Dr. Gunther Voswinckel, VOSCO GmbH

World Tube & Pipe Market: Factors influencing the current situation

Dr. Gunther Voswinckel – Update as per June 2022

Welcome to ITA's and VOSCO´s regular presentation of the main worldwide economic factors influencing the tube and pipe industry.

We are still suffering from the consequences of the Corona pandemic and its effects on the supply of goods, especially from China, which is currently again in a Corona lockdown. This year we are experiencing another striking turning point with the Ukraine war. While our thoughts and actions over the last 70 years have been shaped by the assumption that international trade strengthens peaceful coexistence in the world, this spring we had to painfully realise that this maxim unfortunately has only limited validity. This painful realisation now has a direct and significant impact on the further strategic orientation of our industry. While quality, delivery time and costs were previously the only decisive factors, geo-political and logistical risk considerations are now increasingly taking centre stage. All sources of supply are being subjected to critical scrutiny, and one can only hope and warn that international trade will not suffer too much as a consequence.

Currently, global supply bottlenecks, high energy costs and massively rising inflation pose unexpected challenges that are difficult to calculate. As it is usual the case in such disruptive times, we are seeing crisis winners who are maximising their profits - but also crisis losers who have to fear for their existence. Due to the dynamics of these developments, it is usually very challenging for the crisis losers to react appropriately.

If we look at the pipe market in Europe, about 20% of its imports have so far been supplied by Russia and Ukraine, we are currently experiencing significant increases in demand to compensate for these losses. Russia, under the influence of the supply embargo, will certainly be out of action for a longer period of time. Ukraine, whose logistics have already been massively destroyed by the war, will certainly not be able to deliver again in the short term. Massive bottlenecks in the supply of energy, primary materials and qualified personnel must continue to be feared. These supply shortfalls will lead to further price increases and will have to be compensated by other pipe producers. Pipe prices have risen by more than 50% in this context. The increasing momentum in the realignment of the energy market continues to lead to increases in demand for pipes. Markets such as the USA, India, Europe and the Arab states are characterised by high demand for steel products as well as pipes. As a result, prices for steel pipes in the USA and other regions have risen sharply. Some steel and pipe producers as well as mechanical engineering companies, which equip the steel and pipe industry with high-performance plants, were able to massively increase their economic successes.

Despite high capacity utilisation of the plants worldwide due to the high demand, some pipe manufacturers were unfortunately not able to take advantage of these so-called windfall profits and therefore had to report losses in the first quarter of 2022. Further challenge is imposed, if political measures to prevent climate change, such as the additional CO_2 costs agreed by the European Union, are not introduced in a balanced way. These effects may also lead to possible consequences, being the migration

of high energy consuming industries to lower-cost regions. The confidence to be able to compete on the world market with these additional costs in the future is dwindling among some pipe producers. Vallourec, for example, recently announced the definitive closure of its traditional European plants in Saint-Saulve (F), Düsseldorf (D) and Mülheim (D). It remains to be seen to what extent the loss of these European quality-oriented plants can be compensated for by other producers and whether further price increases for tubes can be expected as a result. In general, there is enough production capacity to serve even the increased demand for tubes and pipes for all market segments.

Raw material prices for the steel as well as the tube and pipe industry would seem to have peaked by the end of 2021. Energy costs, however, remain high and climb even further due to market interventions (e.g. OPEC plus) and the geopolitical conflicts. Nonetheless, if the balance of supply and demand within the tubes and pipes industry can be restored, price volatility can be expected to calm down.

Tube plant infrastructure with respect to tube mills and finishing lines as well as digitalisation and applied quality assurance systems also plays a significant role. Growing importance can be attributed to agile management strategies regarding customer benefit, process and product quality enhancement as well as purchasing processes by applying "Industry 4.0" measures.

With an eye to the return to something like normal, it should be noted that plant builders and technology suppliers alike increasingly find interesting business opportunities in this new market segment. Some technology suppliers have already reacted and enhanced their product portfolio with the addition of digital solutions.

The International Tube Association organized several well attended webinars in 2020, 2021 and 2022 to keep the exchange within our industry ongoing. Some interesting applications of "Industry 4.0" in the tube and pipe industry were presented by various companies at the ITA netForum which was organized to substitute the cancelled TUBE 2020 in Düsseldorf. August 2021 new technologies for the application of pipelines for hydrogen and in May 2022

"Engineered Tubes for the Automotive Industry" were successfully presented at the webinars organized by the ITA Indian chapter. The overwhelmingly positive response to these events is a sign of impressive optimism in our tube industry.

