



Rijksdienst voor Ondernemend  
Nederland

# *Sector Report Japan: Developments in the offshore and shipbuilding industry*

*>> Duurzaam, Agrarisch, Innovatief  
en Internationaal ondernemen*



## Colophon

### Sector Report Japan: Developments in (Offshore) Shipbuilding

Prepared by Embassy of the Kingdom of the Netherlands, Tokyo  
Consulate-General of the Kingdom of the Netherlands,  
Osaka

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## **1** Goal of the report

The purpose of this report is to give an overview of the Japanese shipbuilding industry by highlighting recent developments within this industry in Japan. This report also includes information of the major relevant organizations in Japan related to shipbuilding, as well as information about the most relevant conferences that are held in Japan each year. With this report we hope to serve companies active in the shipbuilding industry that would like to know more about opportunities in the Japanese ship- and offshore structure building sector.

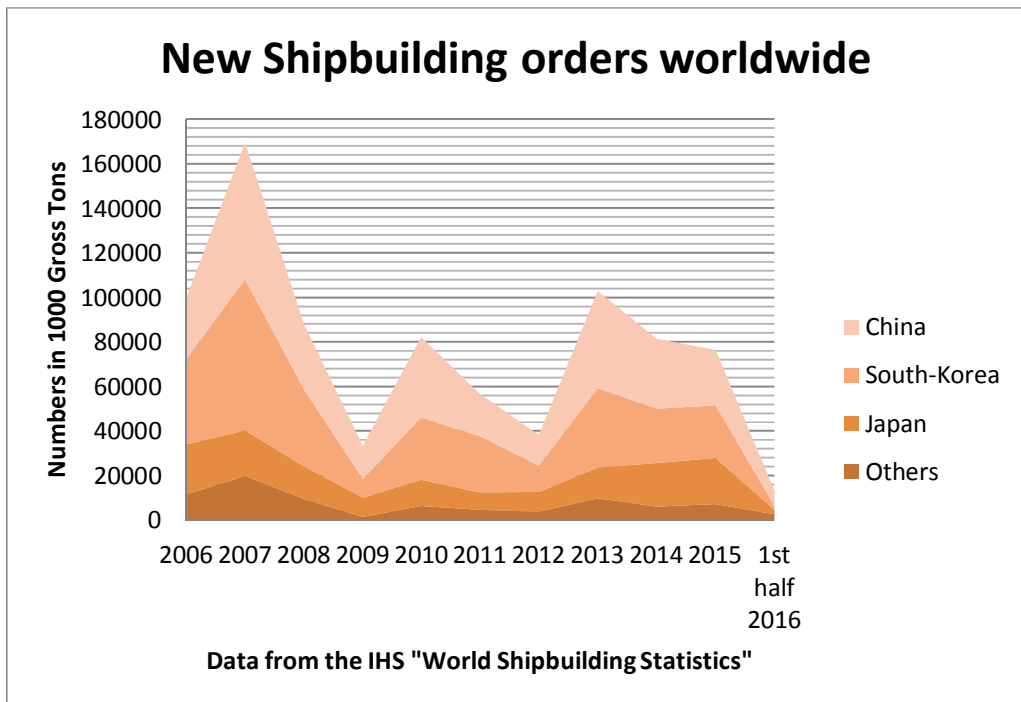
In the report a division is made between ships intended for transport of goods, which are usually built in series, and ships and structures intended for the offshore industry, which are usually built on a one-off basis and that are more technically sophisticated in nature.

## 2 Executive Summary

- Japan has been one of the biggest shipbuilding nations for a long time. However, after losing a big part of its business to South-Korean and Chinese shipyards during the nineties, Japan is now looking to reclaim her old position.
- The current oversupply of cargo ships worldwide has led to a steep decrease in orders for yards worldwide in 2015/2016. Japan has been better able to stave off this decrease than China and South-Korea.
- While continuing to build conventional cargo ships, Japan is shifting focus to more technologically advanced ships, to diversify itself from China and South-Korea. This provides new opportunities for Dutch companies.
- Japan is also foraying into the offshore oil/gas industry. As Japanese firms do not have recent experience in this industry, this also provides opportunities for companies to provide new technologies.
- Finally, offshore wind is another major area of interest for the Japanese government. A program to promote Dutch companies and technologies in Japan has been in place since 2014.
- Opportunities for Dutch companies may be found in all areas, shipbuilding, offshore oil & gas, offshore wind, for those companies that have cutting-edge know-how or technology to assist Japanese wharves to optimize their production processes, or that otherwise lead to cost-cutting or more efficient products.

