PASHA STEVEDORING & TERMINALS

California Air Resources Board
Transportation Electrification Working Group Meeting
11/14/16
Pasha Stevedoring & Terminals

• U.S. Owned Company
  Founded in 1947
• Moves $600 MM in Cargo Annually
• Omni Terminal
  • Break Bulk
  • Containers
• Committed to Sustainability & Resiliency
Green Omni Terminal Project
Serve as a Model for Sustainability & Resiliency

Port of Los Angeles Green Omni Terminal

Other Maritime Terminals

Railyards

Warehouses

Distribution Centers

Exporting Green Technologies to the Southern California Region
Demonstrated Technologies

Four (4) electric yard tractors
Two (2) 21-ton electric forklifts
One (1) electric top handler
Two (2) on-road drayage trucks

At-berth ship emission control systems to reduce harmful emissions
Standardized charging infrastructure
Integrated 1 MW solar photovoltaic and battery storage system
Pasha Green Omni Terminal Project
Back-up Generation/Battery Storage

Solar Array Provides Power Every Day

Battery Storage Allows Solar to Operate

Back-up Generation Runs w/o Grid

Terminal Operates When Needed

Grid Power
Benefits of the Green Omni Terminal

- Reduce 3,000 tons per year of CO$_2$e, as well as air quality criteria pollutants
- Create a test facility for the commercialization of zero and near-zero emission technologies
- Demonstrate terminal resiliency using a microgrid
- Serve as a cost-effective and scalable model for thousands of marine terminals and distribution facilities
- Serve as a Catalyst for Change in Sustainable and Resilient Goods Movement
Project Issues and Permits

- Solar Feed-In-Tariff and solar microgrid integration
- Charging automation and standardization
- Integrate aging infrastructure new projects
- Hazmat
- Permitting - (Coastal Development Permit – Class 1, Harbor Engineers Permit, Harbor Heavy Lift Permit, CEQA Review, City of Los Angeles Building & Safety – Electrical and Structural Assessment)