Singapore Marine Industry's Performance in 2017

OVERVIEW

Total Turnover

2017 continued to be a difficult year for the Singapore marine and offshore engineering industry, as crude oil prices remained low despite an extension in output cuts by OPEC and oil-producing countries in the attempt to rebalance global oil inventories. The global business environment remained uncertain although there are signs of improved market sentiments and more favourable outlook towards the end of the year. Upstream drilling and production activities recovered modestly, with global rig count bottoming out in June. Day rates stayed the same at lower levels, only picking up in September. The global offshore exploration and production (E&P) spending was less than 10% year-on-year growth in 2017.

Although there have been signs of improvement in the offshore oil and gas industry with encouraging developments in global E&P capex spending, stabilisation of day rates and increase in offshore rig transactions, the flow of new orders remained weak.

Amidst the challenging market conditions, the Singapore offshore & marine engineering industry managed to churn out a total turnover of S$9.8 billion in 2017, based on deliveries of projects clinched from earlier contracts. The total turnover in 2017 was 25% lower than the turnover of S$13.06 billion achieved in 2016, due to the lower volume of work and deferment of some offshore rig projects. The major projects completed in 2017 included construction of the world's first floating liquefaction vessel (FLNG), conversions of Floating Production Storage and Offloading (FPSO) vessels and construction of a multi-purpose ice-class vessel, littoral mission vessels, trailing suction hopper dredgers, as well as a semi-submersible drilling rig.

The ship repair and conversion sector accounted for the largest share of the total industry turnover in 2017. It generated S$5.55 billion, accounting for 56.6% of the industry turnover. The offshore and rigbuilding sector brought in S$3.93 billion or 40.1% of the total turnover. The shipbuilding sector contributed S$0.32 billion, making up 3.3% of the industry's turnover.

Order Books

Against the unfavourable business conditions and difficult operating environment, Singapore shipyards secured some S$3.8 billion in new orders during the year. These new contracts were mainly for FPSO and LNG projects. This was a significant pickup of orders from that of S$820 million contracted in 2016. The recovery in oil prices and shift in business focus to the growing LNG market saw new orders streaming in.

As at end 2017, the industry's total order book stood at some S$8.35 billion. This marked a slight increase from the total order book of S$8 billion as at end 2016. The total order books included the backlog of orders clinched from earlier years.

New projects in the order books included FPSO conversion projects, LNG containerships, LNG carriers, dredgers, a Tension Leg Wellhead Platform project, construction of hull and living quarters for newbuild FPSO, fabrication of a turret mooring system for a newbuild FLNG, construction of dual-fuel LNG carriers and two compressed gas liquid carriers.

Docking Capacity

In 2017, there were 16 dry docks in Singapore, one fewer than the year before. The 16 docks have docking capacity ranging from 100,000 to 500,000 deadweight tonnes and a combined total docking capacity of 4,830,000 deadweight tonnes.

Apart from the dry docks, there were 14 floating docks and ship lifts with lifting capacity ranging from 2,050 to 40,000 tonnes. The combined total lifting capacity of these floating docks and ship lifts was 232,450 tonnes in 2017. This was lower than the total lifting capacity of 248,950 tonnes from 16 floating docks and ship lifts in 2016.

Total Employment

Total employment in the local marine and offshore engineering industry was 72,200 workers in 2017. The total workforce shrank by 15.7% or 13,400 fewer workers compared to 85,600 workers employed in the year before. The decline in recruitment was due to fewer projects, retrenchment and natural workforce attrition as well as fewer work permits renewed in 2017. The number of workers employed in the industry has been decreasing since 2013, a significant reduction was in foreign manpower recruited.

Industry players have embarked on technology upgrading and reskilling in the face of rising competition and manpower constraint brought on by the tightening of work permit quota. Reskilling and upskilling of the marine workforce remains a key focus and included the redeployment of manpower to move into new job roles in the industry. This is to position the industry to take on opportunities in new growth areas in the years to come.

