



PIANC
APAC
2024

Connecting Asia Pacific ports in a changing world

OmniLift™ Littoral Heavy Lift System Design

Presented By

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OmniLift™ Littoral Heavy Lift System Design

Introduction

Global energy production is changing to address the effects of carbon emissions on the climate

Many countries are replacing land-based fossil fuel generation with marine-based wind power generation

Decommissioning and recycling legacy marine hydrocarbon energy production systems and restoring marine ecosystems is an environmental priority

Littoral heavy lift systems capable of efficiently launching and retrieving large structures over many decades meet the need and secure the future



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Systemic Change to Energy Production is Happening

- Ports are supporting onshore wind power deployment
- Transition to offshore fixed based wind deployment is underway
- Floating offshore wind deployment will follow
- Demand on port infrastructure will increase at every stage



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Energy Production Transition Effects on Ports



THE NACELLE /
TOWER / BLADE
COMPONENT SIZE
IS INCREASING



MONOPOLE AND
FLOATING
FOUNDATION
PRODUCTION WILL
INCREASE
DEMAND ON
PORTS



VESSEL TRAFFIC
WILL INTENSIFY,
DRIVING NEED
FOR VESSEL
SUSTAINMENT
SERVICES



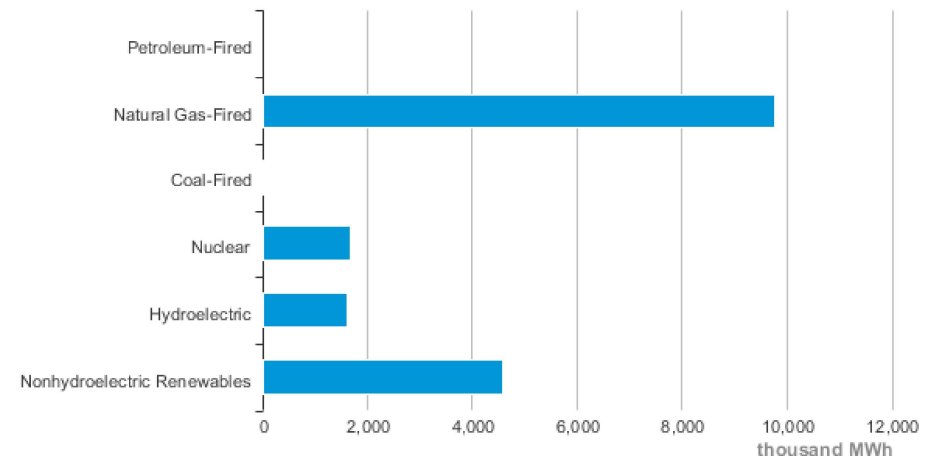
OFFSHORE FIXED
AND FLOATING
WIND ASSET AND
SERVICE VESSEL
SUSTAINMENT WILL
CONTINUE
INDEFINITELY

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California is the 5th Largest Economy in the World

- “100% of demand for 100 days” on renewables this year without OSW
- One 15MW FOSW = 80 GWh/Year or 9.1 MWh
- 1 100 FOSW = 10,000 MWh of Natural Gas-Fired Generation
- 1 100/120 Months=9 FOSW/Month
- 5% or 55 FOSW May Return to Port for Sustainment Annually at Year 5
- 4400 Turbine Maintenance Visits Annually
- 5% or 55 FOSW Annual Growth

California Net Electricity Generation by Source, Jan. 2024



eia Source: Energy Information Administration, Electric Power Monthly



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Permanent Multi-Use Port Facilities Are Necessary For a Successful Energy Transition



Implementation

Build and Launch Efficiently



Life Cycle Sustainment

Major Component Replacement
Life Extension
Sustainment of Maintenance Vessels



Decommissioning

Recycle and Reuse Materials

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Key Capabilities of Multi-Use Port Infrastructure

- Compatibility With Other Port Operations
- Efficient Use of Available Space
- Life Cycle Operational Support
- Safe and Reliable Infrastructure for Moving Large Assemblies and Generation Components Through a Repetitive Assembly Process
- Minimize Release of Carbon Into The Atmosphere



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The Right Tool for the Task

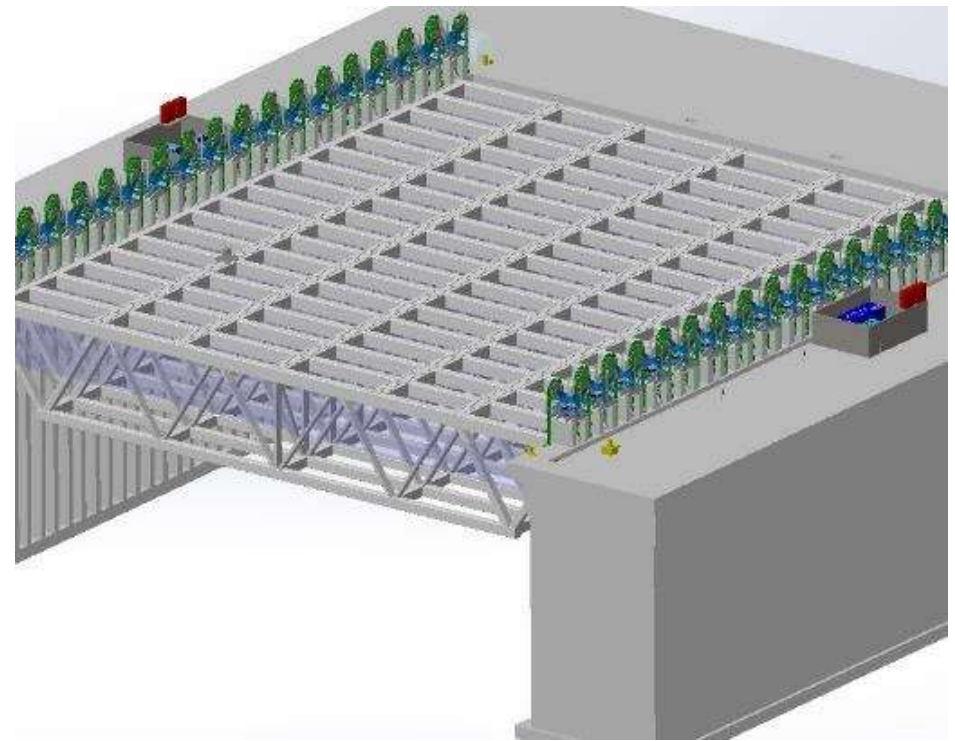
- Vertical Lift System
 - High Speed of Operation
 - Low OPEX Cost
 - Zero Carbon Emission
 - Compatible With Port Operations
 - Tide and Weather Independent
 - Multi-Purpose Infrastructure
- Cons
 - High CAPEX Cost



