

The Role of Microgrids at California Seaports

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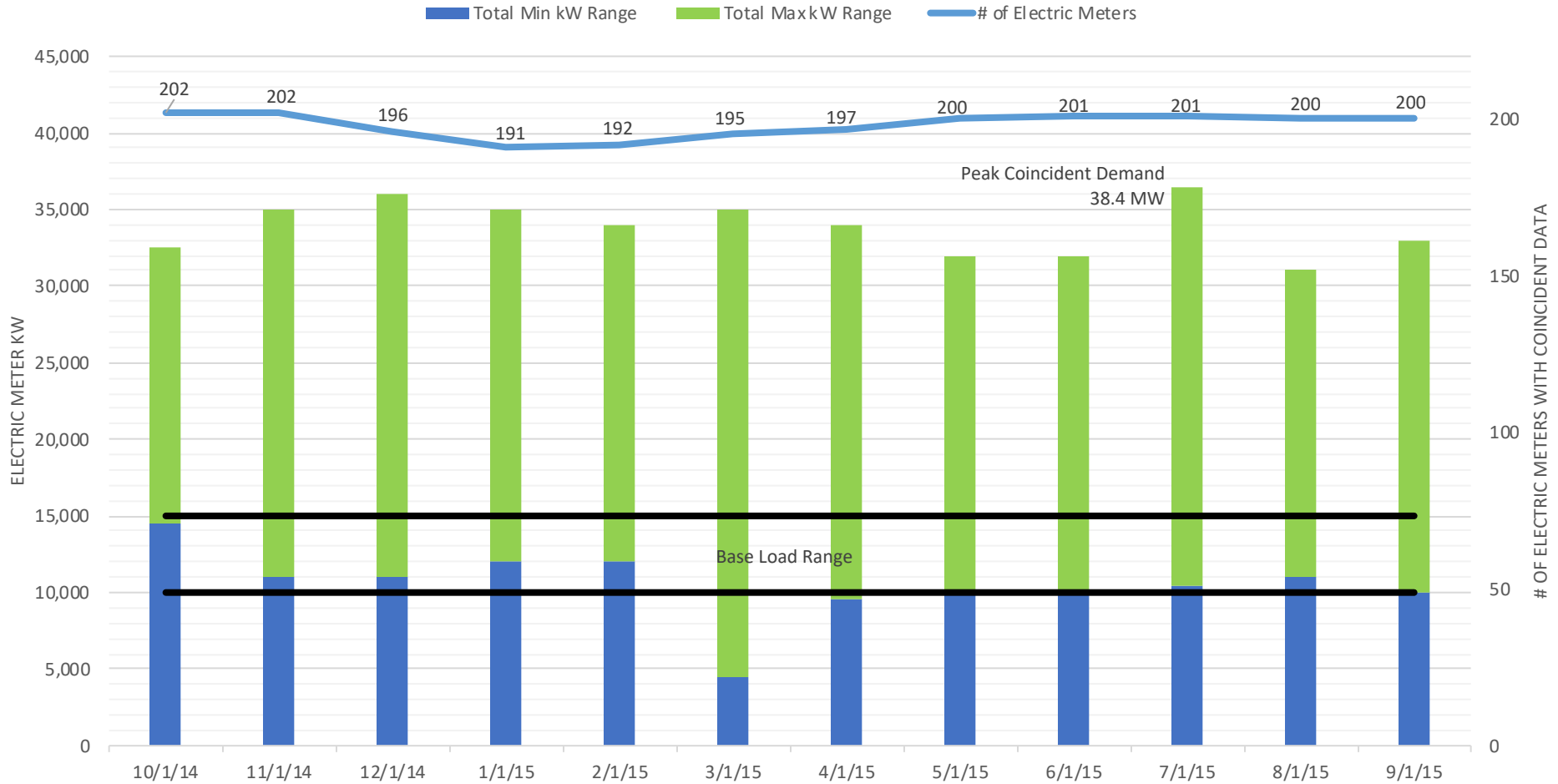
2017 CLEAN AIR ACTION PLAN GOALS:

