

### OVERVIEW

#### Total Turnover

2014 proved to be a volatile year for the Singapore marine and offshore engineering industry while it reaped the results of project deliveries of past contracts; it also witnessed the slowdown and potential impact of a downturn in the offshore industry.

The second half of the year saw oil prices falling from US\$110 a barrel to about US\$50 per barrel by year end. The plunge after four years of high oil prices has been attributed to oversupply in oil with geo-political factors accelerating the fall.

Overall, the industry performed well in 2014 on the back of successful completion and delivery of a number of offshore projects secured in earlier years as well as higher revenue recognition from completed rig building and offshore conversion projects. As a result, the industry achieved a total turnover of S\$17.23 billion in 2014.

The increase in turnover of S\$1.93 billion in 2014 was 12.6% more than the turnover of S\$15.3 billion attained in 2013. This total turnover of S\$17.23 billion is a new milestone and a new record for the industry, one which would be difficult to surpass in the coming years given the uncertain global economic climate brought on by lower oil prices and cutbacks in exploration and production budgets. The industry's performance in 2014 was remarkable given the increasingly difficult market conditions and global slowdown from second half of the year.

Since 2008, the rigbuilding and offshore sector has been the largest contributor to the total turnover, having overtaken the ship repair and conversion sector, the traditional backbone of the industry for decades. The rigbuilding and offshore sector generated S\$11.2 billion in 2014, accounting for 65% of the total industry turnover.

The ship repair and conversion sector was the next largest contributor with S\$5.51 billion or 32% of the industry's turnover. The shipbuilding sector brought in S\$0.52 billion, constituting 3% of the total turnover.

#### Orderbook

In 2014, the industry secured contracts for new orders totalling some S\$9.7 billion. These orders are for rigbuilding and ship conversion projects, and do not include ship repair and upgrading contracts. Although the orderbook is S\$1.5 billion lower than the orderbook of S\$11.2 billion booked the year before, it is still sizeable considering the current market condition. Many of the new rig orders awarded are for the proven high-performance proprietary jack-up rig designs such as KFELS B Class and Pacific 400 Class owned by Singapore shipyards.

The year 2014 closed with a total industry orderbook of S\$23.93 billion worth in contracts. These contracts have completion dates and deliveries stretching till 2019.

#### Docking Capacity

Docking facilities and capacity in Singapore remained the same in 2014 with the total number of dry docks at 19. These dry docks have capacities ranging from 5,000 to 500,000 deadweight tonnes. The total docking capacity stands at 4,952,000 deadweight tonnes.

The total number of floating docks and ship lifts remained at 15 with lifting capacities ranging from 2,050 to 40,000 tonnes. The total lifting capacity of these floating docks and ship lifts is 236,950 tonnes. This is slightly lower than the previous total capacity of 237,150 tonnes in 2013, the reduction attributable to ageing of facility.

#### Total Employment

In 2014, the marine and offshore engineering industry employed a total of 106,600 workers. This was a 2.8% decrease or 3,100 workers fewer compared to the previous year's employment of 109,700 workers.

A disciplined, skilled and competent workforce at various levels is a competitive advantage for Singapore. The industry is led by passionate and committed leaders at various levels of hierarchy, whose strong project management capabilities have helped to ensure safe execution and timely delivery of projects.

A quality workforce is hallmarked by a strong training culture in the industry. Major shipyards and marine

companies have invested in training infrastructure and resources in-house to ensure that workers are trained and re-skilled continuously to keep up with changing requirements to execute work safely. The key industry players worked with the Association of Singapore Marine Industries (ASMI) to set competency standards, develop generic curriculum for training of marine workers and supervisors as well as certify workers' skill competency.

In recent years, academic courses on marine and offshore technology have been introduced at the technical, diploma and degree levels to ensure a continuous pipeline of trained manpower to support the specialised manpower needs of the industry. ASMI continues to partner key industry players to offer scholarships to students enrolled in relevant courses at the technical institutes, polytechnics and universities. This collective offering of scholarships is aimed at attracting more talents to join the industry as well as to groom competent leaders for the industry.

## **Workplace Safety & Health**

Workplace Safety and Health (WSH) is a key area of focus in the industry. ASMI is a strong advocate of WSH and sets out to inculcate a safety culture with zero tolerance for incidents in the industry. Shipyards and marine companies are mindful that WSH is an integral part of their business. They have incorporated WSH into their operations and put in place WSH management systems to eliminate hazards, mitigate risks and implement safe work practices at their workplaces. They have taken measures to raise safety awareness and equip workers with safety knowledge, risk assessment and relevant trade skills training to ensure safety at work.

Shipyards and marine companies have embarked on the journey to attain bizSAFE accreditation. The bizSAFE Level 3 certification has been enforced as a minimum requirement for companies entering major shipyards for work since 2009 as part of the efforts to inculcate a safety culture in the industry.

