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THE SOLE WORLDWIDE ACTING ASSOCIATION OF TUBE & PIPE ENGINEERS

World Tube & Pipe Market for *OCTG Products*—some influencing factors

Dr. Gunther Voswinckel – Update as per November 2020

This is one of a series of articles that discuss several economic developments in the tube and pipe industry.

The corona pandemic still has a firm grip on most parts of the world. In consequence many countries have limited substantial human rights for the second time this year, rights such as the freedom of movement as well as the freedom of property and the freedom of practicing an occupation. Many countries have decided, for the second time this year, to lock down major types of public, industrial and private activities to protect human lives.

This article will not discuss the sad and disastrous consequences of the pandemic for mankind (as of November 27th, 2020, worldwide about 61 million persons in 185 countries are known to have been infected by Covid-19 and about 1.43 million persons have died from the disease).

Here, we look at the significant impact on the tube and pipe industry. The industry must take substantial strategic countermeasures to avoid severe consequences.

The consumption of energy and most industrial goods has fallen apart, and major supply and service chains are not working any more. Travelling restrictions make customer contacts and site works even more difficult. Web-based virtual meetings can only partially replace the site presence/work.

By far the largest market segment for tubes and pipes is the *OCTG (Oil Country Tubular Goods) market*. With a share of the world tube and pipe market of about 51%, it is largely dependent on the oil and gas prices, which can still be seen as the blood line of industrialisation.

Daily consumption had reached a peak value of about 100 million barrels/day in early 2020. After the corona pandemic started in China, world oil consumption dropped by more than 30%. A tremendous oversupply of oil was the consequence, immediately reflected in an oil price drop of about 60% (from 60 US$/barrel to 25 US$/barrel in only 5 weeks).

OPEC, led by Saudi Arabia, and major non-OPEC oil-producing countries tried to establish international agreements to reduce daily oil production. But due to the significant implications of such measures for some countries, first attempts at an agreement failed. Indeed, subsequent internal conflicts between the oil-producing countries put further pressure on oil price levels.

Finally, on April 20th, the oil-producing countries were able to agree to reduce world daily production by about 10 million barrels/day for the months May and June. However, the reduction failed to produce the desired effect, since even at these reduced levels production was far higher than global demand levels shrunk by restrictions due to the corona pandemic.

Since then, the demand for oil worldwide has risen slightly and some oil-producing countries have reduced oil production still further. The oil price recovered in consequence to about 45 US$/barrel, though this is still low.

Due to the crash in oil prices, world drilling activities have been significantly reduced, negatively impacting the tube and pipe industry. Many in the sector early this year were still partially covered by long-term delivery contracts, but renewal of such contracts will prove to be a challenge for the industry. The tube and pipe price index has weakened since October 2019, falling from 344 down to 322 in September 2020 (-7.5%). Due to the second Corona wave, it must be feared that demand and hence prices may drop even further.

On the other hand, the hope for the timely arrival of a corona vaccine and an improvement of the trade conflict between the USA and China thanks to the new US president elect may stabilize the economic situation in many countries and create an atmosphere that releases pressure on our industry.

In high wage countries, demanding high-tech products are strategic targets, rather than commodity-grade tubes and pipes. Limiting factors are sometimes the availability of steel quality and quantity for strip, plate and billets, as well as the tube plant infrastructure in terms of machines and the applied quality standards.

Strategical measures for our industry are consequently demanding, but important. Lean and agile organizations with flexible, customer-orientated production facilities are needed to prompt the demanding and volatile market requirements. Agile digital solutions in the context of "Industry 4.0" offer further opportunities to stay successful.

The international stock markets are flooded with huge amounts of financial support to avoid bankruptcy or unfriendly takeovers. In addition, some countries are trying to compensate for the consequences of the virus with financial support for mid-size and small entities. The tube and pipe industry has also been hit hard by this global pandemic.

By far the largest market segment for tubes and pipes is the OCTG (Oil Country Tubular Goods) industry with a 51% market share (*Figure 1*).