### 3 Background

In recent years the global maritime shipbuilding industry has taken a few blows. The Financial crisis that started in 2008, followed by a slowdown of the Chinese economy, caused a drop in total world shipbuilding orders from about 170 million gross ton in 2007 to 76 million gross ton in 2015.



Despite this, Japan's share of ship orders taken after years of domination by Chinese and Korean shipyards worldwide is slowly increasing again.

Of the ships being built in Japan the following shipyards are most active and account for the bulk of ships built in Japan:

<b>Japanese shipbuilding company</b>	<b>Newbuilds in 2013 (x1000 gt)</b>	<b>Turnover 2014 (billion yen)*</b>
Imabari Shipbuilding group	2.998	403
Japan Marine United	2.616	271
Namura shipbuilding group	1.510	92 (2015)
Oshima shipbuilding	1.295	124
Tsuneishi shipbuilding**	731	290*
Shin Kurushima Dockyard group	692	94
Mitsui engineering & shipbuilding***	635	49
Kawasaki Heavy industries***	562	72
Mitsubishi Heavy industries***	459	75
Modec (offshore only)	-	296

\* 1 Euro = 113 JPY (8 August 2016)

\*\* Also involved in transport, no turnover available for shipbuilding segment

\*\*\* Turnover for shipbuilding segment only

In the offshore sector things are slightly more complicated as several companies do not just build, but also own vessels such as MODEC, which is a subsidiary of Mitsui engineering and shipbuilding. However, as the shipbuilding companies do not split their operations into freight and offshore regarding turnover, it was not possible to gather information on the turnover in the offshore segment for these companies.

Regarding the ship-owners, the percentage of ships owned worldwide by Japanese firms has negligibly changed, from 14.1% in 2010 to 13.6% in 2014 of all transport ships worldwide. Even though the percentage has only slightly changed, the total fleet has increased from 574 million gross tons in 2001 to 1.123 million gross

tons in 2013, meaning the fleet of the Japanese owners have also almost doubled.

The biggest ship-owners, also known as the “big 3” are the following:

Japanese shipowner	Turnover in 2014
<b>Nihon Yusen Kaisen (NYK)</b>	2402 billion yen
<b>Mitsui O.S.K. Lines</b>	1817 billion yen
<b>Kawasaki Kisen Kaisha</b>	1352 Billion yen

Up until a few years ago most Japanese shipbuilders and ship-owners alike focused mainly on the freighter industry. However, as the Japanese shipyards saw their share of newly built ships drop, losing out to South-Korean and Chinese shipyards in terms of cost, they found the time was ripe to switch focus to more specialized industries like the cruise-ship and the offshore industry. The margin on these ships is much higher than on cargo ships. Regarding the offshore industry, oil prices were at an all-time high, and even more advanced technology to drill oil in deeper seas became available which created an entirely new market for offshore oil/gas operations. Therein parallel there was a shift in the renewable energy sector, and especially in Japan offshore windpower started to slowly gain momentum, spurring shipyards and ship-owners even more to enter this seemingly lucrative market.

Interestingly enough, in the last few years the Japanese shipyards became competitive again due to a cheaper yen, and South-Korean shipyards had changed their focus to the offshore industry a few years earlier, which led these shipyards to accept fewer orders for cargo ships, which also explains the resurgence of shipbuilding in Japan in the last two years. On the other hand, the price of oil also went down, which has caused some doubts about the feasibility of a move back into offshore amongst several of the shipyards.

The following sections will take a further up-close look at both the transport sector and the offshore sector.



