

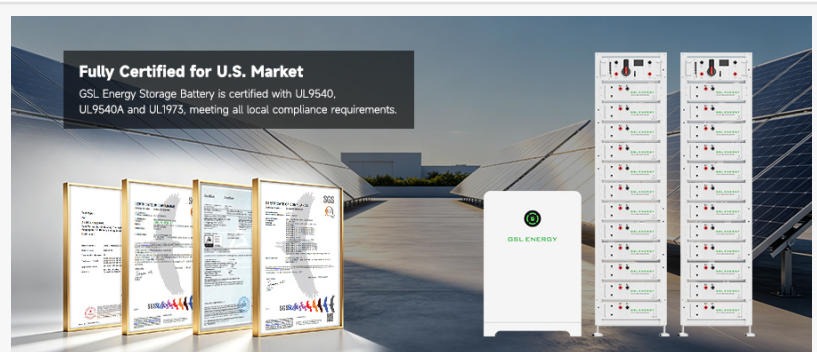
GSL Energy Deploys Hybrid High-Voltage and Low-Voltage ESS for Near Off-Grid Sports Facility in Texas

GSL Energy deployed 240kWh high-voltage and 56kWh low-voltage ESS in a Texas sports facility for near off-grid solar-powered operation.

□□, □□□ — GUANGDONG SHENG, CHINA, June 10, 2026

/EINPresswire.com/ -- Large-scale sports facilities represent one of the most demanding public power consumption scenarios. Continuous operation of event infrastructure, stadium management systems, and central air-conditioning creates significant fluctuations in electricity demand. In Texas, where grid instability, volatile peak electricity pricing, and weather-related outages are increasingly common, the challenge becomes even more pronounced. At the same time, although the facility had access to abundant solar resources, the absence of an integrated energy storage system meant that excess solar generation could not be effectively stored, resulting in substantial clean energy waste.

To address varying load requirements across different areas of the venue and support future off-grid energy operation, [GSL Energy](#) designed a coordinated dual-storage power solution integrating both low-voltage and high-voltage battery systems, combined with solar PV generation and photovoltaic mini-split air-conditioning systems. The project enables the sports facility to operate in a near off-grid mode, significantly reducing grid dependence, lowering



GSL R60 high-voltage battery system has obtained UL9540, UL9540A, UL1973, fully complying with local standards for fire safety, grid interconnection, project acceptance and insurance in the U.S.



New Project in Texas, USA! Hybrid 56kWh low-voltage & 240kWh high-voltage ESS deployed for a local sports facility. Supported by solar power, the venue achieves stable near off-grid operation.

electricity expenditure, and ensuring stable and uninterrupted power supply.

I. Key Energy Challenges Faced by the Sports Facility

Stadium lighting, audio systems, LED display screens, and central HVAC equipment generate substantial instantaneous power fluctuations, making it difficult for conventional power systems to respond effectively to sudden load changes.

Public sports venues require exceptionally high levels of power reliability. Any unexpected outage could directly interrupt sporting events, fitness activities, and public operations.

Although the facility possessed strong solar generation capabilities, the lack of battery storage infrastructure prevented efficient storage and utilization of surplus solar energy, resulting in significant renewable energy losses.

The venue aimed to reduce dependence on the utility grid and gradually transition toward routine off-grid operation through the integration of solar power and battery storage systems, while simultaneously achieving long-term energy-saving and carbon-reduction objectives.

II. GSL Energy's Customized Dual Energy Storage Solutions

Based on differences in power consumption across various sections of the facility, as well as the operational characteristics of indoor and outdoor electrical equipment, GSL Energy adopted a dual-system deployment strategy featuring independent yet coordinated operation.

The low-voltage storage system was designed to support smaller continuous loads, while the high-voltage ESS was responsible for handling high-power event-related demand surges.

Together, the two systems operate intelligently and independently, providing comprehensive energy coverage across all operational scenarios within the venue.