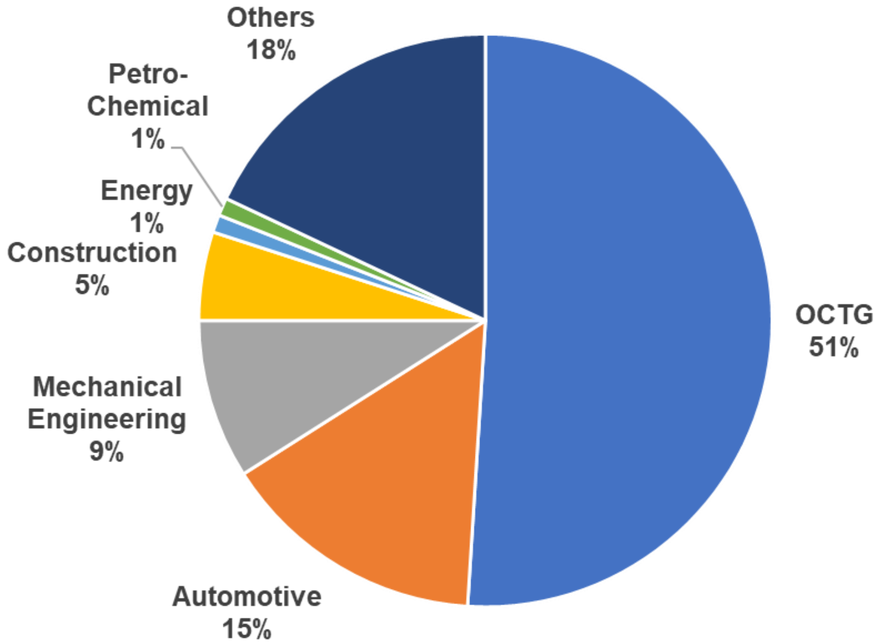

Figure 1: Markets of Steel Tube and Pipes

Source: ITATube Journal/Wirtschaftsvereinigung Stahlrohr

The OCTG market is subdivided into pipes used for oil and gas exploration rigs, such as drill pipes, joints, tubing and casings, and further downstream line pipes to transport oil and gas.

Tube and pipe consumption in this market is of course heavily dependent on the number of rigs, as well as the depth of drilling and the capacity of the rigs. The number of new oil and gas rigs itself is heavily dependent on oil prices (*Figure 2*).

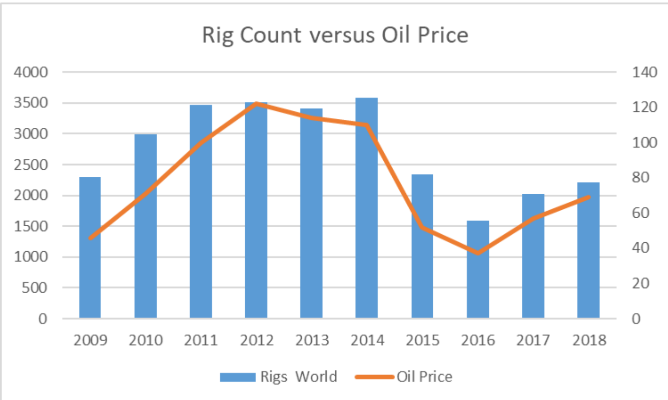

Figure 2: Correlation of Oil and Gas Rigs versus Oil Price
Source: based on Baker Hughes and Nasdaq

The oil price chart of North Sea Brent Oil (*Figure 3*) shows a steep fall to about 20 €/barrel around the end of January 2020, when the first corona infections were reported from Wuhan, China. In the course of 2020, oil prices recovered to a level of about 45 €/barrel due to reduced oil production levels from many oil-producing countries.

Figure 3: Oil Price Brent Development 4 Years up to 27th November 2020
Source: Nasdaq

Nonetheless, any minor recovery in oil consumption has been compromised by the second wave of the virus impacting society again hard.

The hope for the timely introduction of a successful corona vaccine, and the announcement of a victory for newly-elected US president Biden coupled with the hope for ongoing support for the US-based oil and gas industry has helped oil prices recover somewhat; however prices have still not reached the level of 50 US$/barrel.

