

FFD POWER Releases White Paper on 800V BESS Cutting Solar Plant Transformer Costs

Direct low-voltage 800V BESS integration removes dedicated matching transformers, reduces CAPEX and improves economics for 800V PV plants.

FRANKFURT, HESSEN, GERMANY, July 28, 2026 /EINPresswire.com/ -- FFD POWER today published a new technical white paper for the European market, detailing how 800V battery energy storage systems (BESS) can eliminate the need for dedicated voltage-matching transformers when added to 800V solar plants, cutting installed CAPEX by an estimated EUR 80,000 to 150,000 per 1 MW-class site.



Galaxy 418L 800V battery energy storage units deployed at an 800V solar farm, enabling direct low-voltage integration without a dedicated matching transformer.

As high-power PV inverters with 800V AC output become increasingly common in utility-scale and industrial solar projects, conventional 400V BESS solutions require an additional matching

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800V direct integration lets solar developers cut unnecessary CAPEX and simplify execution from the very first design phase.”

Li Xu, Marketing Director, FFD POWER

transformer, plus associated switchgear, cabling, civil works and commissioning scope to integrate into the plant architecture. This extra equipment chain not only raises upfront capital expenditure but also adds vendor interfaces, extends project schedules and increases resistive losses.

The white paper outlines a direct low-voltage integration approach, where an [800V BESS](#) connects directly to the existing 800V PV collection bus before the site's medium-

voltage step-up transformer. This architecture delivers four core engineering and commercial benefits:

1. Removes the dedicated BESS-side matching transformer package, avoiding EUR 80,000–150,000 of installed scope per 1 MW site.
2. Halves line current at equal power levels compared to 400V systems, reducing conductor

sizing, cable costs and transmission losses.

3. Reduces major equipment interfaces, civil works and commissioning steps, shortening project timelines and execution risk.

4. Preserves the existing PV inverter architecture for retrofit projects, provided the LV bus, transformer and protection systems have sufficient capacity.

This 800V direct integration approach is already proven in the field. More than 300 [Galaxy 418L](#) units have been deployed across Europe, including a six-site solar-plus-storage portfolio in Ukraine. Each site features five Galaxy 418L cabinets for 1.05 MW / 2.09 MWh of capacity, connected directly to the 800V LV collection bus. Across the full 6.30 MW / 12.54 MWh portfolio, the architecture avoids an estimated EUR 480,000 to 900,000 of matching transformer installation scope.

The white paper features two standardized 800V BESS platforms from FFD POWER:

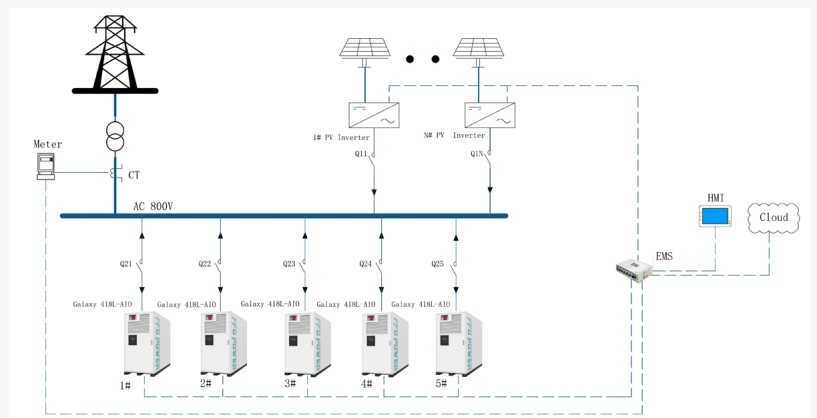
- Galaxy 418L: An all-in-one outdoor cabinet with 210 kW PCS and 418 kWh battery capacity, designed as a standardized two-hour building block for fast, repeatable multi-site deployment. It is optimized for solar self-consumption, curtailment recovery and price arbitrage applications.
- Galaxy 836L: A flexible platform with 836 kWh battery capacity that supports independent power and energy scaling, covering 2 to 12 hour discharge durations. It is ideal for projects requiring custom power-to-energy ratios, higher energy density or longer shifting windows.

The paper also addresses compliance and bankability requirements for European markets, clarifying that CE marking alone does not constitute grid connection approval. It outlines key frameworks including EN 50549-1/-2 and German VDE-AR-N 4105/4110/4120 standards, and provides a pre-design checklist for developers, EPCs and asset owners to validate technical feasibility, cost savings and compliance routes.

“Modern 800V solar plants shouldn’t have to pay a penalty to add storage,” said a spokesperson



Field-proven 800V BESS deployments across European solar-plus-storage portfolios, with over 300 Galaxy 418L units in commercial operation.



Single-line diagram comparison: conventional 400V BESS with matching transformer vs 800V direct integration on the PV LV collection bus.

for FFD POWER. "This white paper gives developers a clear, field-proven path to cut unnecessary CAPEX from day one, while delivering the same reliable storage performance with a simpler, shorter equipment chain."

Project developers, IPPs and EPC contractors can request a free project-specific review from FFD POWER, including a topology assessment, 400V vs 800V CAPEX comparison, country-specific compliance checklist and product configuration recommendation.

About FFD POWER

FFD POWER is a provider of advanced battery energy storage solutions, specializing in 800V direct-integration BESS for solar-plus-storage applications. With hundreds of units deployed across Europe, the company delivers standardized, bankable storage platforms that reduce project costs and simplify deployment for developers, asset owners and industrial clients.

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