

Case Study

Gas Compression Project



Case Study: Gas Compression Project

deugro Perth was invited by a major customer in Australia to bid on the project of a combined transportation package. This included one 220-metric-ton equipment room and two 650-metric-ton pre-assembled gas compression modules and accessories. Transportation was from Batam, Indonesia to the northwest coast of Western Australia.

After initial delays in the start-up of the project, the decision was made to postpone project construction, but still ship the fabricated equipment and components to Australia for storage and preservation until the project received final construction approval.

One 220 MT Equipment Room

In August 2014, following a detailed tender clarification process in which deugro competed against numerous heavy lift carriers and self-propelled barge operators, deugro Perth received the first project award from its Australian client to ship the initial Equipment Room (E-Room) package from Singapore to Henderson, in Western Australia.

The E-Room, weighing in at 220 metric tons and measuring a length of 34 meters, a width of 9.30 meters and height of 9 meters, was shipped

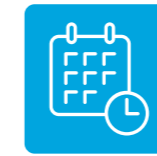
on a self-gearred heavy lift vessel.

The deugro Perth team received support from the deugro Singapore team in arranging the local barge charter and in coordinating the loading of the E-Room via floating crane alongside the vessel for loading in Singapore's Jurong Port.

The vessel arrived in Henderson, Western Australia in early September 2014, where deugro Perth was contracted to perform the SPMT scope of work and final delivery to the storage yard within the AMC Henderson complex. The E-Room was stored in Henderson until the project received final approval from the joint venture partners in late 2017.



EPC Industry
Oil and gas



Shipping Period
August 2014 to
July 2015



Cargo
220 MT E-Room,
2x 650 MT
modules and
accessories



Volume Shipped
25,430 CBM,
1,674 MT



E-Room in transit via SPMT from Henderson wharf to client's storage yard



Prefabricated staircase module being rolled onto vessel

Two 650 MT gas compression modules

Following the successful shipping and delivery of the 220-metric-ton E-Room package and, once again, extensive commercial and technical investigations regarding vessel suitability, deugro Perth was pleased to receive the final award to ship the two 650-metric-ton gas compression modules from Batam, Indonesia to Henderson, Western Australia. The modules and accessories were destined for a gas plant.

» deugro competed against numerous heavy lift carriers and self-propelled barge operators. «

Due to project delays brought on by the decline in the oil and gas market, the key equipment packages that had already been fabricated were planned to be held for storage and preservation in Henderson, just south of Perth, Western Australia.



Two gas compression modules awaiting loading at Sekupang, Batam, Indonesia

The deugro difference

A key driver in deugro being awarded the contract was our proposal to utilize a self-propelled barge or modular carrier. This type of vessel has a low draft, allowing it to berth at the fabricator's site jetty in Sekupang, Batam, Indonesia (which has a maximum depth of 5 meters at low tide). To accommodate this jetty depth limitation, deugro Perth sourced the *Dongbang Giant 5* from the specialized South Korean vessel operator Dongbang.

With an empty draft of 3.20 meters, the *Dongbang Giant 5* could easily berth at the Sekupang jetty where, even after loading the two 650-metric-ton modules with a loaded draft of approximately 4 meters, there would still be sufficient and safe under-keel clearance from the seabed.

The Dongbang fleet of module carriers caters to the favored engineering approach in Australia of modularization, whereby oil and gas, mining, or similar plant

packages are prefabricated as pre-assembled modules (PAM), rather than the more traditional stick-build construction method.

The vessel allows for roll-on by SPMT trailer of extreme heavy lift or oversized equipment packages for stowage and sea-fastening on deck.

Scope of work

deugro's scope of work included the grillage and sea-fastening design, as well as mooring, vessel stability, and stowage calculations, which required heavy involvement and support from dteq Transport Engineering Solutions, a company of the deugro group; deugro Singapore; and a third-party naval architect contracted by deugro Perth.

