



**Global and China FPSO Industry Report,
2011**

Dec. 2011

STUDY GOAL AND OBJECTIVES

This report provides the industry executives with strategically significant competitor information, analysis, and insight on the competitive pattern and key companies in the industry, crucial to the development and implementation of effective business, marketing and R&D programs.

REPORT OBJECTIVES

- ◆ To establish a comprehensive, factual, annually updated and cost-effective information base on market size, competition patterns, market segments, goals and strategies of the leading players in the market, reviews and forecasts.
- ◆ To assist potential market entrants in evaluating prospective acquisition and joint venture candidates.
- ◆ To complement the organizations' internal competitor information gathering efforts with strategic analysis, data interpretation and insight.
- ◆ To suggest for concerned investors in line with the current development of this industry as well as the development tendency.
- ◆ To help company to succeed in a competitive market, and understand the size and growth rate of any opportunity.

METHODOLOGY

Both primary and secondary research methodologies were used in preparing this study. Initially, a comprehensive and exhaustive search of the literature on this industry was conducted. These sources included related books and journals, trade literature, marketing literature, other product/promotional literature, annual reports, security analyst reports, and other publications. Subsequently, telephone interviews or email correspondence was conducted with marketing executives etc. Other sources included related magazines, academics, and consulting companies.

INFORMATION SOURCES

The primary information sources include NBS(National Bureau of Statistics of China), China Customs, and Wind etc.

Abstract

Offshore engineering equipment consists of exploration equipment, drilling facility, production equipment and auxiliary equipment.

Production platforms include fixed platforms and floating platforms, and the latter are the mainstream in the current market, mainly including tension-leg platform (TLP), spar platform (SPAR), semi submersible platform (SEMI) and floating production, storage and offloading equipment (FPSO).

With respect to the number of floating production platforms, FPSO accounts for approximately 60%, ranking first, followed by SEMI, TLP and SPAR. SEMI is mainly applied in the North Sea and South American waters, while TLP and SPAR are mostly located in Gulf of Mexico (GOM). FPSO is likely to be the most promising one in the future.

As of December 1, 2011, there are 187 FPSOs in operation around the world, of which 108 FPSOs are run by operators and the rest 79 FPSOs are operated by petroleum companies. The number of FPSOs in West African waters hits 44, ranking No. 1, and that in South American waters, British and Chinese waters reaches 39, 17 and 17, respectively. Moreover, 16 FPSOs are situated in Australian waters, 9 FPSOs in Vietnamese waters and 8 FPSOs in Indonesian and Norwegian waters separately. Around 60% of FPSOs are conversions, and 40% are newly built ones.

Among large petroleum companies, Petrobras possesses 16 FPSOs, ranking No. 1, and has ordered another 8 FPSOs. From 2012 to 2015, Petrobras will launch 17 FPSOs into operation. CNOOC now owns 14 FPSOs and does not plan to add any more recently. CNOOC is still at the infancy stage of deep-sea oil exploration and development. French Total has 6 FPSOs, 5 of which are located in West African waters, and the company plans to add 5 FPSOs by 2017 in West African waters. The petroleum companies in USA are mainly engaged in GOM and onshore oil field projects. SHELL focuses on the LNG area, has poured USD5 billion into building the world's first LNG-FPSO and shown little interest in ordinary FPSO.

Floating production platforms are principally centralized in the waters of West Africa, South America, Southeast Asia and Australia, GOM and the North Sea. And those in West African waters are mainly centered in Nigeria, Angola, Equatorial Guinea and Congo. Among these four countries, Angola has witnessed the fastest development due to its political stability, while in other three countries, the political unrest has promoted the replacement of fixed platforms and oil pipelines by FPSOs, because fixed platforms and oil pipelines are extremely vulnerable to sabotage while FPSO features high safety factor, small investment and quick economic returns.

The South American waters are mainly controlled by government-owned Petrobras. The Brazilian government hopes that local enterprises will become the biggest beneficiaries of offshore oil exploitation. In 2009, Petrobras invited bidding for 8 FPSOs, and 5 groups of manufacturers were involved in the bidding. The bidders included Keppel, the world's largest FPSO conversion enterprise, SBM Offshore, the world's largest FPSO operator and Hyundai Heavy Industries, the world's largest shipbuilder. All these enterprises formed alliance with Brazilian companies, but they were too powerful to be chosen by the Brazilian government. Finally, the alliance of Swedish GVA and Brazilian Engevix won the bid which totaled USD3.46 billion. GVA was chosen because it's just a design company.

Because of the harsh environment conditions of GOM, TLP and SPAR become the best option and TLP is generally adopted. The North Sea is similar to GOM in environment, and SEMI is mostly employed, for the development of oil field may not last long. In the sea waters of Southeast Asia and Australia, Indonesia and Vietnam, especially the latter, show strong willingness in the exploitation of oil resource, while more natural gas fields are in northwest Australian waters. Arctic waters also have great potential and will be the paradise for FPSO because of its harsh environment.

Approximately 60% of FPSOs are converted from oil tankers.

Generally speaking, the oil fields which can be explored for more than 20 years will tend to be equipped with new FPSOs, while the oil fields which can be exploited for less than 15 years tend to opt for converted tankers. A newly-built FPSO costs around USD300-500 million, while a converted tanker costs USD50-200 million. In order to prevent large single-hull tankers from polluting the environment in case of shipwreck, IMO decided to advance the implementation of the phase-out scheme for single hull tankers proposed in December 2003 from 2015 to 2010. FPSO offers an opportunity for the revival of single-hull tankers.

Such factors as vessel size, age and structure are essential in the FPSO conversion. The tanker built before 1990 is backward in technology and is inappropriate to be converted into FPSO. FPSO develops towards ultra-large capacity, especially in West African waters, where only the tanker with a capacity of 250,000 DWT or above is proper to be converted into FPSO.

FPSO operators mostly start up and thrive from tanker or LNG transportation business and have a huge number of fleets. BW Offshore, MODEC, TEEKAY, SBM Offshore, Maersk and Fred. Olsen are such operators. With extensive experience in offshore production, these enterprises cannot be replaced by large petroleum companies, and are able to enjoy rich profits, with EBITDA margin generally surpassing 35%.

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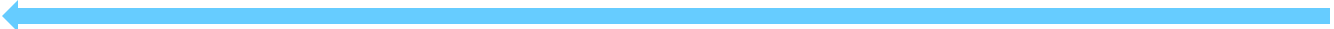
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