

BUSINESS DECISION COMPARISON REPORT: COMMERCIAL SOLAR & BESS INFRASTRUCTURE

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BUSINESS DECISION

The commercial real estate developer is evaluating two multi-megawatt engineering proposals for a 2.5 MW solar PV array and 4+ MWh Battery Energy Storage System (BESS). Key decision factors include utility interconnection risk management, inverter architecture (distributed string vs. central skid), long-term DC-to-AC degradation ratios, local tariff arbitrage efficiency, upfront capital cost, and project delivery timelines.

PROPOSAL COMPARISON MATRIX

FEATURE: Inverter Architecture & Supply Chain Mitigation

Bid A (Heliosphere) — (25) 100 kW distributed string inverters sourced from regional DFW distribution inventory.

Bid B (SunVault) — (2) 1,250 kW central skid-mounted inverters with North American manufacturing sourcing.

SIGNIFICANCE: Bid A minimizes single-point-of-failure risk with modular string units, while Bid B utilizes centralized skids with factory-integrated transformers for simplified medium-voltage tie-ins.

FEATURE: Utility Interconnection & Queue Risk

Bid A — Standard DGIA application with a \$45,000 allowance for utility-mandated relay upgrades.

Bid B — Fast-track review path with an explicit utility interconnection delay guarantee absorbing holding costs past 90 days.

SIGNIFICANCE: Bid B offers stronger risk transfer regarding unpredictable utility interconnection study delays from the local Transmission Service Provider (TSP).

FEATURE: System Capacity, Mounting & Degradation

Bid A — 2,510 kW DC ballasted roof mount; 0.45% annual degradation guarantee; 3.65M kWh Year 1 yield.

Bid B — 2,480 kW DC mixed roof and parking canopy mount; 0.50% annual degradation guarantee; 3.78M kWh Year 1 yield.

SIGNIFICANCE: Bid B captures higher annual yield due to solar canopy tilt optimization, whereas Bid A offers a slightly superior annual degradation guarantee (0.45%).

FEATURE: Tariff Arbitrage, Storage & Pricing

Bid A — 1 MW / 4 MWh LFP BESS; automated demand charge shaving; \$3,450,000 total EPC cost.

Bid B — 1.2 MW / 4.8 MWh LFP BESS; microgrid black-start capability; \$3,620,000 total EPC cost.

SIGNIFICANCE: Bid B provides higher storage capacity (4.8 MWh vs 4 MWh) and emergency black-start functionality, reflecting its \$170,000 price premium.

PRICE AND SCOPE ANALYSIS

- Lowest Cost: Bid A (\$3,450,000) with distributed string inverters and standard roof mounting.

- Highest Capacity / Features: Bid B (\$3,620,000) featuring larger BESS capacity, parking canopies, and microgrid black-start capabilities.

IMPORTANT UNCERTAINTIES & OMISSIONS

- Neither proposal explicitly includes structural engineering retrofits if local wind uplift codes (ASCE 7-22) require structural building reinforcement for ballasted roof arrays.
- Utility-mandated distribution line upgrades beyond the \$45,000 allowance in Bid A remain an unbudgeted risk item.

QUESTIONS FOR THE VENDORS

1. (To Bid A) Can you expand the interconnection delay guarantee to match Bid B's terms given current TSP backlogs?
2. (To Bid B) What is the exact land-use and civil engineering footprint required for the parking canopy foundations?

BOTTOM LINE

If upfront capital minimization and modular inverter redundancy are top priorities, Bid A provides an exceptional, cost-effective solution. If the project requires parking shade structures, higher BESS capacity, microgrid resilience, and contractual protection against utility interconnection delays, Bid B justifies its \$170,000 premium.