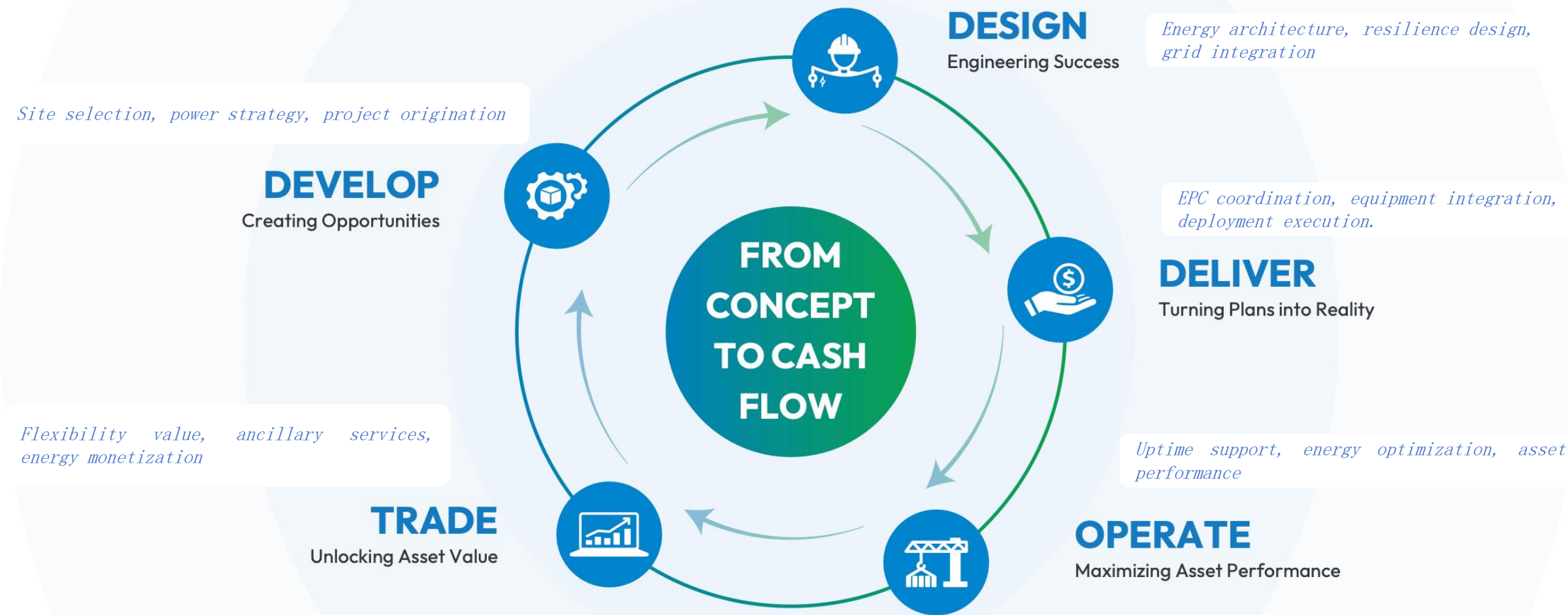
Core Architecture Logic



How RelyEZ Supports AI Datacenter Projects End-to-End



We integrate Develop, Design, Deliver, Operate, and Trade into a single, powerful closed-loop platform. This unique synergy maximizes long-term value for customers, investors, and asset owners at every critical step of the project lifecycle.



RelyEZ is not merely a BESS supplier. We are an Energy Asset Platform.

An aerial photograph of a city, likely San Francisco, showing a dense urban area with a prominent bridge in the background. The image is overlaid with a blue and green gradient that transitions from left to right.

