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PortNews







O8 Jan Lagasse – So much to look forward to

11 North Sea Port changes management

11 Ørsted – Borssele 1 & 2 nears completion

12 Kronos – The extra mile

16 VoltH2 plans green hydrogen facility at North Sea Port

18 Emulco – Innovative emulsifying

22 Sagro Decom – An exceptional visitor

24 TPT Services – No longer in the pioneering phase

28 Rain Carbon – Sustainable avant la lettre

IN THIS ISSUE







39 Stukwerkers – New mobile harbour cranes for Stukwerkers

40 Atlas Professionals – Present on a local level

44 **Mammoet** – The Focus; a heavy lift solution

48 **Heylen Warehouses** – Ghent Logistic Campus off to flying start

51 Degassing – New tests for degassing barges at North Sea Port successful

52 Zeeland Airport – Preparing for take-off

54 Oceanwide – Nuyina arrives at Vlissingen

55 North Sea Port proud event sponsor





REGULARS

01 Welcome – Henk de Haas, Chairman of Promotion Council North Sea Port

02 Events

56 Port maps

59 New Participants

60 Participants

64 Publishers page



ON THE COVER

Collaboration at North Sea Port: Multraship's floating sheerlegs Cormorant assisting DOC Logistics on a mobilisation project.

Photo courtesy of Limit Fotografie.

North Sea Port and Promotion Council North Sea Port will be in attendance at various events and trade shows throughout the year. Below you'll find a snapshot of the upcoming events that might be of interest to you.



Cool Logistics Global Rotterdam





Offshore Energy Amsterdam



29-30 0CTOBER 2020 European Commodities Exchange | Berlin



4-5 NOVEMBER 2020

Top Transport Europe Marseille





Fruit Logistica Berlin



2-4 MARCH 2021

Intermodal South America Sao Paulo



10-12 MARCH 2021

Antwerp XL Antwerp



StocExpo Antwerp



TransRussia Moscow









Wind Europe Electric City 2021 Copenhagen





Seafood Expo Global Barcelona



4-7 MAY 2021 **Transport Logistic** Munich





BreakBulk Europe Bremen





TOC Europe Rotterdam





Intermodal Europe Amsterdam



Let's put some muscle into it

Welcome

As we are unable to look into the future, making plans, even for shorter terms, will always be affected by uncertainty. For most plans, history-based trends are used in combination with expectations of what is going to happen and of the few things we do know for sure. With our mission in mind, we made our plans for 2020.

Early this year we announced our name change and we enabled companies at the Ghent side of our port to become a council participant. We also planned various participant meetings and international exhibitions together with North Sea Port.

It soon became clear during Q2 of this year that all our plans for 2020 could be thrown out of the window. COVID-19 and the rules and regulations to try to manage this deadly virus put a spanner in the works, affecting both social and economic life. This of course also affected our North Sea Port community. As the port has various industries, and services a broad range of commodities, the situation differs per segment, as demonstrated by the port authority's six-monthly figures, which is also reflected at company level. Looking at our council, we too had to deal with the virus as we had to postpone many events and skipped the previously planned participations in exhibitions. All this gave our board a powerless feeling, as we had a lot of plans for further growth that we could no longer execute. However, this does not mean that we sat still this year. We tried to stay in touch with our participants as much as possible via our newsletter, website, and by keeping in touch by phone or Skype. And as blood runs thicker than water, we started to make plans for the post-corona period.

We are all aware of the current market situation. As a first response to this crisis, many have put the brakes on, which has resulted in a worldwide economic relapse. Nevertheless, when reading the news, I do notice several slightly positive developments in various sectors, and I cherish this good news and consider it the first signs of



a turning point. Only when we all put some muscle into it, instead of waiting for the storm to pass, will the chance of a swift recovery increase. Apart from this, I hope that with all measures taken, we will be able to control the so-called second wave of the COVID-19 virus and that things will ultimately normalise, as I am looking forward to meeting you all again at one of our meetings or international exhibitions. Whilst obviously keeping the appropriate distance.

With kind regards,

Henk de Haas,

Chairman of Promotion Council North Sea Port



UNDER THE NAME 5G-BLUEPRINT, AN INTERNATIONAL RESEARCH PROJECT IS INVESTIGATING HOW TELE-OPERATION CAN BE USED TO MAKE TRANSPORT AND LOGISTICS MORE FEFICIENT

Tele-operated logistics and transport

Under the name 5G-Blueprint, an international research project is investigating how tele-operation can be used to make transport and logistics more efficient – including across borders. North Sea Port is one of the partners.

