

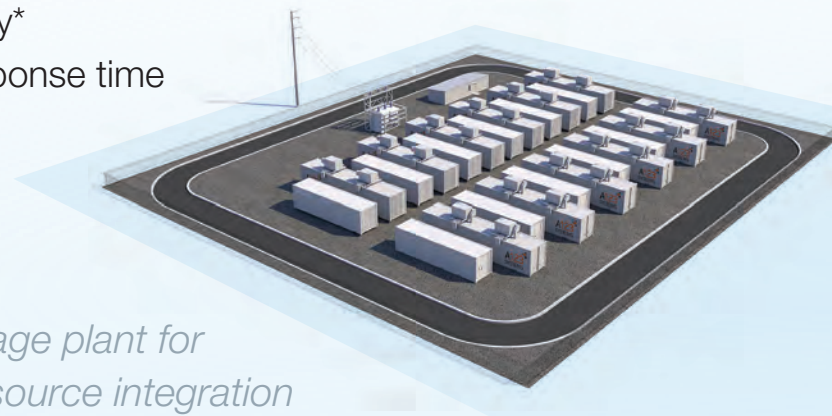
GBS-C53-LD40 53' standard container enclosure shown

- **Versatile** usage in diverse applications serving generation, transmission and distribution
- **Flexible** grid-ready design scales from hundreds of kW to hundreds of MW
- **Fully-integrated solution** can be sited in locations tough for traditional assets
- **Proven** operation in commercial revenue service

- Long-Duration (LD) and High-Rate (HR) container types available
- Number of energy storage racks is customizable
- Utilizes Nanophosphate® lithium ion cells

**GSS Operational Capabilities**

- 100's of kW to 100's of MW scalability
- 15 minute to 4+ hour durations
- 90% AC-AC efficiency\*
- Fast sub-second response time
- Zero emissions



Example storage plant for renewable resource integration  
Power Output: 48MW  
Energy Storage: 48MWh



**Grid Energy Storage Applications**

- Frequency Regulation
- Blackstart
- Renewable Integration
- Spinning Reserve
- Power Plant Hybridization
- Ramp Rate Management
- Voltage Support
- Dynamic Line Rating Support
- Dynamic Stability Support

**Power Conversion System (PCS)**

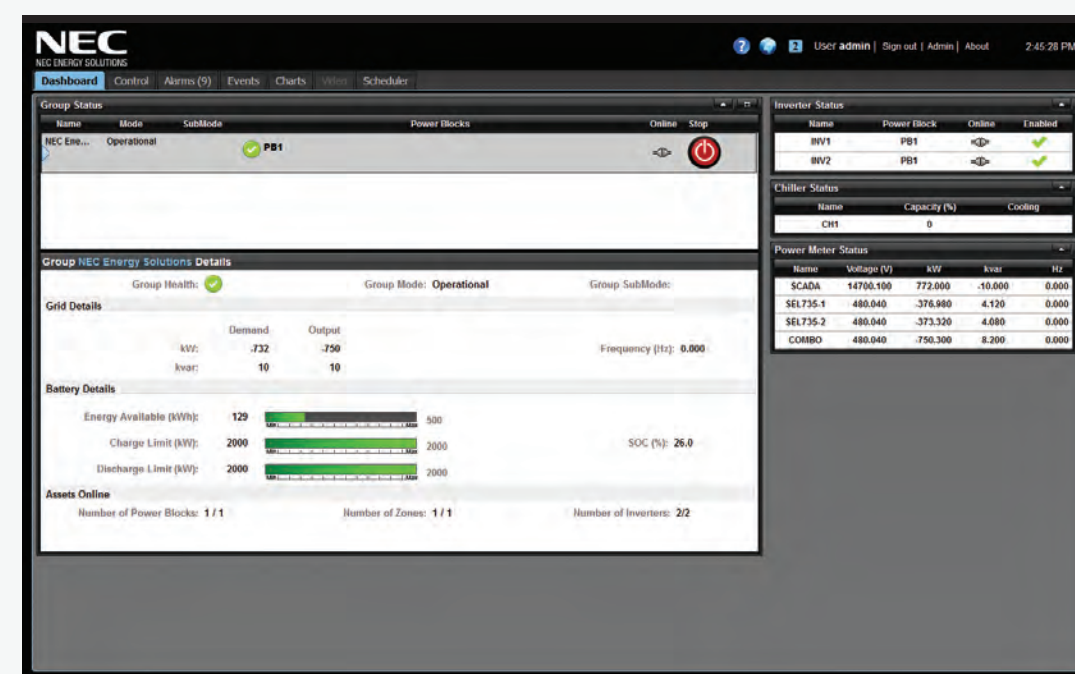
- Four-quadrant capable
- CE marking, IEEE 1547 and IEEE 519 compliance options
- High- and low-voltage and frequency ride through
- 50Hz or 60Hz connection frequency options

**KEY**

- 1 Control Rack
- 2 AEROS™ Controls
- 3 Fire Suppression
- 4 Energy Storage Racks
- 5 Thermal Management
- 6 DC Disconnect Switch

\*90% AC-AC efficiency rating based on AC-DC-AC conversion, including battery management system electronics, excluding auxiliary power.

**AEROS™ Controls**



AEROS™ user interface dashboard

- AEROS™ controls deliver full command and control functionality for seamless integration with your SCADA system.
- Automated or manual command and control via industry-standard secure protocols
- Real-time reporting of system capabilities and performance
- 250 millisecond standard response time, <30 millisecond high speed option available
- Communications protocol support: DNP3.0, IEC61850, Modbus TCP, SNMP and IEEE C37.118
- Remote monitoring and data collection with data historian option and GPS-time synchronized time stamping

**GBS™ Standard Containerized Energy Storage Units**



	Long-Duration (LD) GBS™			High-Rate (HR) GBS™
Model Number**	GBS-C53-LD40	GBS-C40-LD28	GBS-C20-LD12	GBS-C53-HR20
Energy Storage	4 MWh	2.8 MWh	1.2 MWh	575kWh
Power Rating	4 MW	2.8 MW	1.2 MW	2 MW
Dimensions (LxWxH)	53' x 8.5' x 9.5' (16.2m x 2.6m x 2.9m)	40' x 8.5' x 9.5' (12.2m x 2.6m x 2.9m)	20' x 8.5' x 9.5' (6.1m x 2.6m x 2.9m)	53' x 8.5' x 9.5' (16.2m x 2.6m x 2.9m)
Mass	140,000 lbs	100,000 lbs	47,000 lbs	64,000 lbs
DC Efficiency*	97% (C/2 rate)			96% (1C rate)
DC Voltage	944V nominal (750V - 1050V DC operating range)			960V nominal (750V - 1050V DC operating range)
Ambient Operating Temperature Range	-30°C to +50°C			
Enclosure details	Containerized, ISO 1496-1 certified, IMO CSC-compliant, designed to IP56 per IEC60529			

\* Inclusive of battery management electronics; excluding auxiliary power consumption by thermal management systems. Long-Duration GBS™ efficiency measured at full depth of discharge. High-Rate GBS™ efficiency measured at partial depth of discharge near mid state-of-charge.  
\*\* Models shown represent the maximum number of racks per container. Rack count may be reduced to modify capacity and power.  
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