Case Study

Offshore Renewable Energy
Modular Local Equipment
Rooms for London Array

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Industry: Renewable Energy Production / Offshore Wind Farms
Client: Siemens Transmission and Distribution Ltd
Location: London Array - United Kingdom - Outer Thames Estuary

Background:
The first phase of the London Array consisted of up to 175 turbines generating 630MW - enough power to supply over 472,000 homes. Upon reaching its 1000MW capacity, it is the world’s largest offshore wind farm, making a substantial contribution to the UK Government’s climate change targets.

Challenges
- Reducing construction time
- Reducing high level of multi-discipline personnel at site.
- Difficulties of handling high specification and high value equipment in a fabrication yard environment.
- Intensive management of a traditional yard style construction project.
- Inclement weather conditions at topsides Fabrication yard.

Workslope
To provide Local Equipment Rooms (LER) to house specialist electrical distribution equipment as well as workshop and emergency accommodation facilities.
To be fully integrated on two in-field transformer platforms situated within the London Array Offshore Wind Farm development, without major disruption to the platform manufacturer’s yard operations.

Solution
OEG Offshore delivered detailed design, engineering and manufacture of 18 custom-built, transportable modular units fully outfitted & complete with customers equipment fully integrated. Providing high quality off-site prefabricated units in parallel to the main topsides fabrication. The units were designed to an offshore specification and have similar properties to OEG’s Variable Speed Drive (VSD) and Local Equipment Room (LER) modules supplied to the oil and gas sector.

- Full design and engineering of all units within the topsides structure.
- Prefabricated modules in a clean offshore location at OEG’s Aberdeen Modular facility.
- Installation and hook up of customers free-issue high specification / high value equipment in an environmentally controlled modular manufacturing facility.
- Transportation of units to the topsides Fabrication yard and off-loading supervision.
- Supervision of the installation of all units within the topsides and provision of final handover to the yard and customer.

Richard Horan, Project Manager at Siemens

“The modular approach has been chosen as it allows a fast and efficient platform build which is necessary to meet the right timescales for this project.”

“On-time delivery of equipment and modules is crucial to the wind farm being completed on budget and schedule, and we required a reliable company with a reputation for delivering quality services within the required timetables.

OEG Offshore met these criteria, and the company’s experience of delivery similar modules for offshore environments means they are well qualified for this project.”
Modular Local Equipment Rooms (LER) for London Array

Module Details

A total of 18 units were fully integrated over 2 platforms. Offshore Substation Platform Modules included:

- Switchgear Modules 150kv / 33kv
- OFTO: Control rooms
- LVAC / LVDC: Low Voltage Modules
- LAL: Metering Modules
- Welfare/Refuge Building and a Workshop/Office Modules

Fabrication of modules

Modules fully painted to offshore specification and ready for outfitting

Initial outfitting of modules

Outfitting work progressing

Modules positioned for equipment integration

Electrical & instrumentation integration complete

Load out of the modules from the UK to Belgium topsides Fab yard

Module integration into the structures on location at the topsides yard

Yard & offshore assistance with installation and commissioning

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