03

Key Technologies

Three Core Technologies for Data Center Solutions

Lithium Battery & Supercapacitor
Hybrid BESS

Grid-Forming PCS and BESS

Immersion Cooling BESS

Power Supply
Layer

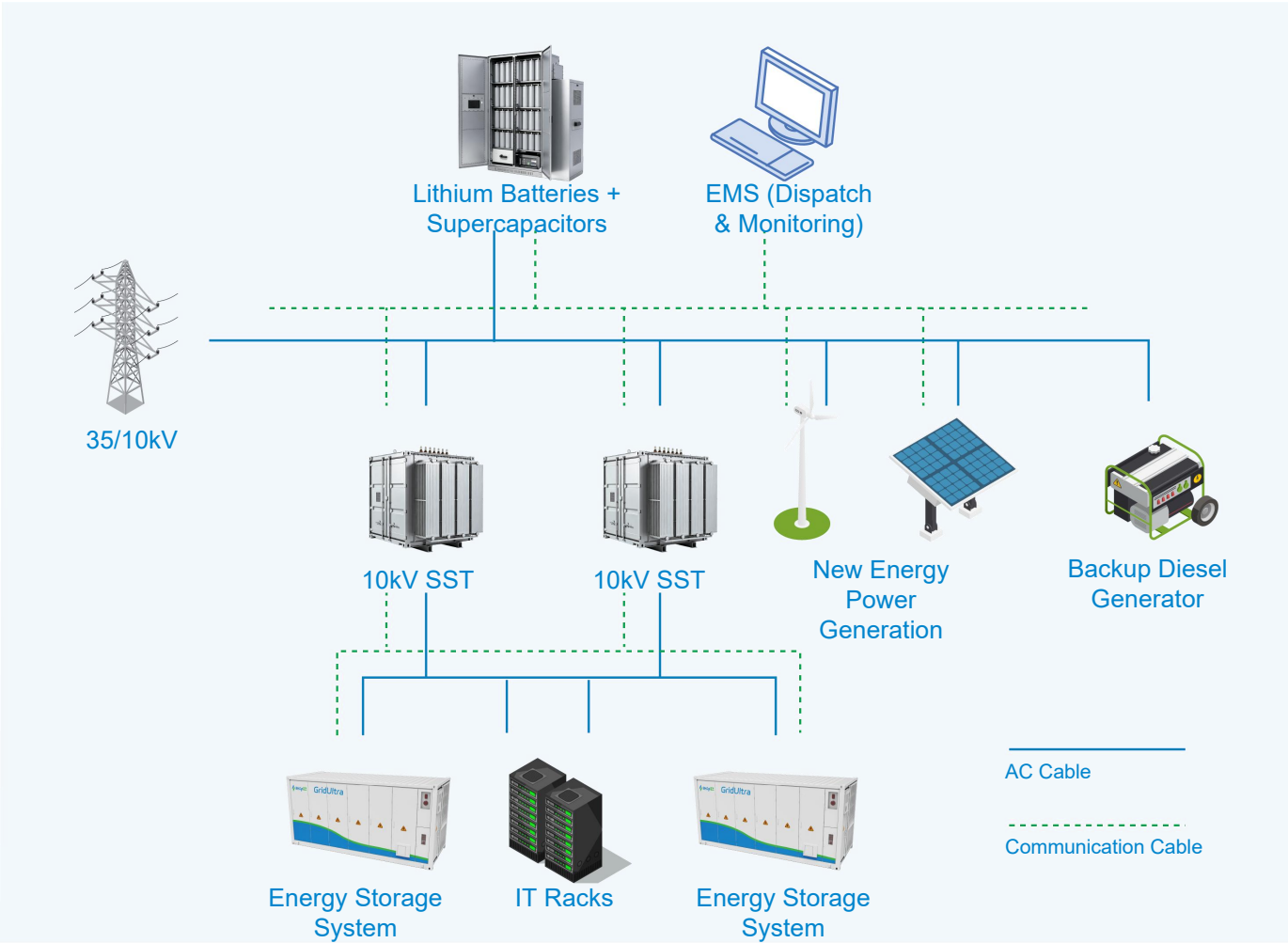
Grid Interaction
Layer

Energy Storage
Layer

Key Technology – Lithium Battery & Super capacitor Hybrid BESS



The lithium-supercapacitor hybrid system combines the millisecond-level power response capability of supercapacitors with the long-duration energy storage advantages of lithium batteries, enabling intelligent complementarity between power and energy while significantly improving system performance and lifespan.



