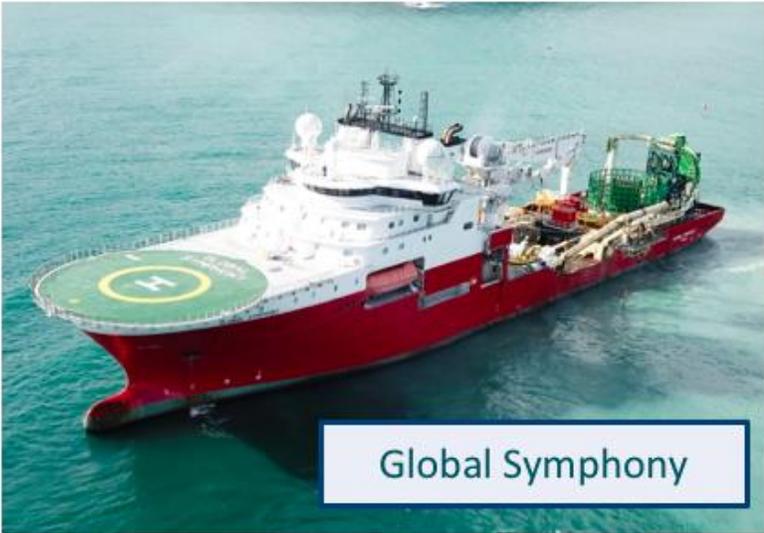


# Cabling: Floating Offshore Wind

Joel Whitman, Senior Vice President, Global Marine Group



# Cable Installation and Repair Assets



Global Symphony



Normand Clipper



Normand Cutter



ASV Pioneer

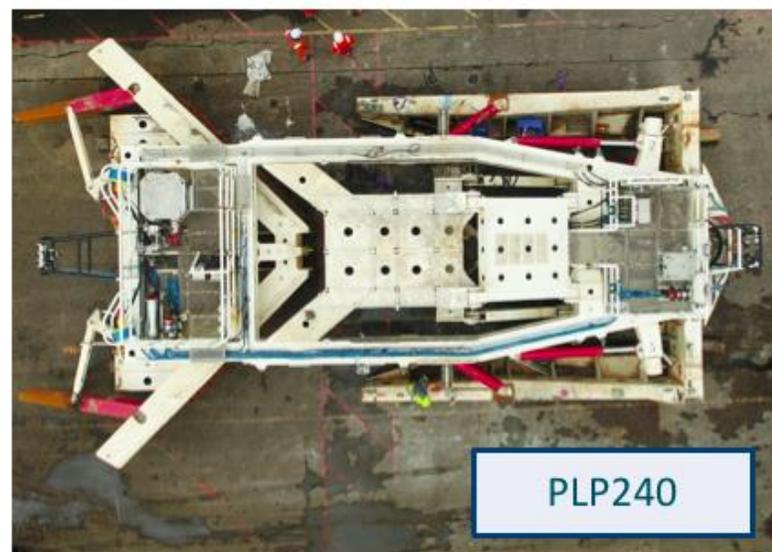


Jack-up Barge



Island Crown (W2W)

# Cable Installation and Repair Equipment



# Floating Wind Project Example



In 2018 the Kincardine Floating Offshore Wind Farm pilot site, the first in the UK built using its three platform design, began producing energy.



Dynamic Cable/Bouyancy Units



Turbine at Kincardine



PLP240 at Kincardine 2

# Dynamic Cable Project Example



## How is the cable installed?

- Array cable is usually a 33 or 66kv dynamic cable
- The cable is laid between the HDD at the shore end towards the floating offshore wind turbine using the vessel's cable lay equipment. Touchdown monitoring is provided by the vessel's (FCV 3000) ROV.
- As part of the lay operation, uraduct is often installed onto the cable where the dynamic riser touches down on the seabed providing mechanical protection to the cable from the motions applied by the floating structure.

## How is the cable protected?

- Rock bags are often used at the subsea HDD exit to support the cable span between the HDD duct and the seabed.
- To further protect the cable in the transition from duct to seabed, cast iron split pipe is installed onto the cable at this point.
- A cable burial ROV is used, in hybrid mode, to bury the 18km cable from landfall to the turbine location.
- Target depth is usually between 1-3 meters depending on project permits
- If burial target depth cannot be reached mattresses or rock bags are often used to protect those segments of cable

## How does Dynamic Cable work?

- A dynamic cable is specifically designed to remain in the water column
- Dynamic cables are a mature technology traditionally used in the offshore O&G industry
- A dynamic riser is used on the site to allow for movement on the platform.
- Buoyancy modules are installed onto the cable as well as it being routed through a bend stiffener before being pulled into the floating structure.

# Example Benefits of Floating Offshore Wind for Maine

## Floating Offshore Wind in Maine presents a number of benefits for the State

These include creating new jobs and boosting the local economy through:

- Research and Development
  - Vessel Design
  - Foundation Design
  - Offshore system design and operations
- Manufacturing and assembly of OSW components
  - Foundations
  - Anchors
  - Cable Protection
  - System components and parts
- Local operations
- Local port development to support construction and maintenance
- Year-round employment related to turbine assembly
- Long term employment for operations and maintenance

# Thank You

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