Workplace Safety & Health

Workplace Safety and Health (WSH) is a core value in the Singapore marine and offshore engineering industry. The Association works closely with industry members and other stakeholders to embrace a Vision Zero incidence goal for the safety movement. The goal is to build up a strong WSH culture through continuous enhancement of safety competencies and capabilities, commitment from management, and involvement and support from various stakeholders.

On the whole, the industry improved on its WSH performance in 2017. The number of workplace accidents in the industry dropped to 295 in 2017 from 368 in 2016. This was a decline of 19.8% in accident cases or 73 incidents fewer compared to 2016. The number of workplace fatalities in the industry decreased to two in 2017, down from six cases in 2016. The workplace fatality rate declined to a record low of 2.7 per 100,000 employees in 2017, a significant improvement from the rate of 6.7 per 100,000 employees in 2016.

The Accident Severity Rate (ASR) was 95 man-days lost per million man-hours worked in 2017. This was half the ASR of 190 man-days lost per million man-hours worked in 2016. The industry's Accident Frequency Rate remained the same at 1.5 accidents per million man-hours worked in 2017 as compared to the year before.

SECTORAL PERFORMANCE

Ship Repair & Conversion

The ship repair and conversion sector generated a turnover of S$5,547 million, accounting for 56.6% of the industry's total turnover. This was an increase of 21.4% or S$977 million more than the S$4,570 million earned in 2016. The sector's contribution to the total turnover rose by 21.6%, up from 35% in 2016.

The Maritime and Port Authority of Singapore (MPA)'s port statistics showed a total of 3,507 vessels calling in Singapore for ship repair work in 2017. This was a decrease of 255 vessels compared to the 3,762 vessel calls recorded in 2016. The reduction represented a drop of 6.8% in the number of vessels calling in Singapore for ship repair. However, the total gross tonnage of the vessels that called for repair increased to 33,714,000 grt in 2017 from 30,332,000 grt in 2016. This was 3,493,000 grt or 11.6% higher than the year before.

The total gross tonnage of vessels repaired has increased, indicating that Singapore is shifting focus to repairing higher tonnage vessels to address the competition from low cost countries. Meanwhile, the shipping industry continued to witness global alignments, reconfigurations, mergers and acquisitions in 2017.

Singapore shipyards maintained fleet agreements and alliance partnership contracts with long term customers. These provided a steady stream of repair, upgrading and refurbishment projects for the major shipyards. Vessels repaired under these alliance agreements included tankers, cruise ships and LNG carriers. With her increasing track record in cruise ship repairs and upgrades, and the boom in global cruise tourism especially in Asia, Singapore is well-positioned to seize the opportunity in this specialised market.

Singapore topped the global list for the repair and upgrading of LNG carriers. The industry has honed its skills and capabilities, upgraded its facilities and broadened its LNG engineering solutions to provide holistic solutions to LNG owners and capitalise on this niche market segment.

Eight conversion projects were completed in Singapore in 2017. These included six FPSO/FSO conversions, one FLNG conversion and one crane vessel conversion. The projects included the fabrication of SOFEC internal turret for *FSO Maersk Culzean;* conversion of tankers to FPSOs for *FPSO MTC Ledang* and *FPSO John Agyekum Kufuor;* FPSO modules integration and completion for *FPSO BW Catcher;* EPC conversion for *FPSO Pioneiro de Libra*; conversion of *Rangrid FSO*; and conversion of heavy lift vessel to crane vessel for heavy load carrier semi-submersible *Bokalift 1*.

A significant milestone was the successful delivery of FLNG *Hilli Episeyo*, the world's first FLNG vessel conversion project. This FLNG vessel is expected to be a game changer in the LNG industry, providing a more cost effective and faster to market solution. Other vessels which docked in Singapore for major repairs during the year included LNG carriers *Northwest Stormpetrel*, *Methane Kari Elin* and *Sevilla Knutsen*, containerships *Ningbo Express* and *Al Manamah*, passenger cruise ships *Pacific Dawn*, *Diamond Princess* and *Sea Princess*, research vessel *Ramform Sovereign*, offshore support vessel *Ocean Shield*, bulk carrier *Global Vanguard*, FPSO *Glas Dowr*, tanker *Polar Endeavour* and tug *Alp Striker*.

