

PROJECT:

Hejre EPC Naval Architecture Assurance

**under-promise
over-deliver**



CLIENT:

Dong Energy

LOCATION:

Perth, Australia & Okpo, Republic of Korea



Linch-pin were engaged by Dong Energy to carry out assurance activities for the pre-service operations associated with transporting the modules and integrated deck of the Hejre facilities from South Korea to the North Sea.

Linch-pin carried out checks on transportation analyses of two self propelled heavy lift vessels laden with integrated deck, modules, cranes, gas turbines and associated equipment. Checks were based upon design basis conformance, due diligence on methodology, interpretation of results and correct use in module structural design and sea fastening load cases. Relative motion of key vessel locations to the incident wave surface were derived from first principles based upon the designer's global vessel motions, and spectral response prediction of green water magnitude and probability for key vessel locations was developed.

Independent analysis of the local transportation of the Modular Living Quarters (MLQ) on a dumb barge was carried out. Inertial response of the MLQ was calculated as well as the wave induced hull flexure, which was modelled using a spine model of the vessel bending and torsional stiffness upon which dead load, inertia, hydrostatic and hydrodynamic loads were mapped in the frequency domain. Inertia balanced deflection load cases were produced for combination with the dead load and inertia in the structural analysis of MLQ, sea fastening, grillage and vessel to be performed by others.