A public-private partnership made up of members from the Netherlands, Flanders, Switzerland, and the Czech Republic has been granted a subsidy of EUR 10 million by the European Union for this purpose. The Dutch Ministry of Infrastructure and Water Management, together with (among others) the Flemish Department for Mobility and Public Works, the port authorities North Sea Port and Port of Antwerp, the business community, and the academic sector, has set up a consortium with 28 members. Together they are investigating how transport and logistics can be made more efficient with the aid of remote control (tele-operation) technology – also across borders. The 5G-Blueprint project is an extension of the collaboration between the Netherlands and Flanders. A great deal of knowledge and experience is already being exchanged within

existing programmes around intelligent traffic lights, 'Talking Traffic' and 'Mobilidata'. The management and development of standards are also jointly being taken forwards. The project commenced on 1 September 2020 and will run for three years.

Tele-operation of vehicles and vessels

The parties involved are investigating how exchanging real-time data to and from vehicles, between terminals and vehicles, and between vehicles and their head offices can contribute to greater efficiency in the supply chain and help mitigate driver shortages. The aim is to be able to remotely steer and support vehicles and vessels. This is expected to not only improve the accessibility of the important North Sea Port (Vlissingen, Terneuzen, and Ghent) to the Antwerp logistics corridor, but also to increase employment and strengthen the competitive position of that area. New 5G telecommunications technology will be one of the tools used. The 5G-Blueprint project will investigate digital technologies and telecommunications possibilities. The project will also look at safety, costs and benefits, division of responsibilities, collaboration, and standardisation. The insights and lessons from this three-year project will be applied directly in this region wherever possible. But they will also be important as a new standard and working method – as a 'Blueprint' – for other areas and sectors.

Horizon 2020

The 5G-Blueprint project has been awarded the EUR 10 million grant from the EU 'Horizon 2020 Research and Innovation' programme under 'Grant Agreement' number 952189. A total of eleven new Horizon 2020 projects under the European 5G Public-Private Partnership (5G-PPP), recently kicked off in September 2020. The objective of the projects will be to seize opportunities in 5G hardware innovation and to validate 5G ecosystems for connected and automated mobility (CAM) along three new European cross-border corridors. The whole 5G-PPP trial project portfolio is worth more than EUR 400 million of EU funding and will leverage far more than EUR 1 billion of private investment in 5G vertical trials, reinforcing Europe's leading position in this field.

Necessary know-how

The three new 5G cross-border projects will design, test, and validate use cases in the field of mobility and transport. They will broaden the validation of connected and automated mobility features to roads, train, ports, and maritime routes. Each project will provide a 5G network infrastructure that offers both multi-service and multi-application features to varied means of transport (such as cars, trucks, trains, pods, barges, and boats), as well as improved connectivity to public users. Each of them will operate under different geographic conditions and associated weather constraints. The three projects will be complementary to the three 5G corridor trial projects launched in November 2018. Their findings will provide the necessary know-how in view of the envisaged large-scale deployment of 5G corridors in Europe, which is expected to be supported

by the upcoming Connecting Europe Facility (CEF) Digital Programme over the 2021-2027 period.

Connected and automated mobility

Next to 5G-Blueprint, the other two cross-border projects are 5G-Med and 5G-Routes, 5G-Med will test use CAM, including road and rail, based on the same 5G network infrastructure along the Figueras-Perpignan cross-border corridor. 5G-Med in particular will demonstrate the multi-application and multistakeholder features of the 5G infrastructure for the joint delivery of use cases in the field of road and rail, as well as connectivity to road users and train passengers, implementing the latest 5G standards over 3.5GHz and 5.9 as well as unlicensed mmwave, network slicing, and service orchestration. 5G-Routes will test and validate over 150km of the Via Baltica corridor, with a ferry extension to Helsinki, including ports and maritime routes, different CAM use cases enabled by 5G high-performance capabilities, covering several scenarios in automated cooperative, awareness, and sensing driving. 5G-Routes will also focus on uninterrupted infotainment passenger services on the go and on multimodal services in the context of complete connectivity-enabled ecosystems around passengers and cargo over three different modes of transport vehicles, rail, and maritime.