The increasing demand for green technologies creates further growth potential. The ITA together with Messe Düsseldorf have taken these developments towards environmentally friendly and resource-saving green technology into account by organising so-called "ecoMetal Trails" at the Tube 22 trade fair. Exhibitors can present their innovative green technologies to an interested audience in special guided tours.

Global supply shortages, high energy costs and the continuing rise in inflation are major challenges for our industry. The industrial world is currently focused on compensating for the certainly lasting supply shortages caused by the sanctions imposed on Russia due to the Russia-Ukraine war and the destruction of Ukraine's supply structures.

In addition, the renewed lockdowns imposed by Corona in parts of China, especially the region around Shanghai, have led to massive supply chain failures. Figure 1 clearly shows the massive congestion of transport ships off the coast of China.

Globally, goods worth about US$ 683 billion are currently stuck on unmoving container and transport ships, equivalent to about 0.72% of global GDP in 2021. As you can see in Figure 1, the congestion is improving. Anyhow experts fear that even after

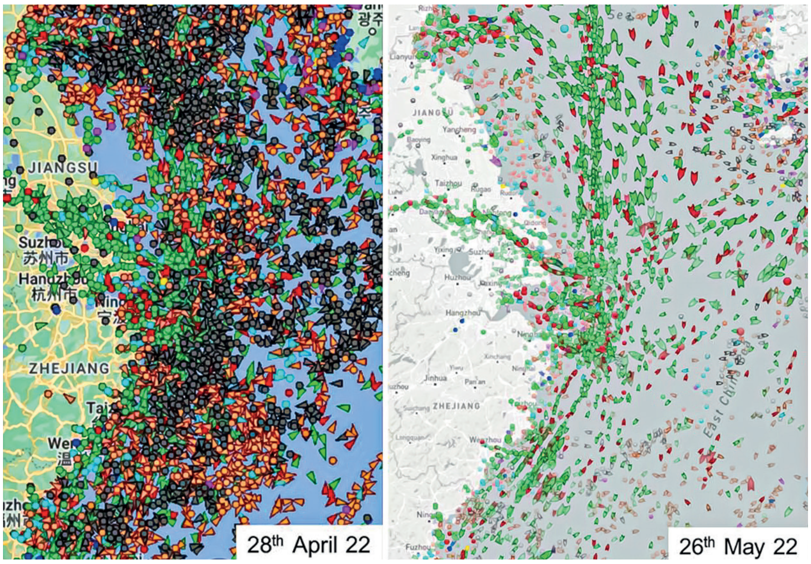

Figure 1: congestion of transport ships off the coast of China

Source: marinetraffic.com

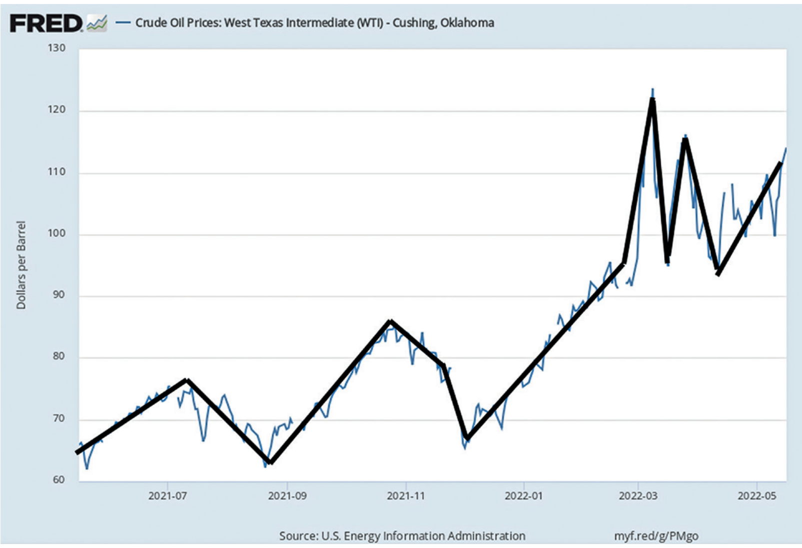

Figure 2: Oil price WTI development 1 year up to 24th of May 2022 (US$/Bbl)

