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Collaboration for EPC of Offshore Structures

H.S. Shin., W.S. Sim., J.S. Moon., K.Y. Yoon. ; Hyundai Heavy Industries Co.

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Abstract

Korean shipyards have been leading the construction of newbuilt offshore structures in the last 10 years. HHI (Hyundai Heavy Industries Co.) is one of major EPC contractors and has successfully built several FPSOs, drilling rigs and FPU's intended for worldwide operation. HHI has established a strong reputation in construction as the world leading shipbuilding yard and has highly experienced workforce. Numerous novel methods enhancing HHI's competitiveness were employed in its recent endeavors. They include new construction methods (Ground Build Method), work on new technologies in collaboration with external research entities and participation in JIPs; the recent one focused on nonlinear impact fluid forces due to slamming, green water and viscous roll damping.

HHI is also well established in the area of hull design for offshore industry. It has recently designed fatigue free FPSO using FMS (Fatigue Methodology Specification) co-developed by EMDC and DNV.

HHI can respond with high degree of flexibility to client's needs as it owns extensive facilities (several dry docks) and has mastered effective project management methods. This paper summarizes the recent successful offshore projects from the perspective of accomplishment through collaboration.

Introduction

From the last decade, Korean shipyards have been at a No. 1 position in newbuilt FPSO market. As presented in Table 1, Korean shipyards had 16% and 9% share of FPSO hull and topside fabrication market respectively until 2007[1][2][3].

Table 1 FPSO Market Share

	Hull fabrication (Korea/World wide)	Topside fabrication (Korea/World wide)
FPSO including - operating - under construction - being bid	22/138 (16%)	12/138 (9%)

Since 1976, HHI has provided various kinds of service as a key contractor in offshore field. HHI's role in the offshore market has changed from PC(Procurement and Construction) contractor to EPIC(Engineering, Procurement, Installation and Construction) contractor.

During the 1970s ~ 1980s, HHI mainly focused on the construction of ships and offshore structures because the full scope of offshore engineering was above its capability. The main competitiveness of HHI was well trained workers and low cost of labor. In the field of fixed offshore structures, from early 1990s, HHI succeeded in becoming an EPC contractor. All technologies needed in engineering are provided by HHI itself.