Collaboration

The 5G-Blueprint participating parties include the Ministry of Infrastructure and Water Management (including the Directorate-General for Public Works and Water Management), Martel Innovate, HZ University of Applied Sciences, Sentors,



THERE WILL ALSO ALWAYS BE A NEED FOR PEOPLE TO KEEP AN EYE ON THINGS AND CHECK THE TRANSPORT MOVEMENTS WHEN REQUIRED.

Economische Impuls Zeeland, Locatienet, Swarco Nederland, KPN, V-Tron, HAN University of Applied Sciences, Sweco Nederland, Telenet, IMEC, Be-Mobile, Flemish Department for Mobility and Public Works (including Agency for Roads and Traffic), Room40, Port of Antwerp, Nxtport, Eurofiber, Kloosterboer, More Work Less Carbon, RoboAuto, Seafar, Verbrugge International, Toyota Motor Europe, Transport Joosen, North Sea Port, and Terberg Benschop.

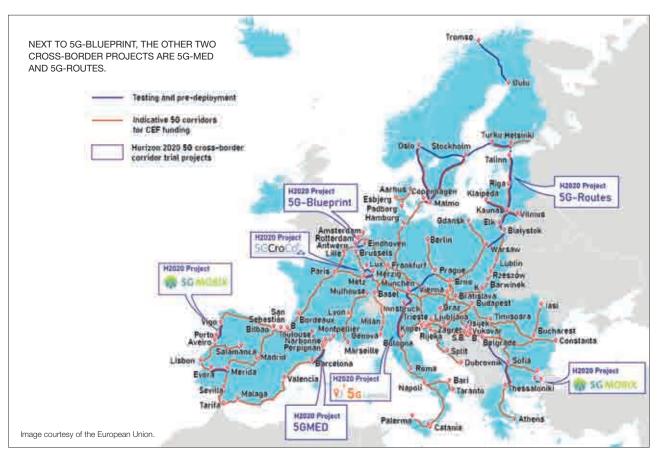
HZ University of Applied Sciences

Thierry Verduijn is Lector Supply Chain Innovation at HZ University of Applied Sciences and is representing HZ University of Applied Sciences in the 5G-Blueprint project. "Together with other research institutes, we are responsible for a number of issues in the 5G-Blueprint project," Mr Verduijn explains. "We are involved in creating defining business models for 5G logistics use cases. Before implementing a 5G network, it is good to know what kind of logistic applications for 5G are possible, useful in practice, and economically viable. We also want to know if the total demand for these services generates sufficient revenue to providers of 5G to invest in well-functioning cross-border project networks. One can imagine that alongside the corridors in our project, 5G is not present at a large scale as the number of potential users is relatively low. Therefore, it is important to look at the existing availability, at plans of 5G providers, and at the demand for 5G from the industry." Mr Verduijn continues, "In order to make a transition to the use case business models, we will also support pilot projects in the logistic industry. As an educational institute, we not only help in providing knowledge through research. We also help the project by offering courses and student projects aimed at tele-operated mobility. For this, we are going to offer a course dedicated to autonomous transport that will be available not only for

our students, but for students at other universities of applied sciences, too. Apart from this, we are going to offer the minor through an online MOOC platform. The knowledge gained through the 5G-Blueprint project can hence be presented to everyone interested in learning from it." For Mr Verduijn, it is evident that the 5G-Blueprint project will offer a lot of opportunities for the entire region, not in the least for HZ. "With this project, we are among the trail blazers in 5G supply chain applications. I am convinced that being part of this project will be profitable for all parties involved. It will give our institute an international podium, which is also the case for the other parties involved such as the industry and North Sea Port."

The industry: Kloosterboer and Verbrugge

Logistic service providers Kloosterboer and Verbrugge are both involved in the 5G-Blueprint project, which was stimulated by their participation in Zeeland Connect. "Zeeland Connect is a platform in which government, industry, and education participate, and that focusses on the innovation of logistics." explains Martijn Teuben, Chief Information Officer and member of Zeeland Connect's advisory team. "Autonomous Transport and 5G are two of the main subjects that the network is working on." "With this project, we can learn a lot from the use of 5G, also for autonomous transport," adds Raymon Oosterveen, Project Engineer at Kloosterboer. The project has many interesting angles for the industry. "It is good to know," states Mr Oosterveen, "that the financial EU contribution requires for the project not to be limited just to research. The European Commission demands tangible results, which means that this project should somehow lead to solutions that can actually be implemented." "Autonomous and remote-controlled transport have various challenges, and they are not only technical," Mr Teuben continues. "Legal aspects are also highly relevant







In order to make a transition to the use case business models, we will also support pilot projects in the logistic industry.



