CREATING WAVES IN SMART SEAPORT OPERATIONS

The first 100 percent renewable microgrid at a U.S. marine terminal is expected to reduce greenhouse gases by 3,200 tons a year.

The only omni-cargo terminal at the Port of Los Angeles is set to become the proving ground for a revolutionary sustainable, clean-energy solution at marine terminal operations and industrial facilities.

In conjunction with the California Air Resources Board, Pasha Stevedoring & Terminals LP and the Port of Los Angeles launched the $27 million project that includes the first-ever renewable seaport microgrid accompanied by electric vehicles, battery storage and other emerging technologies to dramatically reduce pollutants and increase energy resiliency.

Pasha partnered with Burns & McDonnell to design, build and manage services for the Green Omni Terminal Project that will use its solar-powered microgrid to maintain operations in the event of a disaster — most likely an earthquake — which would otherwise shut down the country's largest operating port.

"Having a port terminal able to sustain itself with just the sun — that's pretty groundbreaking and remarkable," says Eric Putnam, a senior electrical engineer and associate at Burns & McDonnell.

While container traffic makes up the vast majority of work at the Port of Los Angeles, Pasha is the only terminal there that can move everything — containers, cars, produce and other commodities. In a disaster, it could be supplies such as first aid, equipment or food. That, coupled with the more efficient facility using the microgrid to operate off the grid when needed, will be a game-changer in marine terminal operations.

"This is essentially a laboratory that will show us how operationally effective it is," says Matt Wartian, a project manager at Burns & McDonnell. "It could change how marine terminals, railroad and trucking distribution centers operate worldwide."

Marine exhaust treatment system to capture 90 percent of emissions from smokestacks of berthed ships

2.6-megawatt-hour battery storage system and electric-charging infrastructure for vehicles converted from diesel to electric power

1.03-megawatt solar photovoltaic system to operate in parallel with the LA grid