(The WTI price chart is very similar.)

Considering the cost to produce and pump oil and gas, it is obvious that the oil production industry is still suffering at such low oil price levels. As a consequence, the oil exploration industry stopped its drilling activities. The USA for example, where the fracking boom made it the largest oil- and gas-producing country in the world, has reduced its horizontal drilling activities by about 26% since March 2020. At the same time, storage facilities for OCTG tubes and pipes are filling up, causing order volumes and prices to slide. Since March this year tube and pipe prices have dropped by about 4% (*Figure 4*).

Figure 4: Pipe and Tubes Producer Price Index as per 27th of November 2020
Source: FRED US Bureau of Labor Statistics

Current world production figures as per Q1 2020 do reflect this negative trend. This market is mainly served by tubes and pipes in the diameter range of up to 406 mm. The world steel tube production of tubes and pipes with a diameter smaller/equal 406 mm, has dropped by about 12% (*Figure 5*).

It is now essential that the industry find a way to recover and return to a growth path.

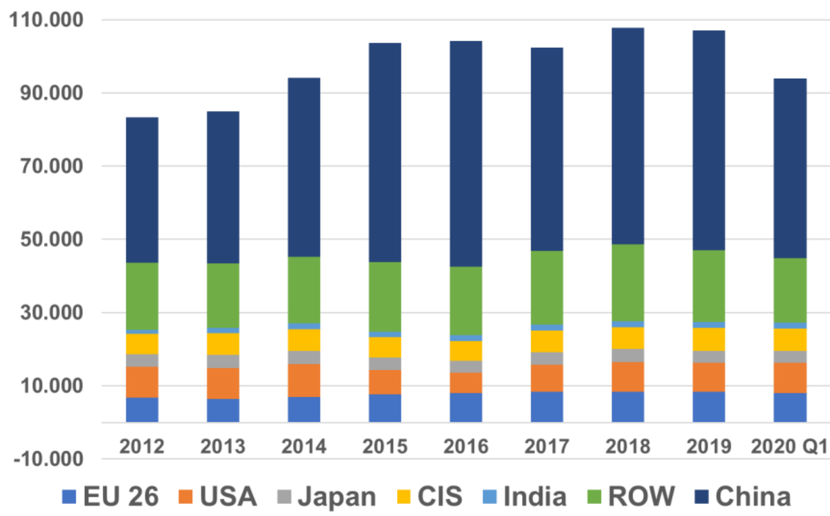

Figure 5: World Steel Pipe Production in Ttons (welded < 406 mm OD)
Source: ITATube Journal/Wirtschaftsvereinigung Stahlrohre e.V.

Looking at the different world regions (*Figure* 6): China, by far the largest producer of such tubes and pipes lost a huge 18% of its production. This massive drop was due, not only to the impact of the corona pandemic, but also in part to the trade conflict between the USA and China. US-based tube and pipe producers on the other hand were able to increase their production by 3%.