## 4 3 Sectors

### 4.1 Transport shipbuilding

The slowdown of China's economic growth combined with the apparent overproduction of ships at Chinese, South-Korean as well as Japanese shipyards since 2007, has caused a disparity between supply and demand of cargo ships, as well as a shipbuilding overcapacity.

This situation regarding an oversupply of shipping capacity will persist for at least a few years and it is expected that many shipyards will be without work soon, especially in China and Korea, many of which are already in the red. Even though many of the Japanese shipyards will be able to weather the slump thanks to their savings and full order books stretching to 2019, more consolidation of shipyards is expected.

At the same time, a resurgence of the Japanese shipbuilding industry is taking place in the transport sector. The depreciation of the yen in the last two years has increased competitiveness, and combined with a quality that is hard to match by the South-Korean and Chinese shipyards, has turned Japanese shipyards into attractive partners for shipbuilding again. The current crisis has also meant that Japanese yards are looking at ways to reinvent themselves and make themselves appealing for the few orders that are being made in the short-term, coupled with searching for structural improvements aiming to keep the upper hand in the long-term.

On top of this the International Maritime Organization (IMO) has introduced new regulations for all newly built ships that have come into effect in the last few years. These include stricter regulations for emissions of nitrogen oxide and sulfur oxide, as well as the amount of noise that is allowed in sleeping and working areas for the crew. This has led first of all to a temporary increase of ships ordered before the respective regulations came into effect, and secondly to a rush in R&D spending.

Not all Japanese shipyards are prepared to deal with all of the changes required because of these new regulations, and therefore are looking overseas for technologies that are readily available and can be implemented in a timely manner.

The maritime bureau of the Japanese Ministry of Land, Infrastructure and Transport (MLIT) presented a report on the maritime industry which details the ambition to regain a 30% share of world-wide shipbuilding by 2025. The means by which they aim to

achieve this ambitious goal is to differentiate themselves from Chinese and Korean yards through ever more advanced technology; amongst which technology related to Internet of Things (IoT) is specifically mentioned. And even though some say Japan will lose some of its competitiveness due the resurgence of the yen, MLIT predicts that this development will be compensated by the increasing labor costs in Korea and China.

Finally, some shipyards such as Kawasaki Heavy Industries have indicated that they will change their focus from traditional bulk carriers and containerships to more specialized LNG carriers, mega-containerships and dual-fuel vessels as they are generally considered to be more profitable due to the higher specialized nature of these ships and the accompanying added value.

#### 4.2

##### Shipbuilding Offshore oil&gas

In the offshore industry for oil and gas the current trends are similar to those of the transport sector. In the oil & gas sector low oil prices of the past two years are the main cause for the malaise. This was further compounded for some Japanese shipyards that made a bet on Brazil and invested heavily in local shipyards to produce, amongst others, specialized offshore support vessels (OSV's), and Floating production, storage and offloading (FPSO) vessels for the local gas&oil industry. However, as Brazilian oil and gas company Petrobras is plagued by scandal and the Brazilian economy has come to a grinding halt, all big investing Japanese shipyards, Mitsubishi HI, IHI (parent of JMU) and Kawasaki HI have sold their shares and pulled out of Brazil.

Another example of the bad timing of Japan's re-entry in the offshore market can be

##### Interview with Mr. Leo Leusink, COO of ALP Maritime.

ALP Maritime is a specialist company in the field of ocean towing, offshore positioning and mooring of floating platforms, heavy transport and salvage operations. In the past working in a former Dutch company, they had five of their ships built at a Japanese shipyard, and currently under management of ALP Maritime four more are being built there.

Mr. Leusink: "The choice for a Japanese shipyard was partially a matter of coincidence. We had almost placed an order for five ships with a Singapore shipyard, but this one went bankrupt just before signing the contract. A Japanese company, Fukada Salvage and Marine Works Co., Ltd., with whom we have worked for a long time, pointed out Niigata Shipbuilding & Repair in Japan as a good alternative."