Type	Super capacitor	Lithium battery	Benefits of the Hybrid Solution
Response Time	<1 ms	10-50ms	Full-Time-Domain Coverage: Seamless Integration of Transient and Steady-State Response
Peak Discharge Rate	20-100C	0.5-3C (Conventional)	Supercapacitors Handle Peak Loads While Lithium Batteries Operate Efficiently at Low C-Rates
Cycle Life	500,000-1,000,000 Cycles	6,000-8,000 Cycles	30%+ Longer Lithium Battery Lifespan, with Near Maintenance-Free Supercapacitors
Energy Density	5-15 Wh/kg	150-180 Wh/kg	Supercapacitors Compensate Power, Lithium Batteries Compensate Energy — Perfect Complementarity
Power Density	Extremely High	Medium	Maximized Instantaneous Overload Capability to Handle AI Computing Power Surges

Key Technology – Grid-Forming Energy Storage

A grid-forming energy storage system is a stable voltage source that does not rely on external grid signals (voltage or frequency) and can independently establish and maintain grid voltage and frequency. The system is equipped with a 5MW integrated energy storage PCS and step-up unit featuring high integration and space-saving design, while delivering ten core grid-forming capabilities that transform AIDC from a grid burden into a grid asset.

Short-Time Overload 3I/10s

Instantly Delivers $3 \times$ Rated Power to Support Sudden Load Surges Within AIDC or Grid Short-Circuit Impacts.

Seamless Switching & Black Start

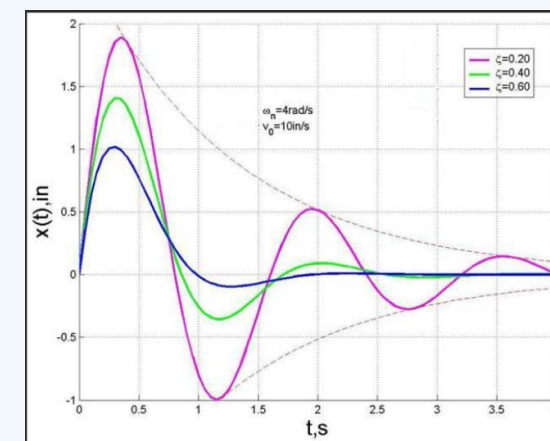
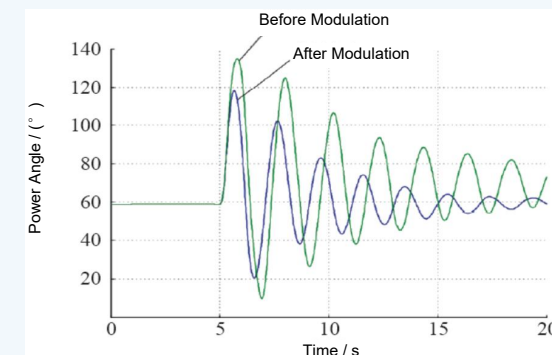
Supports Seamless Grid-Connected/Off-Grid Switching and Black Start Capability, Safeguarding the Ultimate Security Line for AIDC Power Supply.

Fast Frequency Response <20ms

Responds to inertia within 20ms, transforming AIDC into a high-quality grid “regulator” and creating ancillary service value.

