

PASHA STEVEDORING & TERMINALS

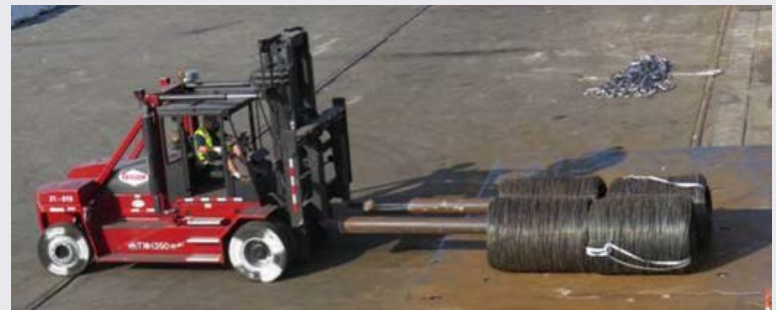


California Air Resources Board
Transportation Electrification Working Group Meeting
11/14/16



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



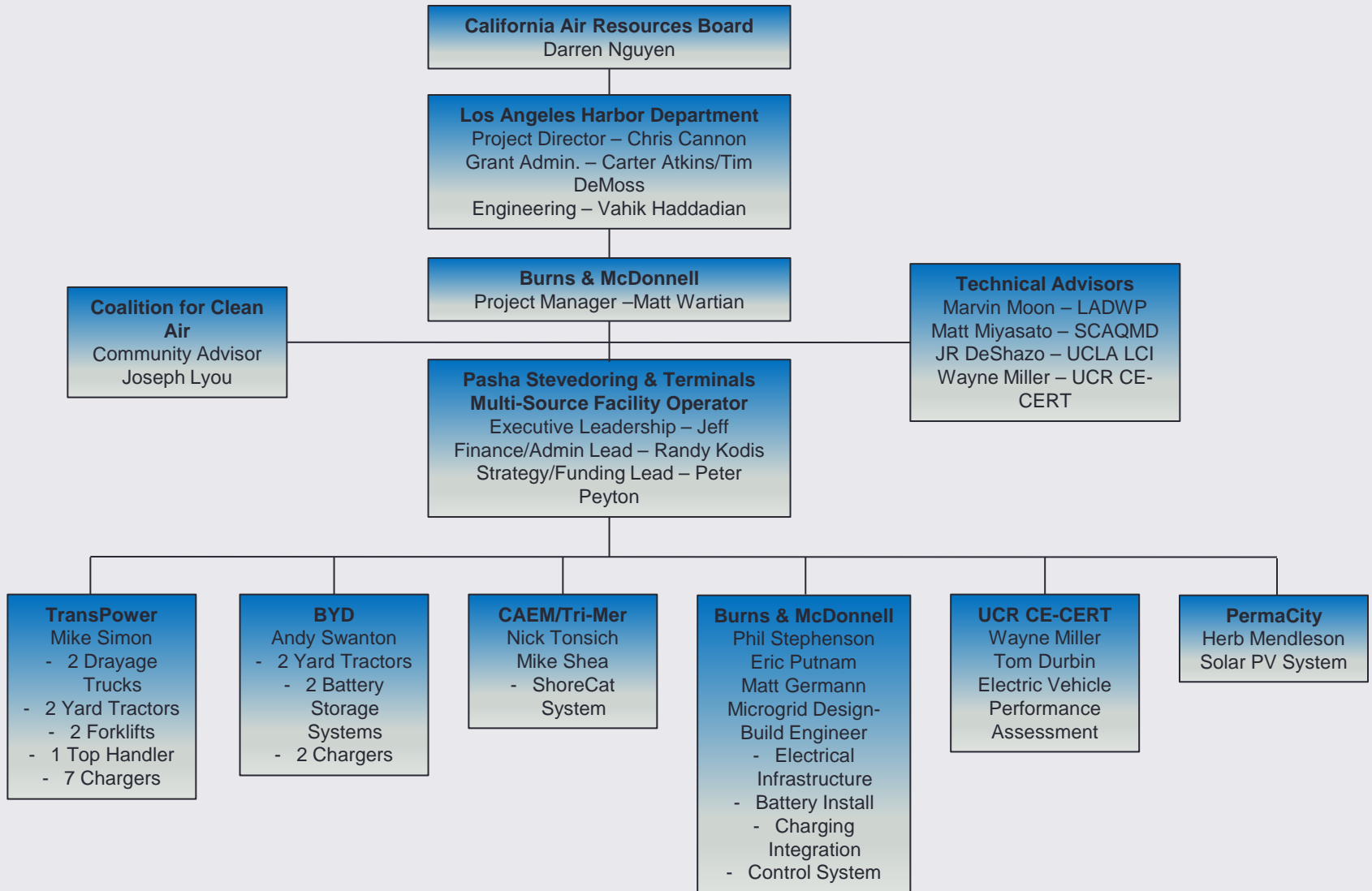
Standardized charging infrastructure