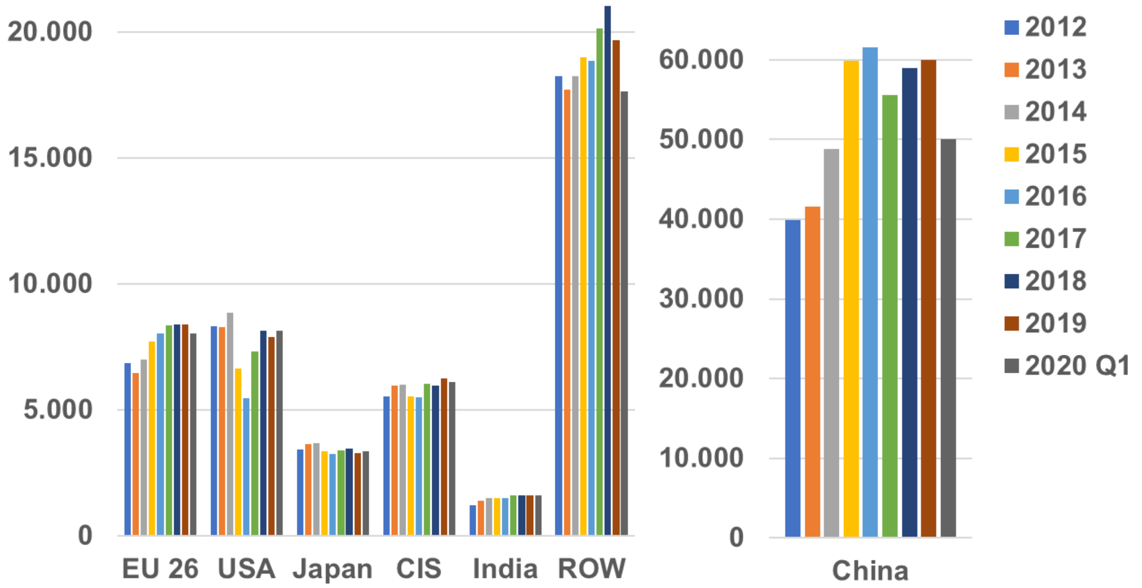

Figure 6: World Steel Pipe Production Regional in Ttons (welded < 406 mm OD)
Source: ITATube Journal/Wirtschaftsvereinigung Stahlrohre e.V.

Europe (-4%) and ROW (rest of the world -10%) also suffered from shrinking markets. Only Japan (+2%) and India (+-0%) maintained their production levels.

The second oil and gas market is represented by oil and gas pipelines. This market is mainly served by pipes in the diameter range larger than 406 mm. The pipeline market is a project-based business with long planning periods and high political determinations. Pipeline projects are planned in e.g. Europe, USA and Asia.

In Europe gas pipelines are mainly built to transport gas from gas and oil fields in Russia and in the North Sea. In the USA the new Keystone XL pipeline is planned to transport oil from Canada to the petrochemical centres in the US. In Asia they're intended to serve the new petrochemical complexes in Malaysia and Indonesia. All these projects are intensively discussed on political and environmental platforms.

Stakeholders' interventions and now the pandemic have meant that it's becoming more and more difficult to predict pipeline project developments in the oil and gas business.

In 2020 the world production volume in Q1 dropped again by about 23% (*Figure7*). It must be feared that the corona effect is probably not yet reflected to its full extent in the 1st quarter production figures for 2020.

Traditionally these large pipe production plants are running at low workloads, of about only 30% to 40% on average.

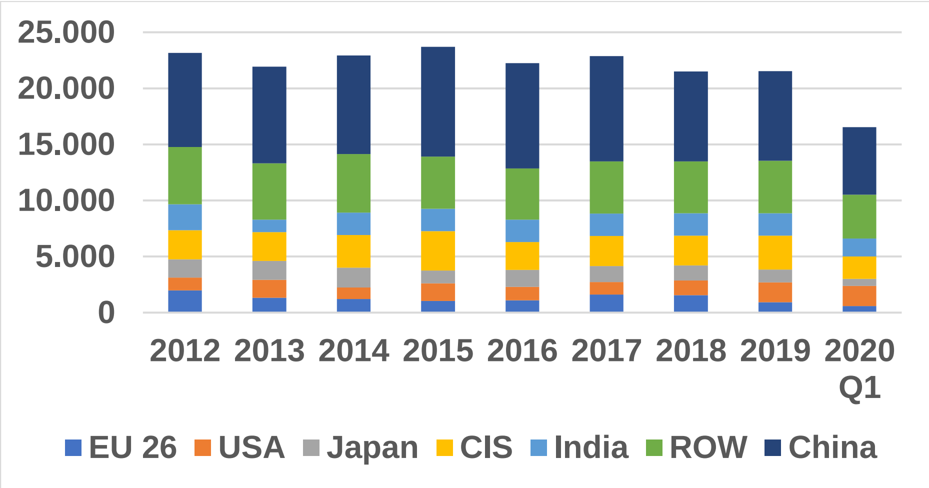

Figure 7: World Steel Pipe Production in Ttons (welded > 406 mm OD)
Source: ITATube Journal/Wirtschaftsvereinigung Stahlrohre e.V.