THE DUTCH MINISTRY OF INFRASTRUCTURE AND WATER MANAGEMENT, TOGETHER WITH (AMONG OTHERS) THE FLEMISH DEPARTMENT FOR MOBILITY AND PUBLIC WORKS. THE PORT AUTHORITIES NORTH SEA PORT AND PORT OF ANTWERP, THE BUSINESS COMMUNITY, AND THE ACADEMIC SECTOR, HAS SET UP A CONSORTIUM WITH 28 MEMBERS.

and we hope that with the project we can learn more about these legal aspects and how to deal with them. When looking at the technical side, it is not just the download speed that needs investigating. For remote-controlled solutions, responsiveness, which means the speed at which a self-driving truck can react to changing circumstances, is much more relevant." "Of course, this project will only be conducted on a small scale, but it will give the participants the opportunity to learn from it and it should ultimately help us to upscale to a national, and even international level," Mr Oosterveen comments. According to both men, 5G has plenty more to offer the logistic supply chain. "Autonomous driving and sailing are the starting points, this will however only be the beginning," Mr Oosterveen says. "5G will, for example, also enable us to make the use of quays and cranes more efficient, flexible, and smarter. At Verbrugge, a student trainee from HZ University of Applied Sciences is working on autonomous and 5G and its opportunities for our business. "North Sea Port, the port, and the companies in the port area will all benefit from the project, so much is true," voices Mr Oosterveen. "Together with Verbrugge, Kloosterboer is now one of the frontrunners and we have already learned a lot from the project. In the end not only will our Zeeland terminal profit, but all other terminals we have in Europe will, too," he concludes.

North Sea Port

"In order to be able to further digitalise logistics and transport, high-speed data connections are very important," states Daan Schalck, CEO of North Sea Port. He continues, "For this 5G is an absolute necessity. We are therefore glad to have been granted EUR 10 million from the EU to investigate the possibilities of 5G on the corridors Antwerp-Ghent and Tereuzen-Vlissingen. Of course, digitalisation will have its impact on employment, as self-operating vehicles and vessels will reduce the number of drivers and skippers. On the other hand, it will lead to new jobs on the technical side. There will also always be a need for people to keep an eye on things and check the transport movements when required. With this project, we hope to prove that 5G is worth implementing in the near future for our purposes."



So much to look forward to

Jan Lagasse sets a new course

On 1 September, Jan Lagasse stepped down as CEO of North Sea Port, leaving the reigns of the port authority in the hands of his current co-CEO, Daan Schalck. PortNews got in touch with the departing director to look back on his experiences at the head of North Sea Port and Zeeland Seaports, to find out what insights he has gained, and discuss the challenges he will be taking on next.

Q: You picked up your duties as CEO of Zeeland Seaports mid-2014. Surely, the merger between Zeeland Seaports and Port of Ghent must stand out as one of the major feats that have been achieved in those six years. How do you look back on the merger process now, one and a half years after its implementation?

A: Focussing merely on the success of the merger when looking back would do injustice to many other achievements and many of my colleagues. During the last six years, the financial results of the port company have improved substantially. A record amount of land has been allocated, facilitating the arrival of new businesses as well as the expansion of existing companies. Transshipment has increased – pre-COVID-19 – from 33 to 39 million tonnes annually, the Maintenance Value Park has been constructed, and WarmCo has recovered. We have taken major steps regarding sustainability by drawing up the progressive environmental agreement Ambition 2030, but also managed to boost old dossiers such as the successful removal of the Wielingen sill, the realisation of the Rail Ghent-Terneuzen project, and coming to an agreement with the Dutch government on the Thermphos site remediation that did not bring the port company to bankruptcy. The merger of Zeeland Seaports and Port of Ghent forming North Sea Port was the cherry on top. In conclusion, the merger is only one chapter in the whole story - albeit a crucial one.