"I respect the Japanese shipyards greatly, the first five ships we ordered were all delivered on time and within budget, which made the choice where to build the next four an easy one. This second order had a few complications because of the highly technical nature of these ships. I strongly believe that the delays and higher costs for the shipyard were caused by bad communication and a lack of understanding of the Japanese mindset on the part of the Norwegian firm who did the design for the ships. However, the shipyard is really coming through and the ships are turning out to be great as expected."

"I fully support the Japanese shipyards' endeavour of the last few years to return to the offshore industry, and have found that the Japanese shipyards have a great advantage over foreign competitors in terms of quality and timeliness."

seen by the acquisition made by Chiyoda corporation, a Japanese engineering firm. They acquired 50% of EMAS in the summer of 2015 to form a joint venture with Ezra Holdings, which is a contractor for the offshore oil&gas industry. In March 2016 they had to announce a 4.5 billion yen loss on their investment.

Despite the current negative trend in the oil&gas offshore sector, the Japanese shipyards, the government-funded Japanese National Maritime Research Institute (NMRI) (See section 5 for more information), as well as the world's second largest classification society in the maritime industry, ClassNK, are serious about re-entry into the offshore market, and are investing heavily into R&D to be ready for new demand when the oil price goes back up, and to become a reliable and attractive partner for offshore construction in the medium- to long-term.

The government is especially serious about efforts to return, and MLIT has appropriated 600-800 million (5-7 million Euros) yen for education in and promotion of the development of the Japanese offshore industry in the last three years, for which no money at all was allocated as recently as 2012. Officials from MLIT have also indicated an increased willingness from Japanese companies in offshore technology to work with foreign partners, based on a questionnaire MLIT handed out at their seminar for the offshore industry. In the report earlier mentioned in the shipbuilding sector, MLIT also expresses the hope that Japanese manufacturers will be able to book orders for big-budget offshore projects by 2025.

Another indicator of the seriousness of Japan's intentions to return to the offshore market can be seen from the participation of the Japan Ship and Machinery and Equipment Association in the Offshore Technology Conference for the first time in 47 years this April along with 16 Japanese companies.

Finally, of the big 3 mentioned earlier, NYK has made clear their intentions to double down and has recently added to their investments in their offshore fleet, so they now control ships and structures in all segments of the offshore industry. They already took a 50% share in KNOT, a Norwegian shuttle tanker firm in 2010, and have in June 2016 also taken a 25% share in the aforementioned EMAS. They are looking to increase their presence in the offshore industry even more and have stated their ambition to make the offshore branch their second largest behind their LNG carrier business.

Based on the above trends, there may be opportunities for companies who employ cutting edge technology as Japan has been out of the offshore industry for many years. Because of their

sustained absence and the rapid technological advances that are being made in this industry, it is hard for Japan to close the gap by themselves, and companies are therefore looking for any technology that might give them an advantage, including overseas technology.

#### **4.3 Shipbuilding Offshore wind**

The offshore wind sector is the only sector where recent news has been mainly positive. Japan has a unique coastline and the seabed drops off to several hundred meters depth only tens of meters out of the shore in most places due to the fact that Japan's archipelago is located at the nexus of several tectonic plates.

As a result the potential for near-shore fixed offshore wind turbines is limited, and the Japanese government, commercial partners and research institutes have invested heavily in feasibility projects for floating offshore windmills.

The Japanese government is serious about the development of the windpower potential in Japan, but for both the near-shore fixed windmills as well as the floating windmills, there is currently a crying lack of support vessels to install windmill parks that are being planned, which is expected to lead to more orders for structures and support-vessels from foreign parties. A recent construction order for a vessel to install wind turbines for which the design was done by GustoMSC gives a possible indication of future developments.

In order to make up for this, Japanese shipyards have also started to look at the production of vessels for the wind energy sector together with the Japanese NMRI and ClassNK, but there has also been movement in the field of takeovers. For example Marubeni, one of the largest Japanese trading houses has acquired Seajacks - a UK company that owns jack-up rigs that they operate for both the wind and oil&gas industry.

In the offshore wind energy industry there is currently a so-called Partners in International Business program to promote Dutch companies in the wind energy field in Japan. Please contact the embassy for more information.

