

## ROADMAP TO ZERO EMISSIONS RTG TRANSTAINER

### TRANSTAINER NEAR ZERO EMISSIONS



# ROADMAP TO ZERO EMISSIONS RTG TRANSTAINER®

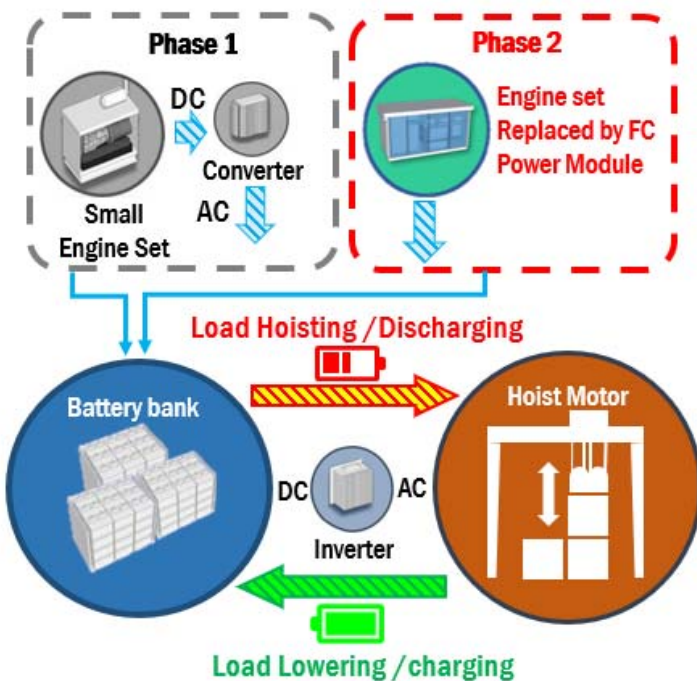
Do your terminal plans include cost reduction and zero emission yard cranes?

The Near Zero Emission (NZE) Hybrid Transtainer crane is equipped with a large capacity lithium-ion battery bank and a small diesel engine gen-set, to decrease fuel consumption, lower emission of CO<sub>2</sub>, NO<sub>x</sub>, and PM particles, and reduce maintenance cost without any impact to crane performance. The NZE concept also provides a low cost conversion path to a zero-emission solution once infrastructure for hydrogen is in place.

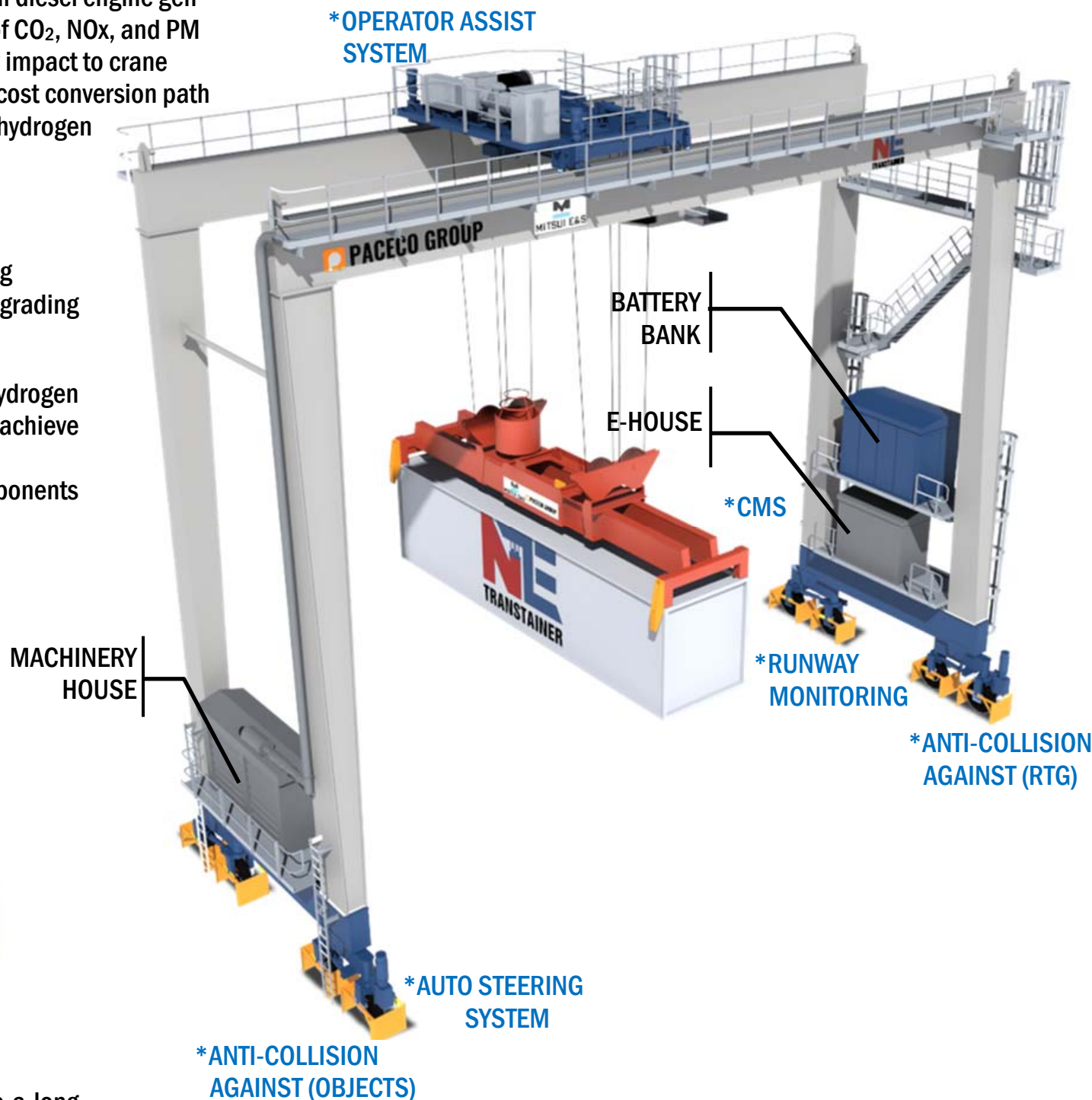
## NZE to Zero Emission (ZE) two-phase concept