In addition, the merger is certainly something to take pride in. Although I have been involved in far more complex and important deals during my career than this one, the North Sea Port merger is exceptional due to the fact that both companies have public authorities – of different countries, at that – as shareholders and there have been very few precedents. These distinctive circumstances created unique dynamics, and make mergers like this one rare occurrences.

Q: What valuable lessons have these past six years at Zeeland Seaports, and later at North Sea Port, taught you?

A: If it wasn't true, it wouldn't be a cliché: you learn something new every day. Flemish writer Willem Elsschot,

who actually worked in the Port of Rotterdam for several years, stated that "between dream and deed lie laws and practical obstacles". A valuable lesson to me was that his words do not mean that with sufficient goodwill and stamina, those laws and obstacles cannot be overcome. The fact that Elsschot used those words in his wistful poem 'The Marriage' – also a merger of sorts, at the end of the day – we can surely attribute to coincedence. In addition, these years have undoubtedly taught me about Zeeland's culture. Often a strength, sometimes a weakness. A due sense of pride, but perhaps a bit too introspective, which may risk opportunities being squandered.

More particularly, I have learned the specific problems of the border region. Issues that have clearly manifested themselves once again during the COVID-19 crisis, despite the good intentions on both sides of the border.

Q: The end date of your mandate term at North Sea Port had been set well in advance. In the meantime, the COVID-19 virus broke out, with all its attendant consequences. How does it feel to say goodbye in such turbulent times?

A: In previous roles, which among others involved a factory in China, I was already faced with the SARS virus. The circumstances of such virus outbreaks thus were not entirely unknown to me. So far, the COVID-19 virus has taken the lives of approximately 16,000 people in the Netherlands and Belgium. Thousands of others that have recovered suffer sustained permanent damage. Hence, it is our moral duty to put all the restrictions and so-called sacrifices that are required from us into perspective, while we and our loved ones remain safe and healthy. The COVID-19 crisis has also helped me to reappreciate things that we had come to take for granted.

Q: The current coronavirus outbreak also has farstretching consequences for North Sea Port. Can you elaborate on how the port authority has experienced these trying months?

A: We have acted rapidly, even before the governments ordered lockdowns. The safety and health of North Sea

INSIGHTS



MR LAGASSE WILL REMAIN AFFILIATED WITH NORTH SEA PORT AS A STRATEGICAL ADVISOR.



With sufficient goodwill and stamina, the laws and practical obstacles that lie between dream and deed can be overcome.

> Port's employees, as well as keeping the infrastructure that is of national importance functional, were paramount. I must say that our colleagues have performed exceptionally well in the new reality of teleworking from home, from a distance. And while the enthusiasm that arose during those first few weeks of teleworking has since died down a bit for some of the staff, a solid portion is more than likely to remain in 'the new normal' in operations.

Q: Do you think certain aspects of doing business in the port have permanently changed?

A: The COVID-19 crisis will force many companies to reconsider their entire supply chain, for both practical and strategical reasons. Among others, I think reshoring and nearshoring – to the EU at least – will be accelerated in some industries. This will create opportunities in the partial reindustrialisation of the EU. It will subsequently also influence the volumes and types of goods that enter and exit the port. At what pace these developments will take place is another question. These sorts of decisions take time, not just in taking them but also in implementing them.

Q: What developments in the port do you have high expectations for? In other words, which innovations will shape our future?

A: The essential focus on energy transition and CO₂ reduction on the one hand, and the necessity to increasingly focus on added value with ever scarcer land and

environmental space on the other. Existing companies that create a lot of added value are often partially or entirely fossil. To secure that added value for the region, a successful energy transition is of vital importance. If any one of those companies does not manage to transition and consequently succumbs, it would take a long time and a require a major effort from new companies to compensate the lost added value. And it is that added value that pays for our social security, our healthcare, our education, our culture, and more. The tonnage itself does not do that. Our assignment therefore is to focus on attracting those companies and cargo flows that create added value locally. After all, the port ecosystem is not merely a source of employment, but also a source of hindrance. When we bring new business into the port, we need to ensure that it will provide that added value. That calls for a somewhat different approach than the one we used in the past. Some may find it hard to adapt, but it is the only way to combine economy, sustainability, and quality of life.

