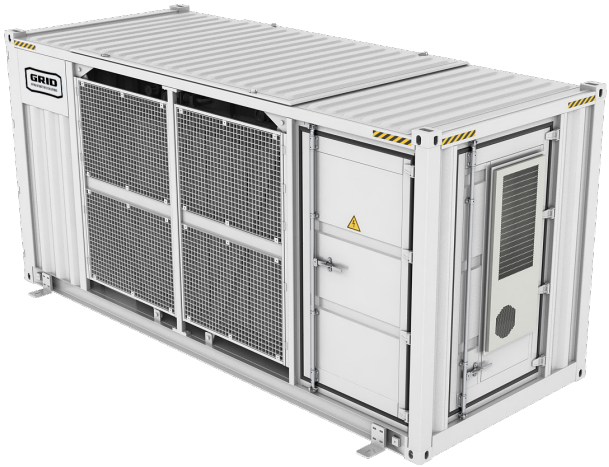
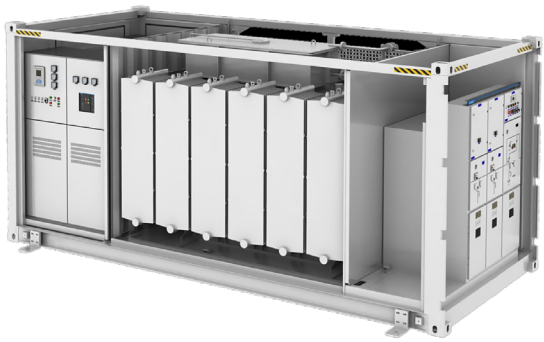
GRID
INFRASTRUCTURE SOLUTIONS

PREFABRICATED SUBSTATION



HV/LV Prefabricated Substation



HV/LV Prefabricated Substation
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Overview:

GRID Infrastructure Solutions offers fully integrated prefabricated substations that combine MV switchgear, power transformers, and LV distribution in a single, factory-tested containerized unit. Designed to IEC 62271-202 standards, these turnkey solutions provide rapid deployment for renewable energy and energy storage applications.

Features:

- **Factory-Integrated Design:** All primary components—MV switchgear, power transformer, and LV switchgear—are pre-assembled, tested, and commissioned before shipment, eliminating complex field integration.
- **Containerized Construction:** Standard 20-foot container format enables efficient shipping and simplified site placement. Units up to 10 MVA fit within a single container; larger capacities available through custom configurations.
- **Climate-Hardened Enclosure:** IP55-rated enclosure with optional climate control ensures reliable operation in extreme temperatures (-40°C to +55°C), high humidity, salt mist, and dusty environments.
- **Intelligent Monitoring and Control:** Integrated control systems enable remote monitoring, diagnostics, and unattended operation, reducing O&M costs and improving uptime.
- **Modular and Scalable:** Flexible design accommodates site-specific voltage levels, capacity requirements, and auxiliary systems including dual LV outputs and energy storage integration.

Lead Time:

Approximately **18-30 months** after drawings approved.

PREFABRICATED SUBSTATION

Performance & Safety Specifications	
Capacity Range	Up to 10 MVA (standard containerized format); larger capacities available
Voltage Classes	MV side up to 40.5 kV; configurable dual LV outputs
Environmental Testing	1440-hour salt mist, 144-hour damp heat, Class A fire resistance, L8 seismic performance
Internal Arc Classification	IAC-A-25kA-1s protection
Operating Temperature	-40°C to +55°C ambient
Compliance	IEC 62271-202, UL (where applicable), utility-specific standards

Applications & Use Cases:

Solar and Wind Farms
Step-up substations for utility-scale renewable generation with rapid deployment timelines.

Battery Energy Storage Systems (BESS)
Integrated power conversion and grid interconnection for utility-scale and commercial storage projects.

EV Charging Infrastructure
MV to LV transformation for large-scale charging depots and fleet electrification.

Remote or Temporary Installations
Quick-deploy power infrastructure for mining, construction, disaster recovery, or temporary utility service.

Grid Modernization Projects
Modular capacity expansion for distribution networks without extensive civil construction.

Optional Configurations:

- Dual LV output sections for separate load feeds or generation interconnection
- Integrated generator connection points for hybrid or backup power
- Advanced HVAC, dehumidification, and filtration for extreme climates
- Fire suppression systems for critical applications
- Custom voltage classes, busbar configurations, and auxiliary power systems

GRID INFRASTRUCTURE SOLUTIONS
5 Park Plaza, Suite 640
Irvine, CA 92614

Email: sales@grid-infrastructure.com
Phone: +1 (949) 570-8998
Website: grid-infrastructure.com