## 5 Opportunities

There is a clear desire in Japan to move away from the simple series type cargo ship where Japanese yards have a competitive disadvantage to yards in South-Korea and China, which also have small profit margins. Instead yards are hoping to gain more orders in specialized one-off type ships in all markets, whether transport, offshore and/or even passenger ships. This desire combined with the fact that the Japanese shipyards do not have all the required technology in-house to achieve this desire, indicates that there may be opportunities for highly technologically advanced companies who can show their added value to these shipyards.

However, even though Japanese shipyards and the Japanese government are ambitious in their approach to modernizing Japanese shipyards and are especially sensitive to technology that differentiates them from South-Korean and Chinese shipyards, they are highly cautious when it comes to implementing new technology and will in most cases only work with companies that are well established and have a good track record.

It may therefore be helpful to ensure that companies looking to enter the Japanese market already have experience of deals in other markets or have objectively proven data to convince Japanese companies that their technology is trustworthy and indeed of added value. Furthermore, regular visits to Japan to build relationships, and participation in trade fairs are essential to build one's brand and to gain trust.

### Success case: VAF Instruments

One example of a successful company in Japan is VAF Instruments, manufacturer of maritime measurement systems, who were able to enter the Japanese market by providing cutting-edge measurement technology, and have been able to retain their position by staying ahead of potential local competitors through constant innovation.

They shared with us that they found Japan required a different approach from the Western market; Patience and investments in relationships with local parties were of paramount importance to build their brand, and also to keep it and further expand it in Japan.

A direct starting point with Japanese counterparts would be the Japanese Marine Equipment Association as one of their tasks is to help foreign parts manufacturers find agents in Japan (see section 5 for their website).

Finally, make sure to contact the embassy in Tokyo or the consulate-general in Osaka as they are here to assist any Dutch company looking to Japan with specific questions and more advice on market entry.

## 6 Useful Contacts

### **The Shipbuilders' Association of Japan - [www.sajn.or.jp/e/](http://www.sajn.or.jp/e/)**

*They are an association comprising of the biggest shipbuilding companies in Japan like the ones mentioned in the first section of this report.*

### **Japanese Marine Equipment Association - [www.jsmea.or.jp/index\\_en.html](http://www.jsmea.or.jp/index_en.html)**

*Association for Japanese manufacturers of marine equipment. They also function as an intermediary for foreign companies looking for an agent in Japan.*

### **National Maritime Research Institute - [www.nmri.go.jp/index\\_e.html](http://www.nmri.go.jp/index_e.html)**

*Japan's biggest government funded research center for maritime technology. They work closely with several Japanese universities, as well as with some foreign research institutes, amongst which MARIN.*

### **ClassNK - [www.classnk.or.jp/hp/en/index.html](http://www.classnk.or.jp/hp/en/index.html)**

*Japan's biggest ship classification society. They have certified 20% of the world's merchant fleet. They also perform research together with Japan's universities, the NMRI and Japanese shipyards.*

### **Maritime Innovation Japan Corporation - [www.mijac.co.jp/eng](http://www.mijac.co.jp/eng)**

*Commercial maritime research center focused on finding new maritime technologies. A collaboration of several Japanese shipyards, ship owners and other manufacturers.*

## 7 Overview of Conventions

Name	Website	Notes
<b>Sea Japan:</b>	<a href="http://www.seajapan.ne.jp/en/">http://www.seajapan.ne.jp/en/</a>	Organized every even year, 2016 was the latest edition.
<b>Bariship:</b>	<a href="http://www.bariship.com/">http://www.bariship.com/</a>	Next edition to be organized in Imabari, May 2017. Organized every odd year.
<b>Gastech Conference &amp; Exhibition:</b>	<a href="http://www.gastechevent.com/">http://www.gastechevent.com/</a>	Next event to be held in Tokyo, april 2017 (held every 18 months, different country each time) Focus on oil&gas industry.
<b>Wind Expo:</b>	<a href="http://www.windexpo.jp/en/">http://www.windexpo.jp/en/</a>	Next even to be held in March 2017 in Tokyo. Yearly event, focus on wind energy.

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