Source: US Energy Information Administration

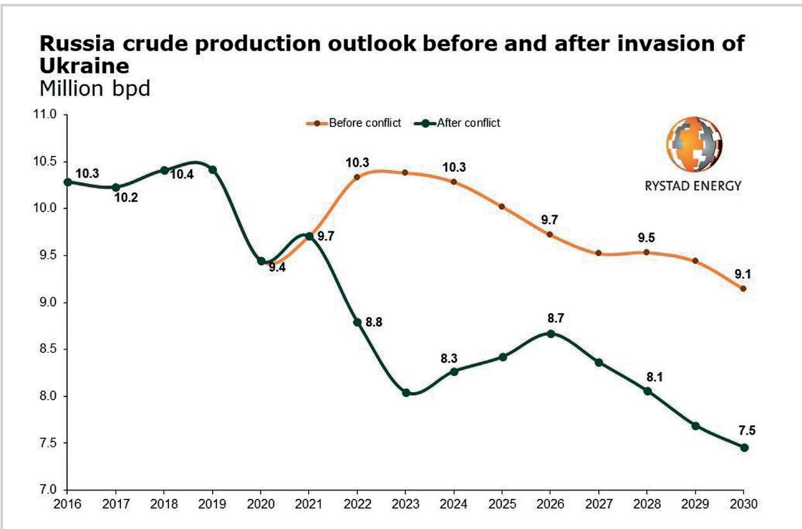

Figure 3: Russia crude Oil production before and after Invasion of Ukraine

Source: Rystad Energy research and analysis

the Corona-related lockdowns in China are lifted, it will take months for these supply bottlenecks to return to normal. In the wake of these logistics bottlenecks, the cost of a standard 40-foot container on the major east-west routes has risen from less than US$2,000 to more than US$10,000 since the beginning of 2020. Chinese pipe producers are currently particularly affected by this, as they can hardly transport their goods to their international destination markets.

As far as possible, the industry is trying to compensate for these bottlenecks with alternative sources of supply. However, it has become apparent that in the past decade's dependencies have arisen here, not only in energy supply but also in raw materials, which can hardly be alleviated in the short term. This bottleneck is currently leading to a boom in demand on the local markets, which in turn is causing prices to rise. In this context, the current trend towards decoupling, i.e. becoming independent of singular sources of supply or supplier countries, poses great challenges for our industry. Anyway, it is to be hoped that post the current conflicts on the eastern borders of Europe, trade relations with neighbouring European countries will return to normal while avoiding unilateral dependencies.

Energy prices represent another challenge (Figure 2). Two major phenomena have caused prices to rise massively.

Firstly, industrial production, which has picked up after Corona, has led to a sharp increase in energy consumption since 2021, so that supply has hardly been able to meet demand. Secondly, possible geopolitical sanctions creating a massive contraction of Russian production have caused speculative price increases (Figure 3). It is anticipated that the Russian Oil production may be reduced by up to 20%.

The corona lockdown in Shanghai at the end of March briefly eased the situation on the price front, as demand for energy fell noticeably as a result (Figure 4). According to Platts estimates, China's April demand plummeted to 13.35 million b/d, down

11.5% year-on-year, though recovering transportation demand may push May figures back above 14 million b/d.

At the peak of lockdown mandates, gasoline and diesel demand in coastal regions dropped by as much as 40%, with a grand total of 45 cities with some form of movement restrictions.

Now, however, prices rose again. The oil and gas producing countries could certainly have increased the supply volumes so that the energy prices would have fallen to a normal level. The refusal to increase supply sufficiently has been reflected in the balance sheets of energy producers. Aramco, the world's largest producer of fossil fuels, has become the world's most valuable company this first quarter 2022. Currently, there is no evidence that oil and gas producers are increasing supply to capture market prices. The USA anyhow significantly increases the number of rigs from 531 in May 2021 to 728 in May 2022 (Figure 5).

Of these 728 rigs, 576 are dedicated for the extraction of oil and 150 for gas. Canada at the same time increased their number of rigs by 30 to 88. Efforts to reduce dependence on fossil fuels can hardly be successful in the short term and can only contribute to decoupling in the medium term. For our pipe industry, however, this means that high energy prices must be expected in the near future as well. Some analysts are anticipating another surge towards the $130-140 per barrel range this summer.

On the other hand, investments to secure the energy supply will keep the demand for tube products high.

Energy prices in particular, as well as existing supply bottlenecks, are cost drivers and are fuelling a worldwide inflation that is threatening to gallop. So far, the central banks have not succeeded in containing inflation (Figure 6).