Solution 1: Low-Voltage Energy Storage System

Designed for Small and Medium Power Consumption Areas

System Configuration

3 × 12kW U.S.-Version Hybrid Inverters

4 × 14kWh Low-Voltage LiFePO₄ Batteries

Total Storage Capacity: 56kWh

Application Areas

Administrative offices

Security and monitoring systems

Corridor lighting

Control rooms

Small-scale operational equipment

Solar-powered mini-split air-conditioning systems

Key Advantages

The U.S.-version hybrid inverters are fully compatible with North American electrical standards and deliver highly stable operational performance. The low-voltage ESS offers lower

maintenance complexity and enhanced operational safety, making it particularly suitable for long-duration, low-power continuous supply applications. The system effectively supports the facility's daily operational energy demands.

Solution 2: High-Voltage Energy Storage System

Designed for Core High-Power Stadium Loads

System Configuration

2 × Sol-Ark 60kW Hybrid Inverters

4 × GSL Energy R60 High-Voltage Battery Systems

Total Storage Capacity: 240kWh

Application Areas

Main stadium LED display systems

Professional sports lighting

Central HVAC systems

Stage audio systems

Live event broadcasting equipment

High-power impact loads during sports events

Key Advantages

The high-power Sol-Ark inverters are capable of handling substantial instantaneous peak loads. Combined with the high-voltage ESS architecture, the system delivers higher discharge efficiency and superior support for heavy equipment startup surges. In addition, the system provides strong scalability, enabling future capacity expansion according to evolving stadium operational requirements.

III. Comprehensive UL Certifications for North American Market Compliance

The GSL Energy high-voltage and low-voltage battery systems deployed in this project have successfully obtained the three core safety certifications required within the North American energy storage market: UL9540, UL9540A, UL1973.

These certifications not only verify battery safety, thermal runaway protection capability, and overall electrical system performance, but also ensure full compliance with critical U.S. project approval requirements, including:

Fire safety inspections

Utility grid interconnection approval

EPC contractor acceptance procedures

Commercial insurance compliance reviews

By meeting these stringent standards, GSL Energy helps overseas [commercial ESS](#) projects achieve smoother and more efficient deployment without regulatory barriers.

IV. Core Operational Highlight: Near Off-Grid Stadium Energy Operation

Following comprehensive load calculations and system commissioning conducted by GSL Energy's engineering team, the integrated solar-plus-storage energy infrastructure was officially placed into operation.

Supported by the facility's solar PV array, photovoltaic mini-split air-conditioning systems, and coordinated dual ESS architecture, the sports venue is now capable of achieving near off-grid autonomous operation under standard daily operating conditions.

During daytime operation, solar energy is primarily consumed on-site, while surplus electricity is stored within the battery systems. At night or during periods without solar generation, stored energy is discharged to support facility operations, minimizing dependence on the utility grid while significantly reducing electricity costs.

More importantly, the integrated system ensures uninterrupted power supply during extreme outage events, balancing both economic efficiency and operational reliability.

V. Project Summary

This sports facility energy storage project successfully overcame the limitations of conventional single-system ESS architectures that often struggle to adapt to mixed high- and low-power commercial loads.

By implementing a coordinated low-voltage and high-voltage dual-storage strategy, GSL Energy delivered a customized solution precisely tailored to the diverse operational energy requirements of modern public sports facilities.

Looking ahead, GSL Energy will continue expanding its expertise in commercial and public infrastructure energy storage applications, providing integrated solar-storage grid-connected and off-grid power solutions for sports venues, commercial complexes, industrial parks, and public institutions worldwide.

About GSL Energy

Founded in 2011, GSL Energy has specialized in global energy storage solutions for more than a decade. The company's portfolio includes:

- [Residential energy storage](#) systems
- Commercial and industrial ESS
- High-voltage and low-voltage lithium battery systems
- Solar-storage-charging integrated solutions
- OEM & ODM energy storage manufacturing services

GSL Energy products are widely deployed across more than 150 countries and regions, including the United States, Europe, Latin America, the Middle East, and Southeast Asia.

The company remains committed to delivering safe, intelligent, and long-lasting energy storage solutions for commercial facilities, public infrastructure, industrial applications, and residential users worldwide.

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