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No “New” Technology is Required

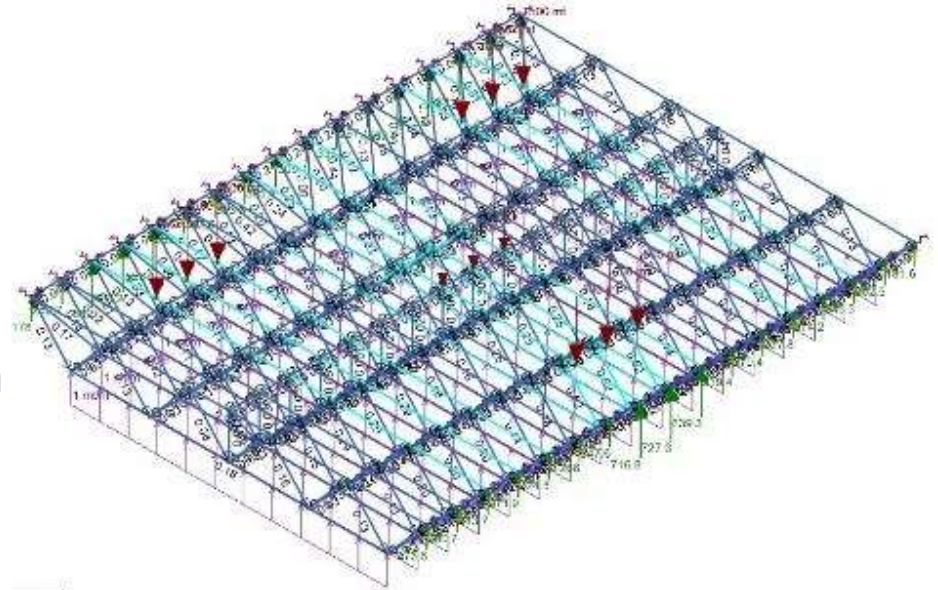
- Long Span Steel Trusses
- Lift Span Bridge Design
- Chain Jack Marine Lift Technology
 - 50 Years of Incident Free Marine Lifting Operations
- Scalable Capacity



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Steel Floating Foundation System Launch and Retrieval

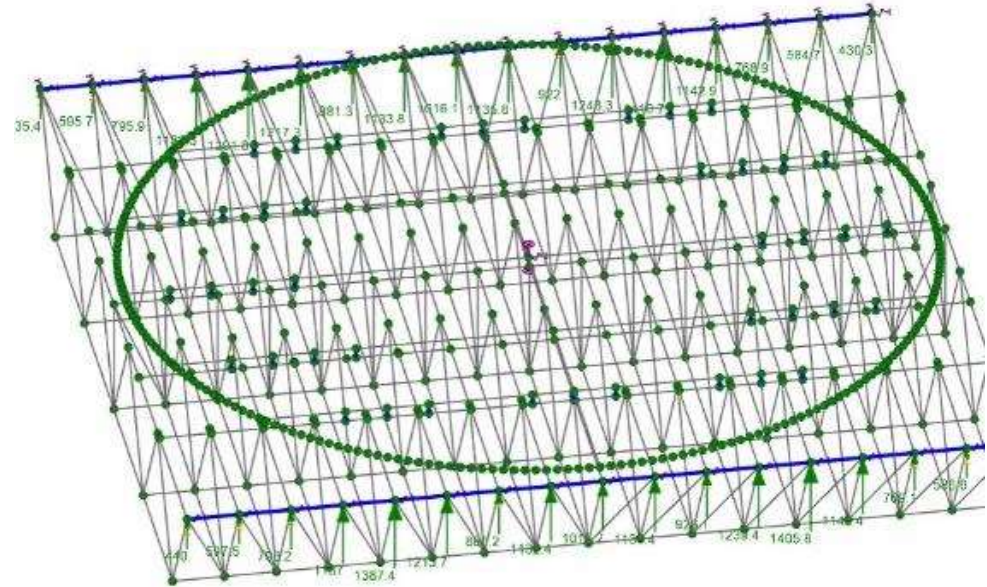
- Platform Widths of 90 to 105m
- Chain Jack Capacities 500 to 800 ton per lift station
- Capable of Launching and Retrieving Fully Integrated Platform and Tower



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Concrete Floating Foundation System Launch and Retrieval

- Platform Widths of 60 to 80m
- Chain Jack Capacities 1200 to 1600 tons per lift station
- Capable of Launching and Retrieving Fully Integrated Platform and Towers





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Thank you for your attention.