In America, we are currently experiencing inflation of 8.3% with a decline in economic output growth of 1.4% in the first quarter of 2022. The Fed now seems determined

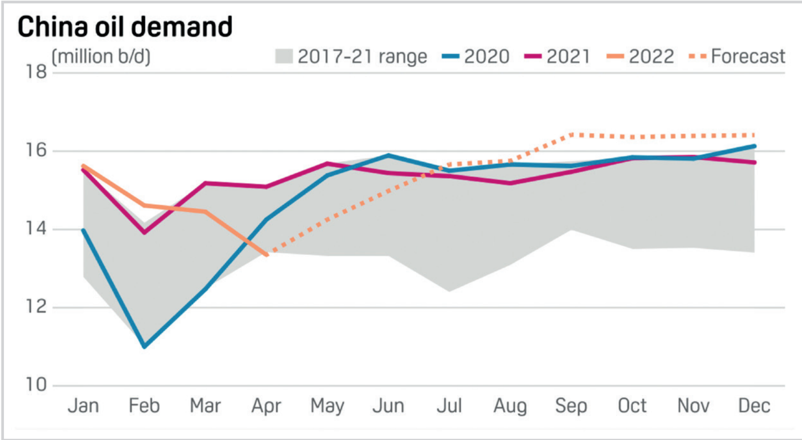

Figure 4: China Oil Demand 2017- 2022 (US$/Bbl)
Source: Oilprice.com, PLATTS

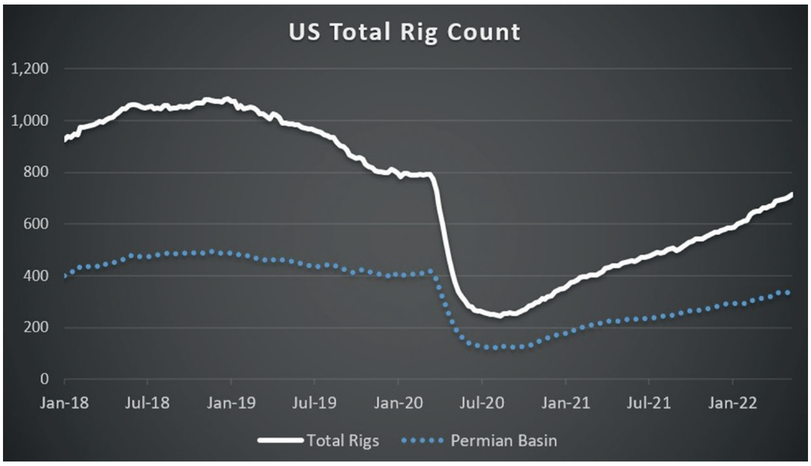

Figure 5: US Total Rig Count 4 years up to 25th of May 2022
Source: OilPrice.com

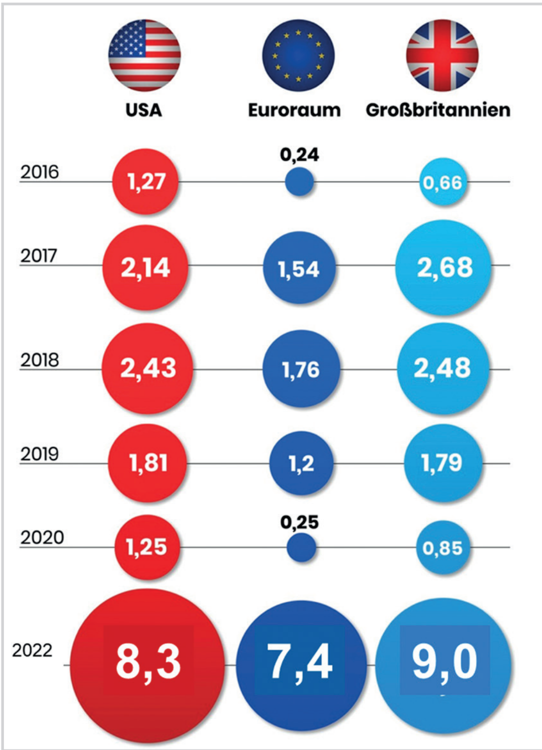

Figure 6: Annual Inflation 2016 to 2022
Source: US Bureau of Labour and Statistics, Eurostat, Office for National Statistics, The Pioneer

to counteract this massively by increasing the key interest rate; it has already implemented two interest rate hikes. Apart from possible further negative consequences for the economy and the labour market, it will certainly take a while before measures are taken to curb inflation. In recent days, the US administration has even tried to modify the European sanction plans against Russia's oil and gas supplies so that no further supply shortages and price-driving supply restrictions of oil and gas will result. The US government is also working on the difficult task easing sanctions against Venezuela and Iran in order to increase the supply of oil.