Despite these efforts, there were four workplace fatalities in the industry in 2014, one more than the year before. This resulted in a 33.3% increase in workplace fatalities. Workplace fatality rate for the industry rose from its record low of 2.7 per 100,000 employees in 2013 to 3.8 per 100,000 employees in 2014. This bucked the downward trend in workplace fatality rate in the industry for the past three years.

In view of the increase in workplace fatalities, the Accident Severity Rate (ASR) also increased to 135 man-days lost per million man-hours worked in 2014. This is an increase of 26.2% in ASR from 107 man-days lost per million man-hours worked in 2013.

The number of workplace accidents in the industry dipped in 2014. There were 502 workplace accidents during the year compared to 511 accidents in 2013. This was 9 cases fewer or 1.8% lower than the previous year. The Accident Frequency Rate (AFR) in 2014 remained at 1.6 accidents per million man-hours worked. Industry members remain committed to the vision of zero injury at their workplaces.

## **SECTORAL PERFORMANCE**

### **Ship Repair & Conversion**

The ship repair and conversion sector performed creditably well in 2014 to record a higher turnover of \$5,510 million. It accounted for 32% of the total industry's turnover. This was a slight increase of 16.1% year-on-year. It is S\$776 million more than the S\$4,744 million achieved in 2013. The sector's contribution to the industry's turnover in 2014 rose by 1%, up from 31% the year before.

Port statistics from the Maritime and Port Authority of Singapore recorded a total of 6,335 vessels calling for repair in Singapore in 2014. This was a reduction of 7.9% or 546 vessels less than the 6,881 vessels that called here for the same purpose in 2013. Recovery from most of the shipping sectors has remained slow.

However, the total gross tonnage of the vessels that called for repair increased to 40,247 million grt. This was 6,171 million grt or 18.1% higher than the total gross tonnage of 34,076 million grt in 2013. Larger vessels are calling at Singapore for repairs with the additions of bigger VLCC-sized docks. Most of the repair and upgrading works were carried out on tankers, bulk carriers, container ships, liquefied natural gas (LNG) carriers, Floating Production, Storage and Offloading (FPSO) vessels, passenger ships and dredgers.

Fleet agreements and alliance contracts signed with long term customers have provided win-win solutions for both shipyards and their clients. These agreements provided a steady stream of ship repair, upgrading and refurbishment jobs for the shipyards. Such partnerships with regular customers accounted for as much as 70% of the workload in the major shipyards.

Eight FPSO and Floating Storage and Offloading (FSO) projects were completed in Singapore in 2014. These

FPSO/FSOs were here for conversion, repair, refurbishment or modification and upgrading. Of the eight, six were FPSOs while two were FSO vessels. Four for conversion projects.

## Shipbuilding

Singapore is a builder of customised and specialised vessels. In 2014, shipbuilding activities contributed a total S\$520 million in turnover. This is S\$321 million or 38.2% lower than the turnover of S\$841 million posted in 2013. The shipbuilding sector accounted for 3% of the industry turnover in 2014, down from 5.5% in 2013.

98 vessels were launched during the year, 13 less than in 2013. The total gross tonnage of the vessels launched in 2014 was 267,561 grt. This is 10.9% lower or 32,858 grt less than the total gross tonnage of 300,419 grt for vessels launched in 2013.

Majority of the vessels launched were offshore support and supply vessels, followed by workboats, barges, ferry boats and fast crew & supply boats. Other vessels launched included anchor handling tug vessels, dredgers, research vessel, motor launches, patrol crafts and naval vessels.

## Offshore Rigbuilding

The offshore rigbuilding sector generated a turnover of S\$11,200 million in 2014. It is the largest contributor to the industry's total turnover. There is an increase in of S\$1,483 million or 15.3% more than the turnover of S\$9,717 million generated in 2013. Its share to the industry's total turnover rose by 1.5% to 65%, up from 63.5% in 2012.

In 2014, the industry completed a total of 14 newbuild jackup rigs including two mammoth rigs which are currently the largest jack-ups in the world. The industry also has another 18 jackup rigs in the work in progress or planning stages. Repair and upgrading works carried out on several rig projects during the year including jackups, semi-submersibles as well as an accommodation platform and semi-submersible pipe laying barge.

## INDUSTRY OUTLOOK

2015 kicked off on a cautious mood amid a weakened market caused by the current slump in oil prices. There is uncertainty in the near term as the global energy landscape continues to evolve. The industry is facing strong headwinds from the volatility in oil prices and cut-backs in upstream capital expenditure for oil & gas exploration and production (E&P). These factors together with the oversupply of rigs and lower day rates for rigs are putting pressure on demand from oil producers for offshore rigs and other marine engineering solutions.