ZE marine terminals by 2030

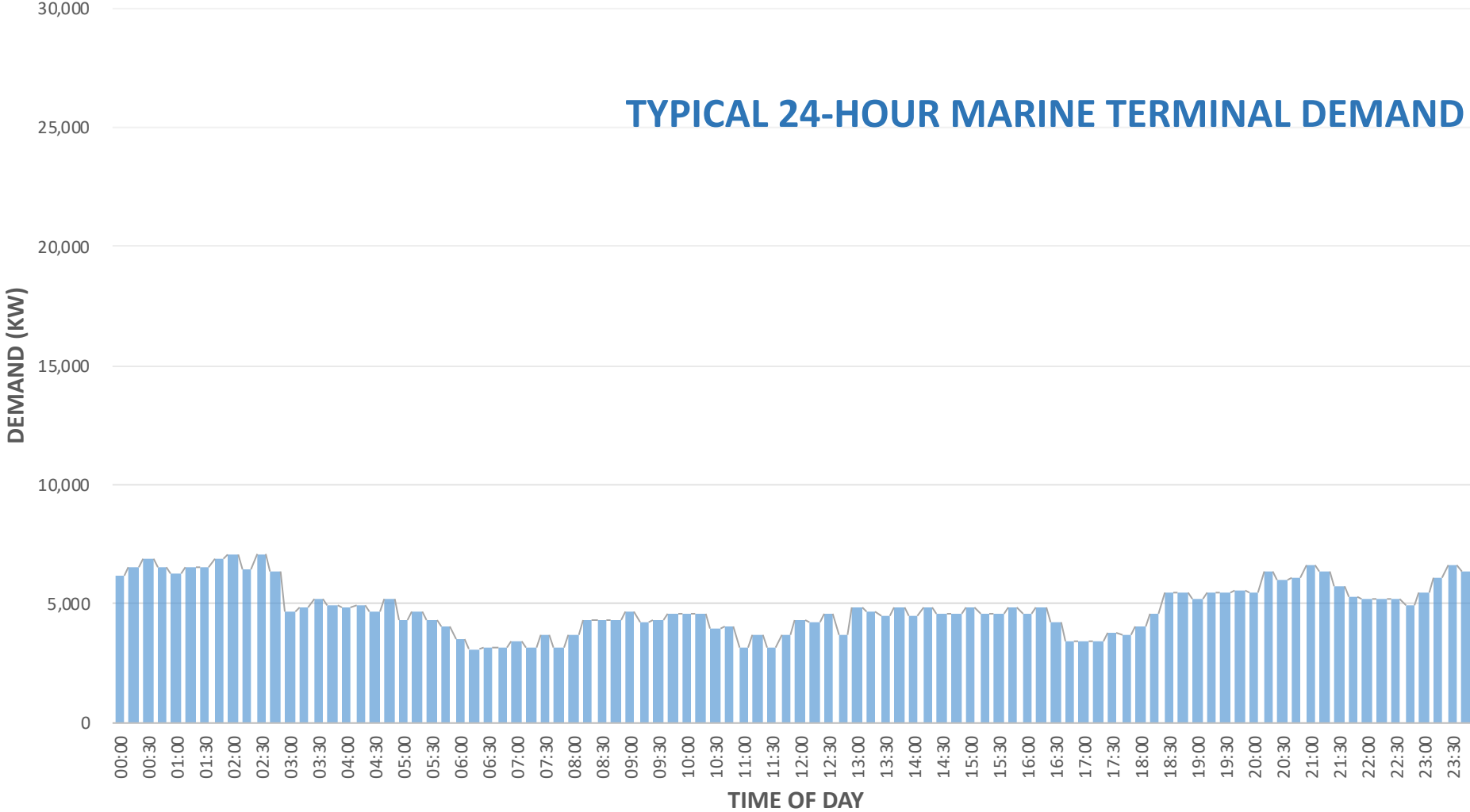
ZE on-road trucks by 2035

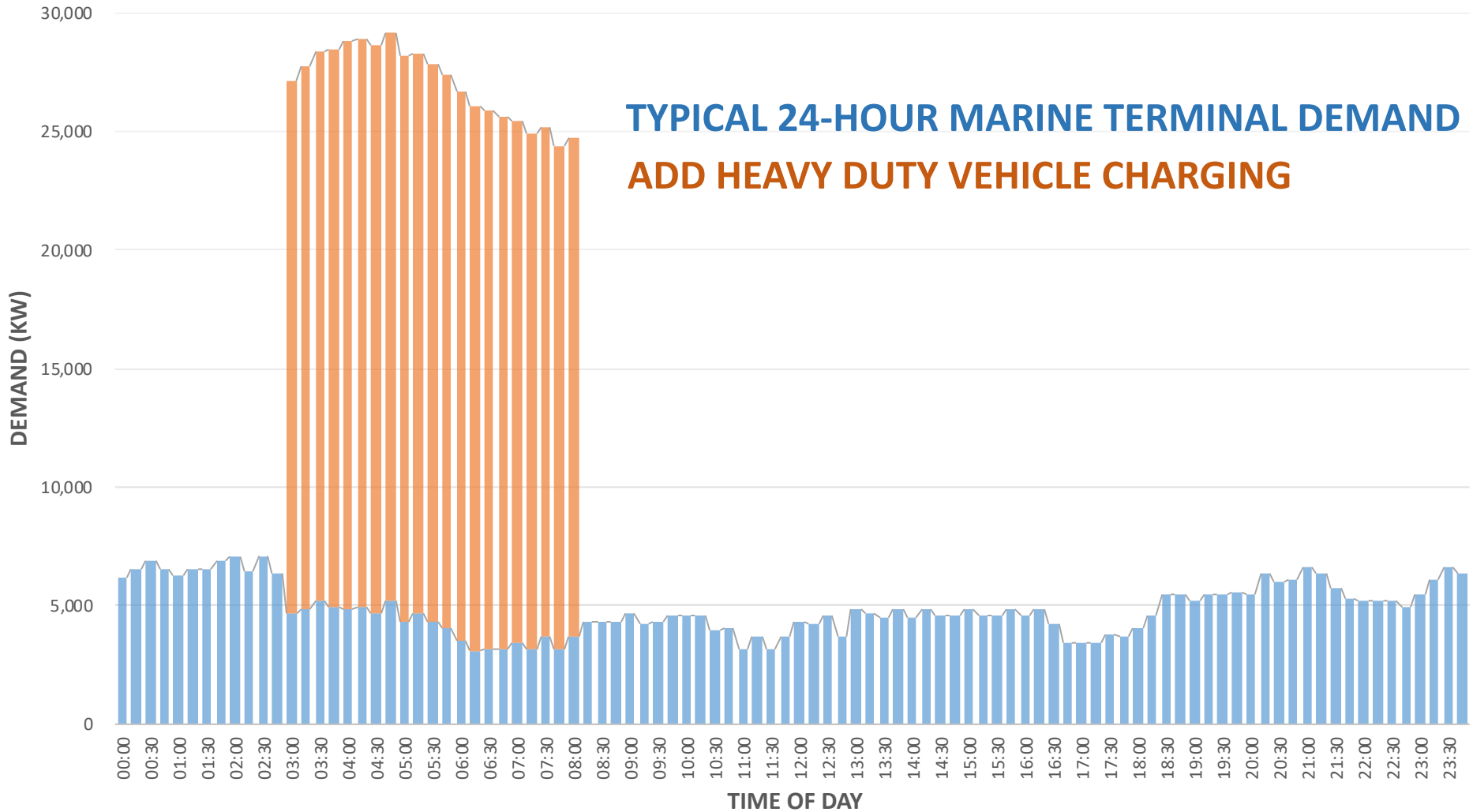


Total POLB Demand - Pre ZE



TYPICAL 24-HOUR MARINE TERMINAL DEMAND





INNOVATION: The stationary battery energy storage system is DC-coupled which reduces power loss from traditional DC-to-AC inversion, eliminates some equipment costs, and provides the opportunity to feed future DC loads. A bi-directional inverter allows the battery to accept electrons from both the solar panels and the grid.