Shipbuilding

The shipbuilding sector contributed S$323 million to the industry's total turnover in 2017. This was an increase of S$123 million or 61.5% higher compared to the turnover of S$200 million in 2016. Shipbuilding activities accounted for 3.3% of the total turnover in 2017, up from 1.5% in 2016.

The shipping sector showed signs of recovery with demand picking up and improved freight rates. The number of vessels launched was comparable to last year. 74 vessels were launched during the year with a total gross tonnage of 107,127 grt. This was comparable to the 73 ships launched in 2016. However, the total gross tonnage was 62.1% lower or 175,792 grt less than the total gross tonnage of 282,919 grt for the vessels launched in 2016. The lower gross tonnage of the vessels launched meant more smaller ships that were built in Singapore during 2017.

As in previous years, most of the vessels launched were workboats, followed by barges, utility vessels, tugs and offshore supply vessels. Among the newbuilds completed in 2017 were an ice-classed multi-purpose supply vessel *MPV Everest* and patrol vessels *RSS Unity* and *RSS Justice.*

Offshore Rigbuilding

The offshore rigbuilding sector generated a turnover of S$3,930 million in 2017. This was a decline of S$4,360 million or 52.6% from the turnover of S$8,290 million achieved in 2016. This sector accounted for 40.1% of the industry's turnover, down 23.4% from its share of 63.5% in 2016.

The major newbuild offshore project delivered during the year was *Helix Q7000*, a well intervention semi-submersible. Besides this, some 14 jack-ups and semi-submersible rigs and one drillship were repaired and converted in 2017.

INDUSTRY OUTLOOK

The recovery in oil prices has led to more positive market sentiments and a growing optimism in the marine and offshore engineering industry. Investment decisions for new offshore projects have gathered momentum with increased offshore rigs utilisation and stabilisation in day rates, although the offshore rig market continues to be plagued by oversupply in most drilling segments. Hence, rig order recovery will take some time to materialise and reach an equilibrium between the demand and supply for offshore rigs.

Although shale or unconventional oil will continue to impact the energy sector, industry watchers believe that offshore oil is slated to make a comeback, with offshore oil producers becoming more competitive against other players in the market. To maintain its leadership position, Singapore shipyards will have to help the offshore oil sector become more cost-effective and more efficient operationally through the design of smarter rigs, incorporating sensing technology, artificial intelligence and robotics.

In the immediate future, industry activities will remain low as oil majors need time to restart their exploration and production programmes. We will continue to see industry consolidation and the emergence of new drilling operators. Nonetheless, there are opportunities in the North Sea and in emerging markets such as Brazil, Mexico and Africa.

There are also opportunities in the production and non-drilling sectors such as in the demand for production assets, LNG solutions and specialised vessel. LNG continues to be an attractive fuel source as the global trend towards environmentally-friendly alternatives comes to fruition. Global expenditure on LNG is projected to exceed US$280 billion by 2021, while global offshore wind market is expected to surge past US$130 billion by 2023. Demand of vessel repairs and upgrades, especially for LNG carriers and cruise ships, remain strong. With our strong track record in LNG vessel repairs and experience in LNG conversion and proven cryogenic expertise, Singapore is well-placed to develop and capture new solutions across the entire gas value chain and capture opportunities in the gas business.

Regulations on ballast water treatment requirements coming into force in 2019, along with the International Maritime Organisation's global sulphur cap in 2020, will support the renewal of the shiprepair market with installations and retrofits of ballast water management systems. The opening of sea routes in the Artic has enabled more ships to access the region and tap into its vast natural resources as well as venture into remote areas for cruise ship tourism. The industry can further develop its capabilities for environmentally-fragile arctic frontiers as another area of growth.

Meanwhile, a major trend towards digitalisation is transforming all industries. Digital technologies such as data analytics and artificial intelligence can help the industry improve operational efficiency, develop cost-effective solutions and generate new revenue streams. Major players in the industry are starting to embrace digital technologies. This involves research into emerging technologies and new opportunities, developing manpower,

products, systems and processes, and cross-collaboration with government institutions, industry players and solution providers.