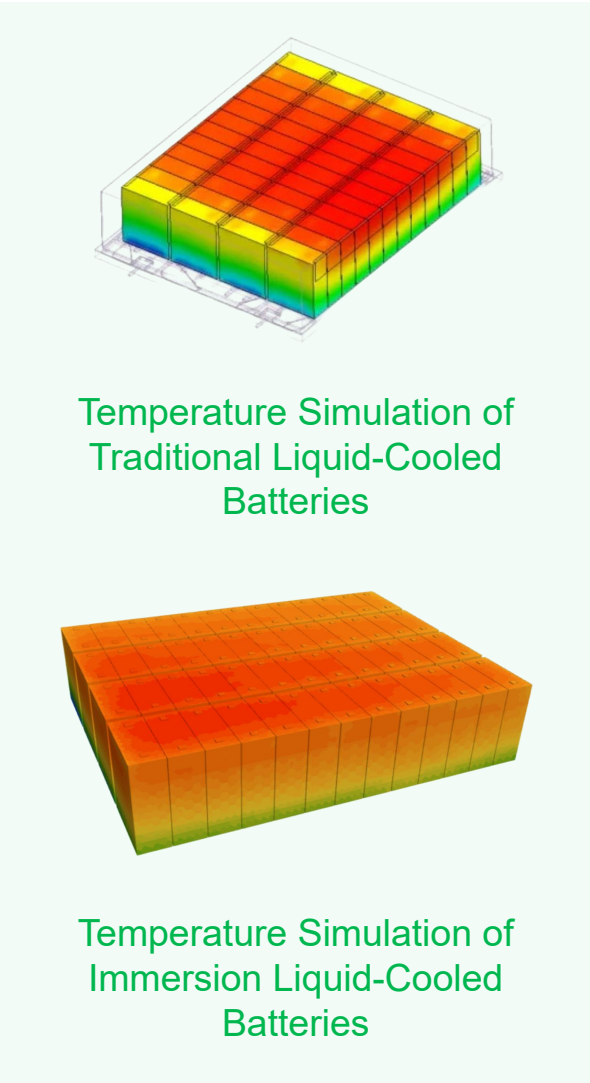
Weak Grid Support SCR<1.5

Maintains Stable Operation Even Under Extremely Weak Grid Conditions ($SCR < 1.5$), Significantly Increasing AIDC Grid Connection Capacity.



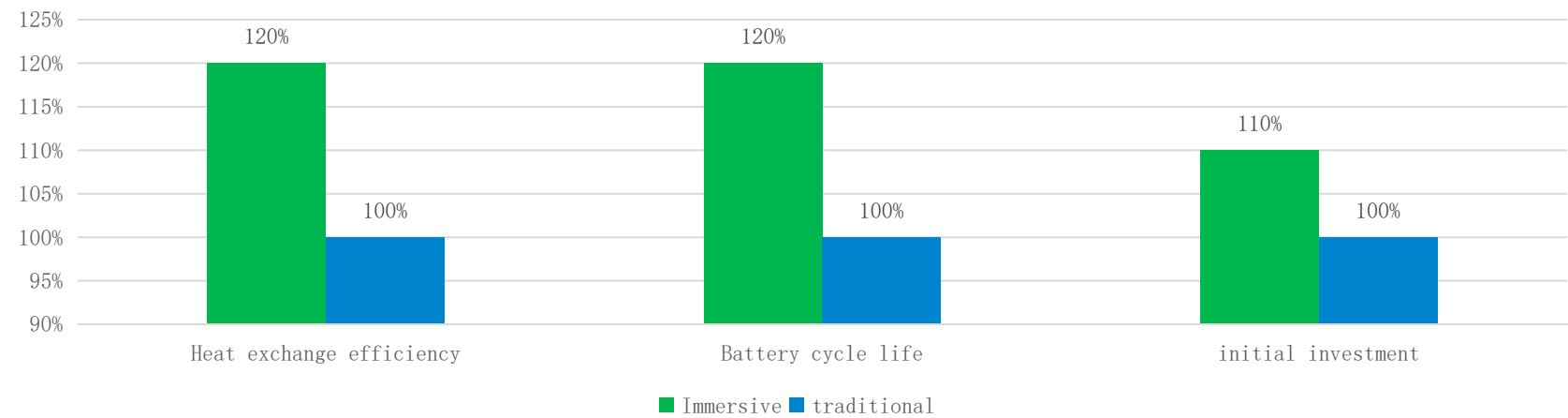
Grid-forming energy storage transforms passive operation into proactive support, becoming the core of the power grid. The 5MW integrated unit combines power conversion and voltage step-up, reducing footprint, simplifying deployment, and accelerating delivery.

Key Technology – Immersion Cooling Energy Storage



Category	Principle	Effect	Cell Lifespan	Safety	Cost
Traditional Liquid Cooling	Coolant circulates through pipelines and exchanges heat indirectly with battery cells.	Temperature Difference 3 - 5° C	Medium	Medium	Medium
Immersion Cooling	Battery cells are immersed in insulating coolant, enabling direct and highly efficient heat exchange.	Temperature Difference <2° C	Long	High	Low

Comparison Between Immersion Liquid Cooling and Traditional Liquid-Cooled Batteries



+20% Heat Exchange Efficiency
-25% Cooling Power Consumption

Direct Heat Exchange in Immersion Liquid Cooling vs. Traditional Indirect Heat Exchange

+20% Battery Cycle
Extended Lifespan

Improved Temperature Control Accuracy Effectively Delays Battery Degradation

+10% Initial Investment
-20% O&M Costs

Higher Short-Term Investment but Significantly Lower Long-Term Operating Costs

AI Datacenter Integrations / BESS Projects



THANK YOU

Create Tier-1 BESS Assets



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Account



WeChat Video
Channel