Looking at the regional production figures, it is clear that with the exception of the USA (+2%) all other large pipe-producing countries experienced major production drops (*Figure 8*).

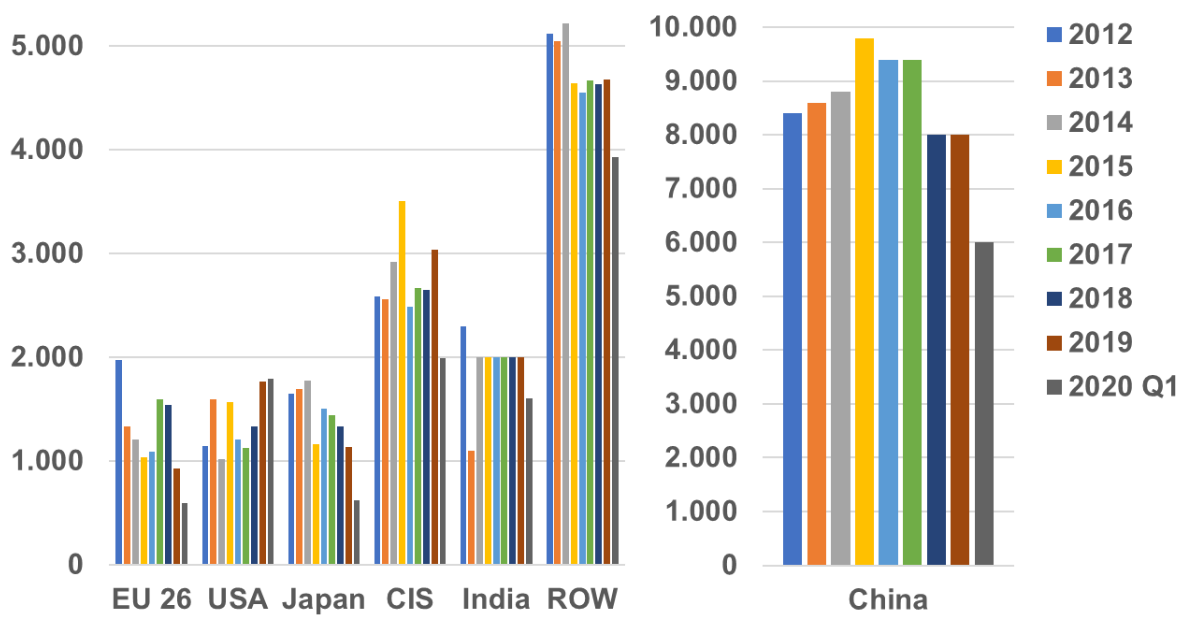

Figure 8: World Steel Pipe Production Regional in Ttons (welded > 406 mm OD)
Source: ITATube Journal/Wirtschaftsvereinigung Stahlrohre e.V.

Japan (-45%), Europe (-36%), CIS (-34%) and China (-25%) are reporting the largest production losses, with many pipeline projects presently on hold or just postponed. Therefore, the pipeline market can be considered difficult with regard to strategical forecasts.

These OCTG steel tube and pipe markets can be subdivided into commodity volume markets and the market sector with high-tech requirements. For the high-tech requirements, the decisive factors are the steel quality and the tube plant infrastructure.

The steel quality for many high-tech steel tube and pipe applications is demanding in terms of chemistry and homogeneity. The availability of such steel qualities with the relevant uniformity and quantities for welded tubes and pipes as steel strip and plates as well as billets for seamless tubes and pipes is limited and can create a significant hurdle to the supply of tubes and pipes into such high-tech markets.

On the other hand, the tube plant infrastructure regarding tube mills, finishing lines as well as applied quality assurance systems are also of significant importance. Growing importance must be given to agile management strategies regarding customer benefit, process and product quality enhancement by applying “Industry 4.0” measures. Some interesting applications of “Industry 4.0” in the tube and pipe industry were presented by various speakers at the trend-setting ITA tube conference in Düsseldorf 2019.

Plant builders as technology suppliers may find interesting business opportunities in this new market segment. Some technology suppliers have already reacted and complemented their product portfolio with digital solutions.

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