

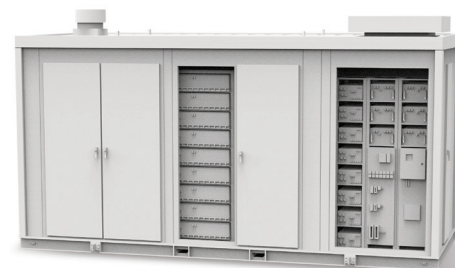


Energy Series

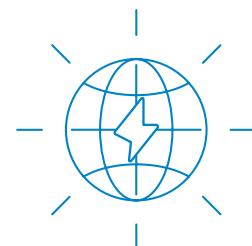
SCALABLE ALL-IN-ONE 2- to 6-HOUR AC STORAGE SOLUTION

Flexible, Scaleable and Safe

The AiON-ESS Energy Series all-in-one integrated system is a flexible, modular AC energy storage solution for 2- to 6-hour applications. It incorporates our third-generation string inverters, together with Tier-1 energy-focused batteries in a single, scaleable enclosure, enabling configurations of any size for almost any application. The AiON integrated solution is available with LFP chemistry. The fully integrated, containerized system reduces upfront capital outlay and saves on site installation work.



The Energy Series all-in-one system is built from paralleled AC string inverters installed inside an air-cooled section of the container, together with a liquid-cooled DC battery compartment. DC battery strings are aggregated in small groups to keep the DC bus voltage at lower, safer levels for the end customer. The system can operate from 200 VDC up to 1500 VDC, making it compatible with most current and future energy storage technologies.



Features and Benefits

- + **Modular Architecture** – The enclosure design houses battery racks, power conversion systems, and controls in separate compartments, each with its own protection system for maximum safety and reliability. Thanks to field-replaceable kilowatt-sized string inverters, units can be replaced in minutes.
- + **Thermal Management** – Each system includes superior thermal management, including properly sized liquid-cooled systems to handle expected battery and external heat loads, and protect from humidity.
- + **Designed for Safety** – The equipment environment includes features to ensure the safety of technicians, first responders, and other on-site personnel, including warning lights, software lockouts, safe working spaces, and fire suppression systems.
- + **Fleet Controller** – Each Energy Series system includes an energy management system (EMS) for intelligent control of energy storage and renewable energy assets. It can also easily interface with existing EMS and supports all possible operating modes from basic P/Q adjustments to fully automated energy management control.
- + **AC Augmentation** – Our all-in-one systems can be simply augmented by adding new enclosures over time. The new enclosures are shipped fully populated with batteries and inverters. This reduces augmentation time and maintains project power capacity.



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AiON modular design can be leveraged to provide all-in-one integrated AC energy storage in different container dimensions, including standard container sizes.

SPECIFICATIONS

System Level Specification¹

| | | 2 to 3 Hr | 4 to 6 Hr | |
|---|--|-------------|--------------|--|
| Power Rating | Nameplate (MVA) | 0.84 to 1.4 | 0.42 to 0.84 | Total Inverter Nameplate Power |
| | Rated ² (MW) | 0.8 to 1.3 | 0.4 to 0.8 | System Useable Power at POI at 1 PF |
| Energy Rating | Nameplate DC (MWh) | 2.63 | 3.01 | AC energy at inverter terminals when continuously discharged at maximum Rated Power at BOL |
| | Rated AC Energy ³ (MWh) | 2.58 | 2.95 | |
| Battery Type | | Li-ion | | 9540A tested tier-1 LFP |
| Point of Interconnection ⁴ (POI) | Voltage (kV) | 0.6 | | Output of PCS |
| | Frequency (Hz) | 60 | | |
| Certifications and Capabilities | UL9540 certified, NFPA 855 compliant, NFPA 69 compliant, NFPA 68 optional, grid forming and blackstart capable | | | |

Physical Specification

| | | | |
|--------------------|-----------------------------|---------|-------------------------------|
| AiON-ESS Container | Quantity | 1 | Number of AiON-ESS containers |
| | Typical Dimensions LxW (ft) | 20x8 | per AiON-ESS |
| | NEMA Rating | Type 3R | |
| | Min Chiller (kW) | 20 | per AiON-ESS |

Environmental Assumptions⁵

| | | | |
|-------------------------------|--------------------------|----------|-------------------------------------|
| Ambient Temperature | Operating (°C) | -5 to 50 | Warm up cycle required below -5°C |
| | Storage (°C) | -5 to 55 | Battery storage recommended at 25°C |
| Ambient Relative Humidity | Exterior to AiON-ESS (%) | 0 to 100 | Non-condensing |
| | Interior to AiON-ESS (%) | 5 to 85 | |
| Maximum Altitude ⁶ | Above Sea Level (ft) | 3280 | |

1. Specification is design estimate and may be adjusted upon final system design. Values in the table are preliminary design estimates only and are not guaranteed unless otherwise noted.

2. Power de-rating applies above 40°C, 2% per °C. Rated Power at 40°C.

3. Depending on the specific battery used. Excludes auxiliary load.

4. POI is defined at the high side terminals of the PCS. Scope is defined in the DOR. Values in table assume 0% collector system losses and 0% transformer losses.

5. AiON-ESSs are assumed to be installed in non-hazardous, non-corrosive environments unless otherwise noted.

6. Power de-rating of 1% per 328 ft above 3280 ft above sea level.

Service and Support

LS Energy Solutions provides extensive post-sales support and service, including commissioning assistance, training, preventative maintenance service, spare part and warranty support, and remote diagnostics and troubleshooting.

About Us

LS Energy Solutions, an LS Group company, is a leading provider of grid-connected energy storage solutions. The company brings over a decade of experience innovating energy storage and related technologies, from the first grid-connected lithium-ion storage system and to now having over 1.5 GW and 2.6 GWh deployed across 300 projects. The company offers a flexible range of battery and power electronics systems for both front-of and behind-the-meter applications, supported by an advanced global manufacturing and testing infrastructure. LS Energy Solutions is a convenient and competitive one-stop supplier for energy storage, from advanced inverters and associated components to fully integrated all-in-one systems. For more information visit www.ls-es.com.