In Europe, inflation has already risen to 7.4%. However, inflation rates vary widely and clearly reflect the dependence on fossil energy with world market prices as well as on alternative energy sources. Countries with a higher share of non-fossil energy sources such as Norway with 5.4% due to a high share of wind and water energy and France 4.8% due to a high share of nuclear energy are much less affected by inflation than countries with a high share of fossil energy, such as Estonia with 18.8% or the Czech Republic with 14.2%. For reference, the Russian inflation rate reached already 18,8%. Geopolitical dependencies as well as their energy supply shortfall risks have an additional price-driving effect. Many economies are currently examining the extent to which the energy self-sufficiency share can be expanded more quickly. In addition to the more conventional alternative energy generation with hydropower, wind power or solar energy, energy sources such as shale gas, nuclear fuels and hydrogen are increasingly in focus. The European Central Bank is much more reluctant than the US Fed to raise interest rates to curb inflation. The high indebtedness of some European countries and the high financial burden that interest rate hikes would mean for these countries, certainly explains this restraint. In the long run, however, Europe will not be able to continue to ignore interest rate hikes. Hints from the European Central Bank lead us to expect the first interest rate hikes this summer. It is to be expected that other central banks besides the Fed will also feel compelled to make high interest rate hikes, which could then have a negative impact on the economy and thus lead to an increase in unemployment. Stagflation is the economical consequence due to the present situation of high inflation in combination with small or no economic output growth.

If we look at the European pipe market as an example, so far about 20% of pipe imports have been served by Russia and the Ukraine. In the case of seamless pipes, the import share from Russia and Ukraine was even as high as 40%. These volumes need to be supplied by other tube and pipe producers. Russian shipments in 2022 will decrease by 34% on-year to 1.06 million tonnes, the RBC newspaper reports, citing a presentation from fund director Alexander Semenchishin. Domestic consumption in Russia is seen decreasing by 2% on-year in 2022 to 9.12mt. As a result, pipe production will fall by 5.5% to 10.04mt. Many regions of the world such as Europe and North America need to compensate their pipe and tube imports from Russia and Ukraine.

As a result of the increased demand and the lower supply of pipes, pipe prices have risen by more than 50% compared to the previous year 2021 (Figure 7) and possibly may climb even further this year.

Figure 8 shows some current high pipe prices in the USA and the import prices for pipes in Europe. The Chinese welded pipe production decreased in April 2022 by about 16,5%. In this context it is remarkable, that Chinese tube producers try to attract with low prices to compensate their actual burdens of delivery bottlenecks, high transport costs to and import duties in the relevant regions.

Most pipe and steel producers were able to report strongly improved figures for Q1 2022 in the wake of the price increases. However, for European pipe producers, the additional CO2 costs agreed to be imposed

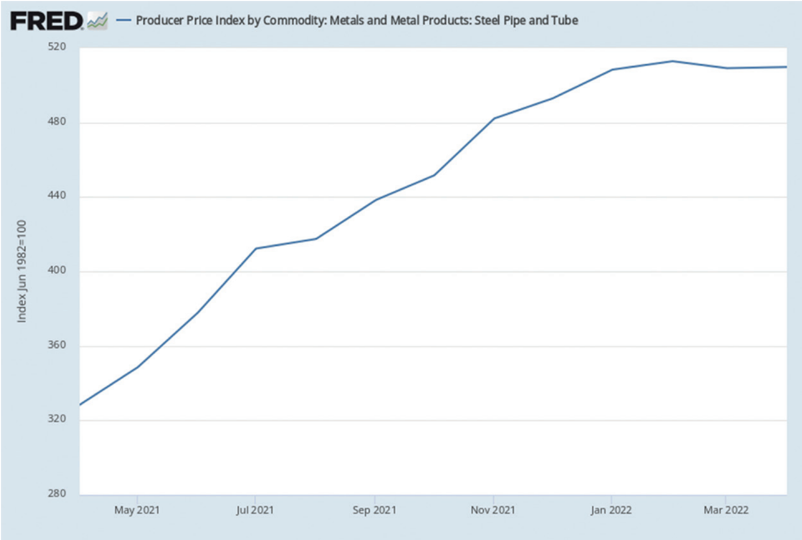

Figure 7: Producer Pipe Price Index as of 24. May 2022
Source: US Energy Information Administration