Integrated 1 MW solar photovoltaic and battery storage system



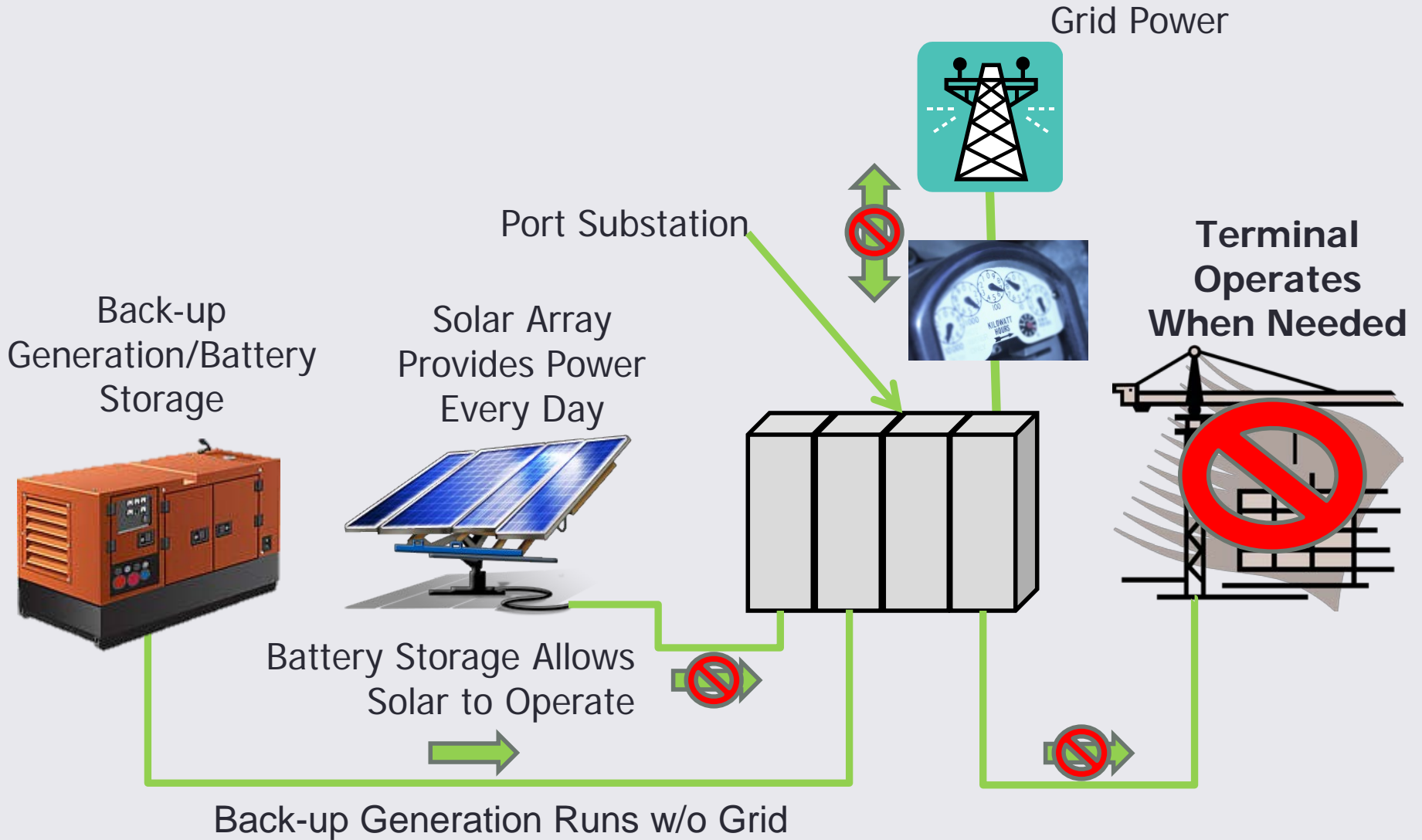
Project Team



Pasha Green Omni Terminal Project



Pasha Solar Microgrid Demonstration



Benefits of the Green Omni Terminal

- Reduce 3,000 tons per year of CO₂e, 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