

Case Study



Offshore Wind

Modular Local Equipment Rooms
for London Array

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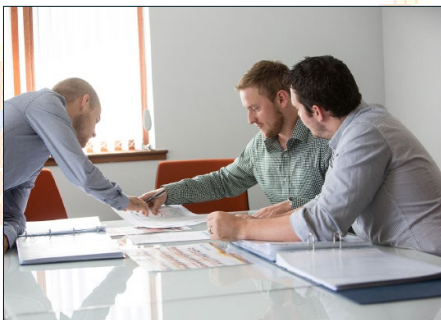


Industry: Renewable Energy Production / Offshore Wind Farms
Client: Siemens Transmission and Distribution Ltd
Location: London Array - United Kingdom - Outer Thames Estuary



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 was 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.

Workscope

To provide 18 custom-built pre-fabricated modular 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 with all customers equipment integration complete. 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.

Richard Horan, Project Manager at Siemens commented,

"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."

- Full design and engineering of all units within the topsides structure.
- Prefabricated modules in a clean offshore location at OEG's Aberdeen facility.
- Installation and hook up of 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.

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Module Details

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

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



Fabrication of modules



Modules fully painted to offshore specification and ready for outfitting



Initial outfitting of modules



Outfitting work progressing



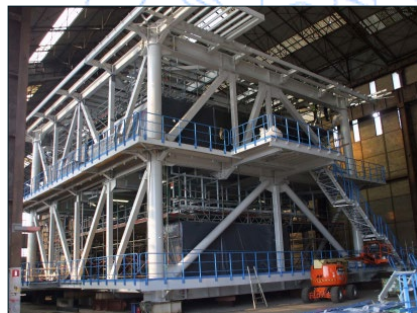
Modules positioned for equipment integration



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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