Mobile-BESS
250kW / 500kWh

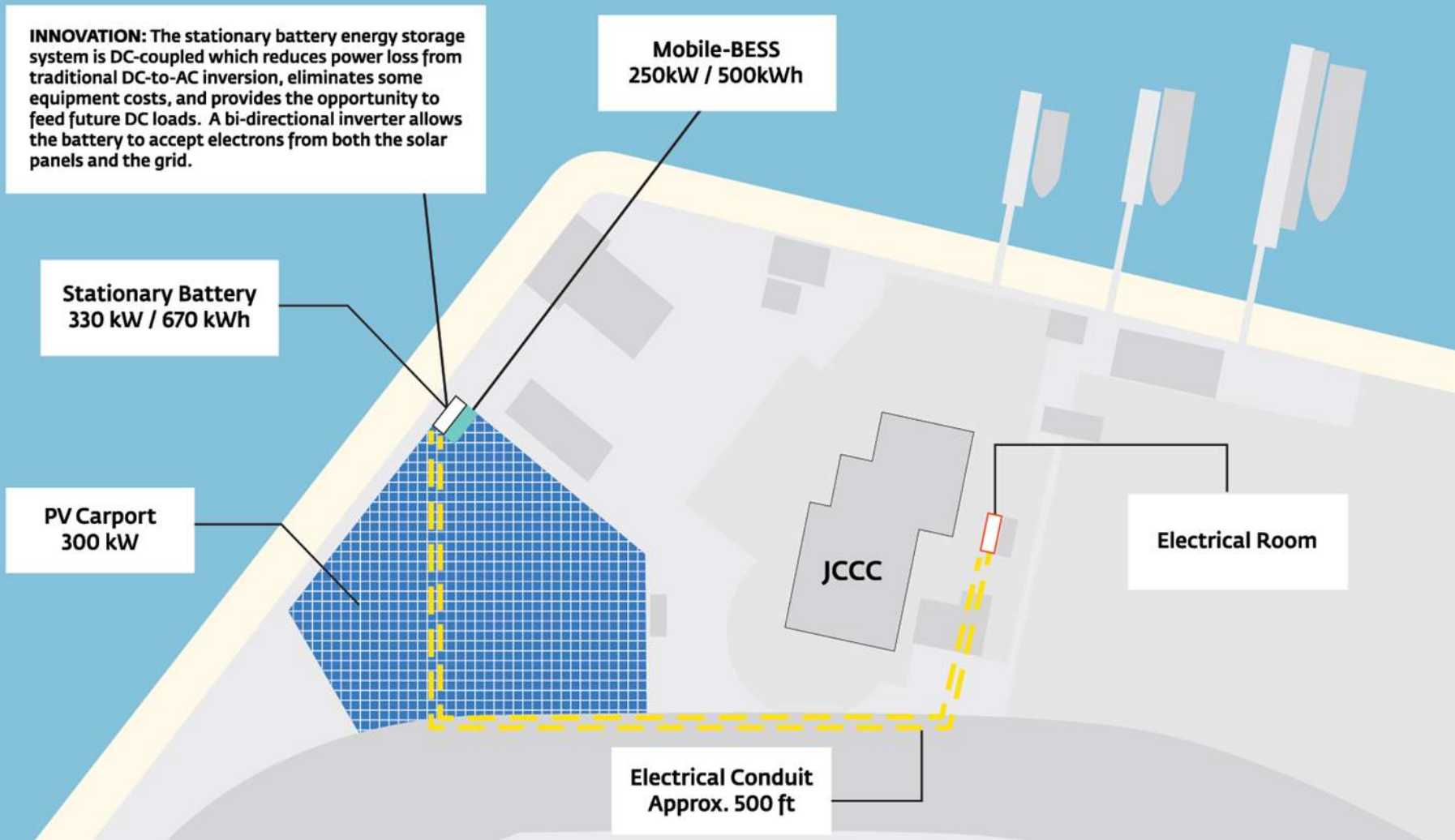
Stationary Battery
330 kW / 670 kWh

PV Carport
300 kW

JCCC

Electrical Room

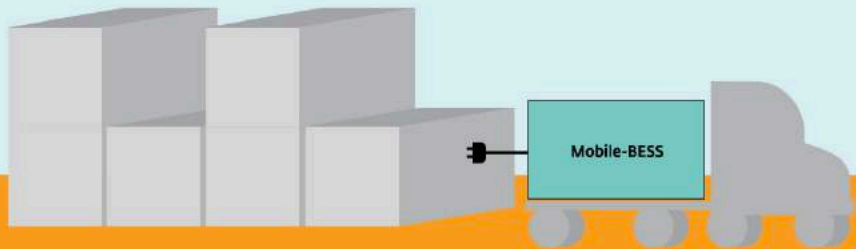
Electrical Conduit
Approx. 500 ft



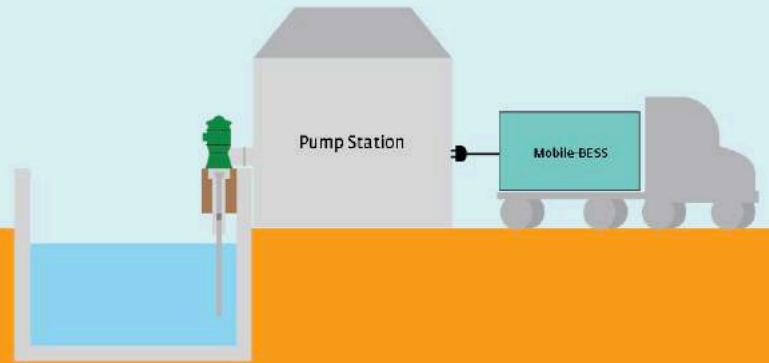
Resilience for Critical Facilities

Port of Long Beach Microgrid — EPC-17-031

Contract Term: April 23, 2018 to March 31, 2023



mobile-BESS plugging in at a container yard



mobile-BESS plugging into a pump station

INNOVATION: Our project features a microgrid-extending, chassis-mounted mobile energy storage system (mobile-BESS). This 250kW/500kWh battery array will typically be plugged into the JCCC, but can be driven to other locations that are compatible with its 480V inverter. It's also quiet and emissions-free. We'll demonstrate the mobile-BESS at a pump station and a refrigerated container yard.



Port of
LONG BEACH
The Green Port

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for current solicitations