Phase 1: Immediately lower emissions and operating expenses by procuring NZE Transtainers and by upgrading conventional Transtainers to NZE.

Phase 2: Easily swap the diesel genset with a hydrogen Fuel Cell (FC) Power pack and hydrogen tanks to achieve zero emission when hydrogen fuel supply is readily available in the terminal. Minimal changes to components or electrical system necessary for FC upgrade.



Rest easy knowing your investment today will have a long service lifetime even as environmental regulations tighten.



**\*OPTIONAL PERFORMANCE & SAFETY EQUIPMENT**

## MAIN PARTICULARS

Item	NZE Transtainer	Conventional RTG
Rated Load	40LT	Same
Hoist Speed (m/min)	No load: 52 Rated load: 23	Same
Traverse Speed (m/min)	70	Same
Travel Speed (m/min)	90 / 135	Same

## NZE POWER SYSTEM AT A GLANCE:

Engine output	Min. 50kW	Conventional RTG engine is about 500kW. Easy to swap with an FC module in the future
Battery bank	> 300%	Compared to PACECO existing Hybrid Transtainer
CO <sub>2</sub> emission	60~70% less	Compared with conventional RTG
Emergency recovery	Available	For several types

## UPGRADE OF PACECO CONVENTIONAL TRANSTAINERS TO NZE

PACECO conventional RTG Transtainers can be upgraded to a NZE Transtainer by adding battery banks, replacing the engine, and modifying the PLC software. Replacement of electrical components (i.e., PLC and Inverter) may be required, depending on the electrical system model.

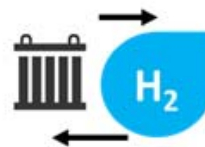
Please contact PACECO for a proposal to upgrade to NZE Transtainer.

## BRIDGE TO EMISSION FREE RTG TRANSTAINERS:

**F**uel savings compared to RTGs



**R**eplace energy module easily to  
FC technology



**E**ngine size reduction



**E**nvironmental impact today and the  
future



## **PACECO® GROUP**

### MAIN OFFICE

25515 WHITESELL STREET  
HAYWARD, CA 94545 U.S.A .  
PHONE: +1.510.264.9288

### SPARE PARTS OFFICE

D'Iberville, MS 39540 U.S.A.  
PHONE +1.228.872.1733

### L.A. OFFICE

1861 North Gaffey Street, Unit D  
San Pedro, CA 90731 U.S.A

### mitsui E&S MACHINERY CO., LTD.

6-4 TSUKIJI 5-CHOME  
CHUO-KU, TOKYO 104-8439, JAPAN

### MOMENTUM ADVANCED PORT SERVICES

Calle Alcalá, 79-1º B, 28009  
Madrid, Spain  
Tel: +34 91 761 97 00

Please send inquiries to

[nzecranes@pacecocorp.com](mailto:nzecranes@pacecocorp.com)