» It required four days to install the grillage, perform roll-on, and sea-fasten the modules and other packages to the deck. «

The vessel was fixed on a free in/free out basis with the fabrication vendor responsible for loading (via roll-on by SPMT) the packages on board the vessel and installing all grillage and sea-fastening. The *Dongbang Giant 5* berthed at the Sekupang jetty, and required four days to install the grillage, perform roll-on, and sea-fasten the modules and other packages to the deck.

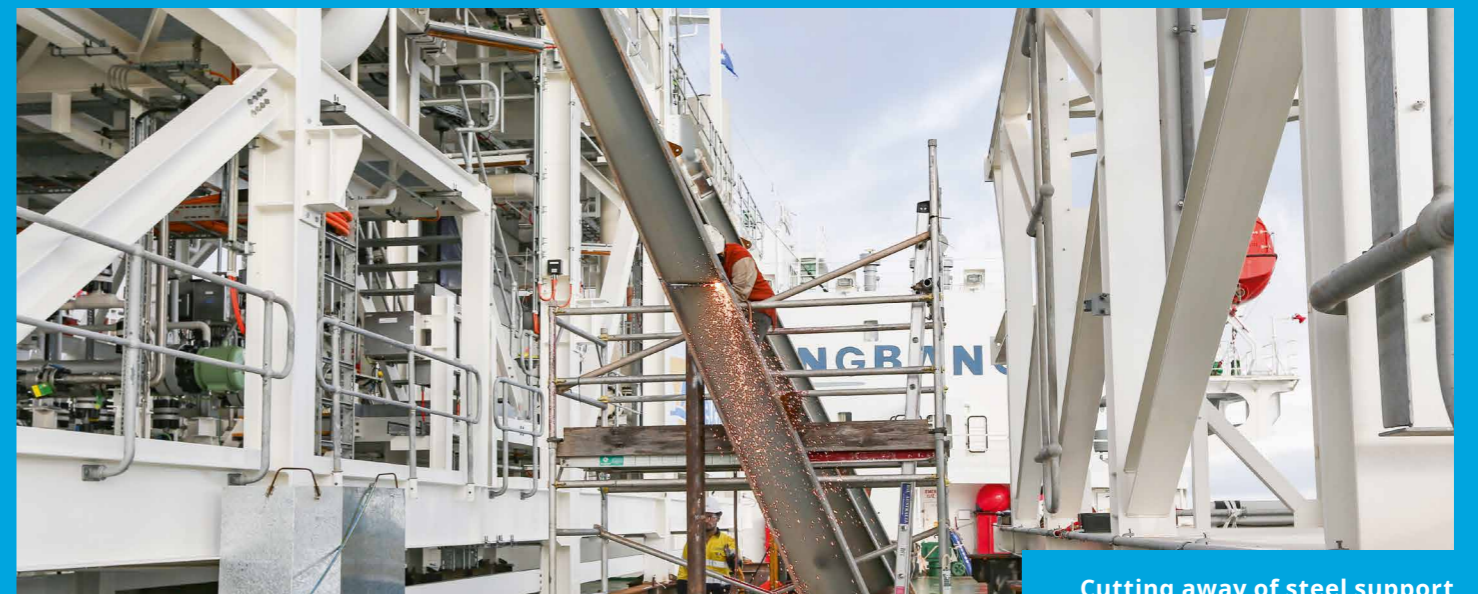
deugro was responsible for the vessel mooring and tug support while at berth and the ultimate shipping to Henderson, the discharge from the vessel, and delivery to the client's final storage yard within the AMC Henderson Complex in Western Australia. The vessel departed Batam on June 17, 2015 and arrived in Henderson on schedule.



Taking two days to discharge, the packages were rolled off the vessel and staged at the AMC Henderson's Berth 1 prior to delivery to the client's storage yard.

Over the course of just two days, all packages were delivered over approximately 2.50 kilometers from the Berth 1 staging area to the client's storage yard.

The modules and previously shipped E-Room were to be stored in Henderson until the project received final approval to proceed from the joint venture partners.



Cutting away of steel support beams on arrival in Henderson, Western Australia

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