With low oil prices, oil companies are cutting budgets and reducing spending on E&P activities. This has a significant impact on investments in current and future offshore construction projects, and especially in new field development and challenging E&P activities such as in deepwater drilling. There has been a slowdown in new order momentum and no major offshore contracts have been awarded since the beginning of the year. The local shipyards have seen a review of planned projects, modification of contracts and deferred delivery of projects.

Despite the challenging environment, outlook for the marine and offshore engineering industry is still positive, cushioned by a healthy backlog of orders. The industry's total orderbook of S\$23.9 billion in contracts secured over the past two years has completion dates and deliveries extending to 2019. This will keep the shipyards and marine companies busy for the next two years.

According to Wikborg Rein, the oil price collapse has affected all rig types, with the hardest hit being in the global deepwater market segment, given its higher exploration and production cost compared to shallow water drilling. On the outlook of E&P spending, Barclays estimated E&P budgets of oil and gas companies to reduce by 8.8% globally in 2015. Given current uncertainty in the global markets, the first reaction of oil producers would be to defer decisions and preserve cash until the long term outlook becomes clearer.

Oil price is not expected to remain low. Low oil price is not sustainable in the longer term given that demand for oil is likely to remain strong. Global consumption of energy will continue to increase with a growing middle class and fast-paced urbanisation fuelling demand for energy. In the longer term, drilling activities will have to continue again to replace depleting supply to meet continuing demand for oil. The global decline from existing fields in production is estimated at 5% a year. This means that by 2030, over half the existing global production will disappear, and will need to be replaced.

Despite the decline in oil prices, there are still opportunities for the industry such as in the shallow water market where breakeven cost for oil production is much lower, the growing LNG market and the ageing global rig

fleet. Existing fields will need to be maintained and enhanced. Hence there will be continued demand for offshore support vessels and lift boats including accommodation platforms.

The Middle East oil and gas market whose oil fields are fully developed and located in shallow water with lower cost of production, remain robust. Reuters reported that “bucking the global trend, Kuwait, Saudi Arabia and the UAE are all raising their rig count and expanding their drilling programs.” Pareto Securities stated that national oil companies such as Saudi Aramco and Pemex are expected to keep their overall rig count steady in 2015.

Regions like Southeast Asia, Africa and Brazil are reported to be still active for production units. In Mexico and India, oil and gas exploration and development are expected to continue to support and achieve their goals of energy self-sufficiency. The lower oil price environment has emphasised the need to optimise cost and increase efficiency on every dollar spent. Oil companies will seek to reduce the day rates for their chartered rigs and increase productivity of their units.

The new trend in the global energy mix will see LNG taking on a bigger role in helping to meet the growing demand for energy. There is opportunity in the LNG market with increase in demand for natural gas and potential lies in natural gas liquefaction systems, LNG vessels and FLNGV.

The repair and maintenance of LNG carriers is a highly specialised market segment and Singapore has honed its capabilities to provide repair, refurbishment and upgrading services to LNG carriers. Sembawang Shipyard is recognised as the leading shipyard for LNG repairs, refits and life extension works in the world.

Singapore is also making foray into the FLNGV sector with the conversion for two such vessels. Keppel Shipyard is taking the lead in performing the world's first-of-its-type conversion of an existing MOSS LNG carrier into a FLNGV. Both FLNGVs are near-shore vessels and expected to provide efficient alternative liquefaction solutions for piped gas from onshore terminals. The FLNGV also offers cost effective option for developing fields at remote locations where large infrastructure investment is not economical.

The ageing of existing global rig fleet also presents opportunity for Singapore rigbuilders. More than 50% of the world's jackup and semi-submersible rigs are 25 years old and above. The significant investment required to upgrade an older rig makes scrapping a more economical alternative. In the face of oversupply of rigs, drilling contractors are taking decisions to scrap older rigs. There has been a higher pace of rig scrapping in recent years. Replacement demand for rigs is expected to return in the medium to longer term. Older rigs will have to be replaced with safer and more efficient rigs with better capabilities to drill more challenging wells.

## **CONCLUSION**

The past four years have been hectic for the marine and offshore engineering industry in Singapore. The present global slowdown will ease the workload in the industry hit by manpower shortage from the tightening of foreign manpower resources. Industry players should take advantage of the current slowdown to develop, enhance and broaden their existing range of product and service offerings to provide more alternatives, more product types and more cost-effective solutions to customers. They should also make use of this period to review business processes and introduce changes to increase operational efficiency, reduce costs and improve productivity.

The industry has weathered many challenging cycles successfully in the past five decades with lessons learnt put to good use. It has emerged from each downturn stronger and more resilient than before. This time will be no different given the industry's agility to respond and adapt to changing market conditions, and its ability to deliver new efficiencies through technological innovation to stay ahead of the competition. Singapore has invested in research and development efforts and in developing capabilities to support the industry's growth. Such capability development will have to continue to sharpen its competitive edge and sustain growth in the longer term.