Tubes Standard	Price Range
ASTM A500 USA	2.160 US$/ton – 2.390 US$/ton
OCTG P110 USA	3.540 US$/ton – 3.760 US$/ton
ASTM A53 USA	1.650 US$/ton – 1.985 US$/ton
Europe Imports	1.080 €/ton – 2.690 €/ton
API 5l Gr. B China FOB	830 US$/ton – 990 US$/ton

Figure 8: Price range as of May 2022 for some selected tubular products
Source: various

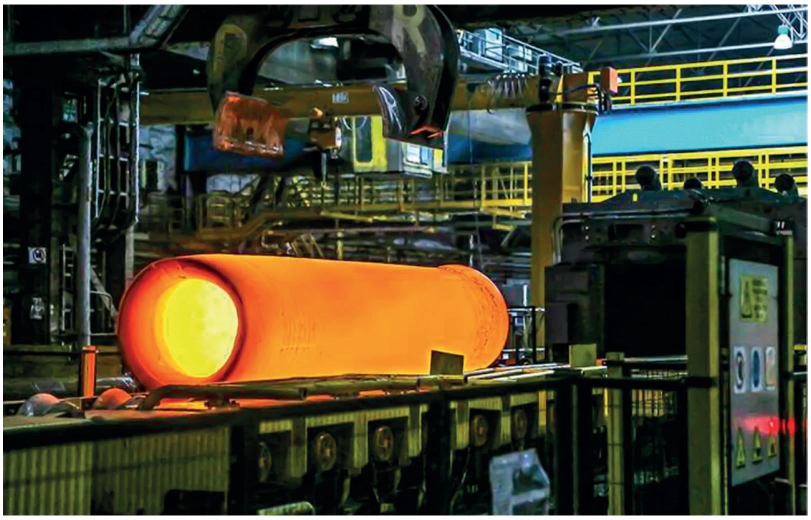

Figure 9: Vallourec Tube Mill in Saint-Saulve
Source: Vallourec

by the European Community represent another major challenge. Confidence in being able to compete on the world market in the future with these additional costs is dwindling among some tube producers. Vallourec, one of the largest producers of quality tubes, reported losses in the first quarter of 2022 and at the same time announced the closure of its traditional plants Saint-Saulve in France (figure 9) as well as Düsseldorf and Muelheim in Germany.

This will not only mean the abandonment of prominent milestones in the European pipe manufacturing tradition, but it also remains to be seen to what extent the quality products from these plants can be taken over by other producers without any loss of quality. Furthermore, it remains to be seen whether these closures will cause pipe prices to rise further.

In general, there is enough production capacity to serve even the increased demand for tubes and pipes for all market segments. Raw material prices for the steel as well as the tube and pipe industry would seem to have peaked by the end of 2021.

Energy costs, however, remain high and climb even further since market interventions (e.g. OPEC plus) and warlike actions call free world trade into question. Further challenge may be imposed, if political measures to prevent climate change are not introduced in a balanced way, with possible consequences being the migration of high energy consuming industries to lower-cost regions. Nonetheless, if the balance of supply and demand within the tubes and pipes industry can be restored, price volatility can be expected to calm down. Tube plant infrastructure with respect to tube mills and finishing lines as well as applied quality assurance systems also plays a significant role. Growing importance can be attributed to agile management strategies regarding customer benefit, process and product quality enhancement as well as purchasing processes by applying “Industry 4.0” measures.

With an eye to the return to something like normal, it should be noted that plant builders and technology suppliers alike may find interesting business opportunities in this new market segment. Some technology suppliers have already reacted and enhanced their product portfolio with the addition of digital solutions.

It is good to realize, that besides the virtual exchange in our industry, such as the webinars organized by the International Tube Association (ITA) now again hybrid or even personal events for industrial exchange take place.

It is great to meet tube producers as well as suppliers to the tube and pipe industry at our world largest tube and pipe show “Tube Düsseldorf 2022”.

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Scharnhorststraße 45
41063 Mönchengladbach/
Germany
+49 2161309255
contact@vosco.net
www.vosco.net