Matrix Energy Management

Synchronizing all electricity sources and ancillary services in real-time is novel methodology, but one that has been deployed in grid-connected & microgrid environments.

For commercial, industrial, multi-tenant, remote microgrid and utility markets

EnSync Energy Systems is the only fully integrated distributed energy systems and service provider that offers a truly integrated solution to ensure a real-time, optimal mix from all available energy sources. We deliver multiple value streams for owners and managers of commercial, industrial and multi-tenant buildings, and microgrids – whether part of the electricity grid or behind the meter.

Synchronize Energy Sources

EnSync's Matrix Energy Management platform enables disparate energy sources – grid, distributed generation, energy storage – to work in complete synchrony, all continually optimized in real time to utilize the most reliable, cost-effective, and cleanest power source available at any given moment.

- *Prioritizes the most cost-effective energy*
- *Lets users take advantage of time-of-use pricing and market price fluctuations*
- *Allows profitable export of power*
- *Firms renewable sources to eliminate variability and allow utilities to plan for known output*

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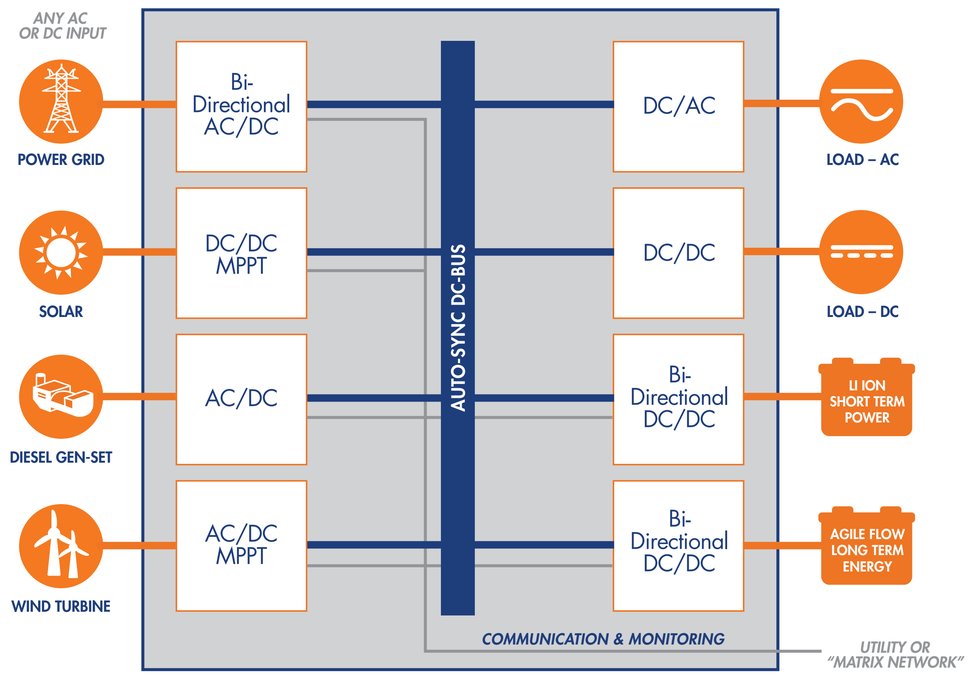
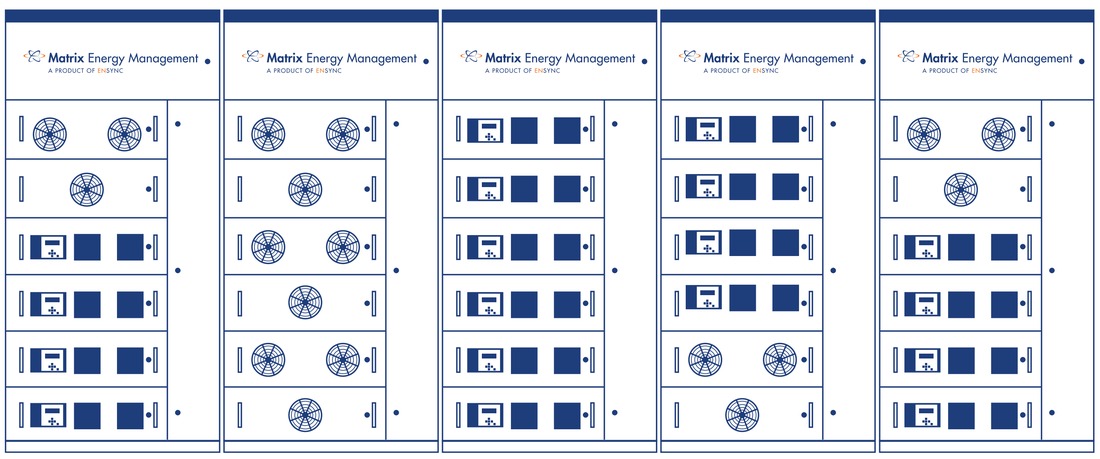


No Central System Controller Required.
All Control is Active, Real Time and Efficient.
Modular and Scalable.

Hot-Swappable Drawers Optimize Functional Control and Modularity

- *Matrix features a hot-swappable drawer, rack design that utilizes EnSync's proprietary "Auto-Sync DC bus"*
- *Ensures that the most cost-effective power sources available are given first priority.*
- *Matrix drawer is a converter, using parameters that optimize the resource connected to it.*
- *Drawers host hybrid systems of battery banks – often flow and lithium together – to address power and energy applications concurrently and realize multiple benefits*
- *PV, wind turbines, loads, gen sets, etc., similarly are optimized through drawers*
- *Highly flexible and scalable, a Matrix drawer is simply added or swapped without taking your system offline.*
- *Modular with drawers and units combined in parallel for systems ranging from kWs to MWs*
- *Smart, bi-directional inverter drawers allow active and reactive energy to be dispatched to or from the grid or customer load, regardless of where generated*



Future-proof and Monetize Your Facility

- *Matrix allows immediate management and stacking of multiple energy storage and electrical applications*
- *Enables users to take full advantage of time-of-use pricing and market price fluctuations*
- *Allows smart and profitable export of power*
- *Pre-sets automatically execute multiple electrical applications at once; not limited to: demand charge clipping, demand/supply response, and peak shaving*
- *Enables MPPT to optimize distributed generation from renewables*
- *Provides voltage and frequency regulation and power factor correction*
- *Firms renewable sources to eliminate variability and allow utilities to plan for known output*

MATRIX FUNCTIONALITY	
√	Active Energy Synchronization for any or all DC and AC inputs and Outputs without System Controller / Complex Algorithms
√	Can manage every power and energy storage application under simultaneous operation
√	Modular, Scalable, Efficient and "Future Proof" for 20 Year service life
√	Demand Response
√	Frequency Regulation
√	"Rate Shifting"
√	"Peak Shaving"
√	Demand Charge "Clipping"
√	Renewable Firming
√	Full Data Logging and Forecasting of Generation and Storage
√	Supply Response on Demand between Building and Grid Network
√	DC Output Management and Control (eg. DC lighting, Building DC)
√	Microgrid Operation
√	Maximum Power Point Tracking
√	Compatible with PV Panel Optimizer
√	Power Factor Correction and AC Bus Voltage Regulation
√	Islanding: Ability to Operate Independently of the Grid