

# PROJECT SHEET

## MOHO NORD TLP PROJECT

LOAD-OUT AND FLOAT-OFF IN KOREA. SUBSEQUENT FLOAT-ON IN KOREA AND TRANSPORT TO AND FLOAT-OFF IN GABON

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### INTRODUCTION

The Moho Nord TLP was built by HHI for end-client Total. It was put into service offshore Congo in the Moho Nord field. The Moho Nord Field is located in 750 to 1050 metres water depth, at about 20 to 30 km from the existing Moho Bilondo FPU (Floating Production Unit), 25 km from Nkossa Field and 80 km from the Djéno Onshore Terminal.

Dockwise was contracted for the load-out and float-off in Ulsan, Korea and the subsequent float-on and dry-transport to Port Gentil, Gabon. The TLP measured 68 x 68 x 93 [m] (L x W x H) and weighed 16,000 [mt] during load-out and 18,000 [mt] during transport from Korea to Gabon.

### FEATURES

Client	HHI (Hyundai Heavy Industries)
Operator	TOTAL
Loading locations	Ulsan, Korea
Discharge location	Ulsan, Korea / Port Gentil, Gabon
Period	Preparation: December 2014 – June 2014 Execution: July 2015 – January 2016
Vessels	HYSY 278
Contractor	Dockwise



**A**

- A** Location map
- B** The HYSY 278 with the TLP and 2 stability barges at the quay of the HHI yard



**B**

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### PREPARATION AND OUTFITTING

After 7 months of intense preparation and engineering, the float-on of two stability barges in August 2016 marked the start of the execution phase. The barges, measuring 60 x 40 x 6 [m] each and owned by Dockwise, were stacked on top of each other and were needed to provide additional stability during the float-off of the TLP in Korea.

### LOAD-OUT KOREA

Upon arrival in Ulsan (Korea), the vessel was outfitted with six (6) skid-tracks and supporting grillage. After completion of the steelworks, on October 9th the load-out operation commenced. One day later the cargo was in position and the shimming and seafastening works started. During the load-out the platform was skidded over the side of the vessel by means of a push-pull system. The main challenge here was the high center of gravity of the TLP combined with the weight of ~16,000 [mt], resulting in low stability of the vessel at the final steps of the skidding operation.

### FLOAT-OFF KOREA

Only a few days later, the HYSY 278 left the quay-side for its 5-mile journey to Ulsan anchorage. Overnight the vessel was ballasted and the next day the TLP was successfully floated-off. In the month that followed HHI commissioned the TLP. At the same time, the two stability barges were floated-off, the grillage was removed, deck extensions were fitted and cribbing wood was laid out.

### FLOAT-ON KOREA

On the 20th of November, the TLP was floated back on the HYSY 278 at Ulsan anchorage. The vessel returned back to the quay-side for seafastening activities and on the 30th of November, the vessel set sail to Gabon. During the voyage, the seafastenings and cribbing wood were carefully monitored by the vessel crew.



### FLOAT-OFF GABON

Early January 2016 the HYSY 278 arrived in the bay of Port Gentil. Cutting of seafastenings was done in less than 24 hours and in the night of 11-12 January the vessel ballasted down to float-off draft. At sunrise the next morning the TLP was again successfully floated-off by the Boskalis Union Sovereign and the HMC Bylgia. Afterwards the vessel set sail to Cape Town, South-Africa, where she was reinstated.

### PROJECT CHALLENGES:

The main challenges, which were dealt with effectively during the project preparation and execution, were:

- A limited GM during load-out and float-off as a result of the high center of gravity of the TLP in combination with the weight.
- Different operations following each other in rapid succession (float-on barges -> load-out TLP -> float-off TLP -> fitting deck extensions -> float-on TLP -> voyage -> float-off TLP)
- Limited time available for preparation and engineering in combination with last-minute additions to the contract

### CONCLUSION

With several critical operations following each other in rapid succession, the project team, together with the Client, kept focus and never dropped the ball. With ample preparation and engineering time, the TLP was successfully loaded and transported to its destination in Gabon.



- C** The Moho Nord TLP prior load-out at the HHI yard  
**D** Float-off of the TLP from the HYSY 278  
**E** The HYSY 278 submerging for the float-off of the TLP at Ulsan Anchorage

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