

HELIOSPHERE INDUSTRIAL POWER CORP.
7500 Energy Corridor Plaza, Suite 1200, Houston, TX 77079 | Lic: TECL-33921
COMMERCIAL SOLAR & BESS ENGINEERING PROPOSAL

Date: September 20, 2026
Project: 2.5 MW DC Rooftop Solar PV & 1 MW / 4 MWh BESS Installation
Prepared For: Meridian Logistics & Industrial Park LLC

PAGE 1: EXECUTIVE SUMMARY & SYSTEM ARCHITECTURE

1.1 Project Overview:

Heliosphere Industrial Power Corp. is pleased to submit this turn-key engineering, procurement, and construction (EPC) proposal for a 2.5 MW DC commercial solar photovoltaic array paired with a 1 MW / 4 MWh Lithium Iron Phosphate (LFP) Battery Energy Storage System (BESS) located at Meridian Logistics Park, Building 4.

1.2 System Specifications:

- Total DC Nameplate Capacity: 2,510 kW DC using 580W bifacial monocrystalline modules.
- Inverter Architecture: (25) 100 kW 3-phase string inverters with integrated DC/AC optimizers.
- Storage System: (2) 500 kW / 2,000 kWh containerized LFP outdoor BESS enclosures with liquid thermal management.
- Mounting Structure: Engineered ballasted non-penetrating roof mount (standing seam metal deck compatible) with a 10-degree tilt angle oriented due South.

PAGE 2: UTILITY INTERCONNECTION & GRID SYNCHRONIZATION

2.1 Interconnection Strategy:

- Utility Provider: CenterPoint Energy / ERCOT market distribution tier.
- Interconnection Queue Status: Standard Distributed Generation Interconnection Agreement (DGIA) Tier 4 application submitted.
- Upgrade Provisions: Proposal includes up to \$45,000 allowance for utility-mandated reverse power relay protection and recloser coordination studies. Any Transmission Service Provider (TSP) grid reinforcement costs beyond this allowance will be billed on a pass-through basis.
- Anti-Islanding Protection: IEEE 1547-2018 compliant digital protection relays with automatic transfer tripping upon grid loss.

PAGE 3: INVERTER PROCUREMENT & SUPPLY CHAIN MITIGATION

3.1 Hardware Procurement & Availability:

- Inverter Supply Chain: Utilizing tier-1 string inverters currently warehoused in our Dallas-Fort Worth regional distribution hub to insulate the project from international shipping bottlenecks.
- Modularity & Redundancy: The 25-string inverter topology ensures that a single unit failure impacts less than 4% of total generation capacity, avoiding single-point-of-failure vulnerabilities associated with central skids.
- Spare Parts Inventory: Included in contract price is a localized operational spare parts inventory (3 replacement string inverter modules stored on-site).

PAGE 4: PERFORMANCE MODELING, DEGRADATION & TARIFF ARBITRAGE

4.1 Energy Yield & Degradation Guarantees:

- Year 1 Estimated Generation: 3,650,000 kWh with a DC/AC load ratio of 1.25:1.
- Degradation Guarantee: Guaranteed maximum annual power degradation of 0.45% per year, backed by a 25-year linear performance warranty.
- Bifacial Gain: Estimated 7.5% annual energy boost from albedo reflection off the white TPO roof membrane.

4.2 Tariff Optimization & BESS Dispatch:

- Demand Charge Shaving: Automated AI dispatch algorithms programmed to flatten peak 15-minute demand intervals during summer afternoon peak tariff windows (1 PM to 7 PM).
- Arbitrage Model: Storing low-cost off-peak solar generation and discharging during high-tariff pricing events.

PAGE 5: INVESTMENT SUMMARY, PRICING & WARRANTY

5.1 Turnkey Financial Investment:

- Total Engineering, Procurement, Permitting, and Construction Cost: \$3,450,000 (Eligible for Federal ITC 30% plus domestic content adder).
- Construction Timeline: 22 weeks from utility NTP (Notice to Proceed) to commercial operation date (COD).
- Warranty Terms: 10-year workmanship warranty on structural racking and electrical installation; 25-year module performance warranty; 10-year BESS warranty.