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

Peak Coincident Demand: 38.4 MW

Base Load Range:
- Min: 191 MW
- Max: 200 MW

# of Electric Meters with Coincident Data:

ELECTRIC METER KW
- Total
- POLB

Demand: - Pre ZE
- Total Min kW Range
- Total Max kW Range
- # of Electric Meters
TYPICAL 24-HOUR MARINE TERMINAL DEMAND
TYPICAL 24-HOUR MARINE TERMINAL DEMAND
ADD HEAVY DUTY VEHICLE CHARGING
**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

- **Electrical Conduit**
  - Approx. 500 ft

- **Electrical Room**

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*Diagram showing the layout of the battery storage system, solar carport, and electrical conduit.*
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.
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