Q: 31 August is your last day as CEO of North Sea Port. After that, your current co-CEO Daan Schalck will be at the helm of the port authority. What is your farewell wish to

A: Much wisdom. No one can ever have too much of that. And the realisation that a fruitful merger is never, or at least not for a longer period of time, an attainment. I wish for him to nourish the starting points of this "merger of equals" and demonstrate them continuously to all workers and actors in the port area every day. To never let the idea emerge that the merger was an acquisition. That is not an easy task, but a necessary one in order to continue to reap the benefits of this wonderful merger in the long run.

Q: What is awaiting you from September onwards?

A: "Every day is the first day of the rest of our life" is a motto I embrace, and the first of September will not be any different. I will continue to be affiliated with North Sea Port as a strategical advisor and have taken up several other board and supervisory positions. Moreover, I have been granted the position of honorary consulgeneral for the Belgian provinces of West-Vlaanderen and Oost-Vlaanderen. In this capacity, I will also represent the interests of Dutch civilians and companies in these provinces. The common denominator in these different positions is the cooperation between Belgium or Flanders and the Netherlands, which has been a central thread throughout my career and which I will continue to commit myself to. I have also been asked to act as crisis manager or turnaround manager, but I have decided not to take on such positions for the foreseeable future.

Aside from that, I will have more time available to provide informal care to a few family members and to spend with my first grandchild. It is wonderful to have so much to look forward to, although it is somewhat peculiar to leave the port community in the middle of this COVID-19 crisis.

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North Sea Port changes management

The management of the North Sea Port SE holding changed on 1 September 2020. The management structure has been simplified, the port's decisiveness expanded, and the number of managers has increased from two to four.

CEO Jan Lagasse left North Sea Port on 1 September 2020 (see interview on page 8). From now onwards, the company will be managed by the other CEO, Daan Schalck.

In the past period, the supervisory body – that exercises control of the most important decisions – together with CEO Daan Schalck traced out the future management and administration. The port authority has simplified its management structure to increase decisiveness, create more commitment, and realise an improved decision process. It is within this framework that the number of managers has increased from two to four people.

Career opportunities

From the start of the merger (on 1 January 2018) onwards, a promise was made to staff members that development

opportunities would arise in the merged company. Consequently, the search for suitable candidates for management functions was conducted internally.

After having completed the procedure, the supervisory body appointed the following people as managers, in addition to CEO Daan Schalck:

- Dick Engelhardt (Chief Development & Nautical Operations Officer).
- Sofie Monteyne (Chief Financial Officer).
- Peter Van Parys (Chief Operating Officer).

The supervisory body opted for a balanced composition of management, taking into account the different aspects such as competences, gender, and a balanced representation from both branches of the company. The employees' council (SE-OR) advised favourably on this procedure and candidates. Within the framework of the unity of leadership and personal union, the new managers will also be appointed as managers of both 'subsidiaries' of North Sea Port: North Sea Port Netherlands and North Sea Port Flanders.

The new management will be further introduced in December's issue of PortNews.

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The final stage

The construction of the Borssele 1 & 2 offshore windfarm is reaching its final stage.
All 94 array cables have recently been successfully installed, and all wind turbines are mounted. The entire windfarm will be fully operational in Q4 of this year.

Photo courtesy of Great descriptions are mounted.

The extra mile

Companies in lots of industries take various steps to reduce their ecologic footprint to save money and the environment. Although ample taken measures can often be considered as picking just the low-hanging fruit, some companies are not satisfied and put extra work into reducing their CO₂ emissions. One such company is Kronos Europe, and PortNews visited Ghent to learn more about its efforts.

Kronos Europe is based at North Sea Port alongside the Ghent-Terneuzen Canal. At this location we were cordially welcomed by Hugo Stas, the company's Manager Energy & Planning.

Primary pigment

Kronos Europe began in 1957 as Société Chimique des Dérivés du Titane (S.C.D.T), producing titanium dioxyde pigments (TiO₂) using the sulfate process. TiO₂ is the world's primary pigment for providing whiteness, brightness, and opacity in lots of products. Mr Stas elaborates, "Our pigments are sold to industrial customers, which is why not many people, even in our own region, know our company. Our whiteners are however used in many products that appear in everyday life. I do not exaggerate by saying that there is no day without somehow coming by our products as they are widely used, from PVC window frames to pharmaceutical products and from concrete to paper." Since 1969, S.C.D.T. is a 100% subsidiary of Kronos which resulted in a name change to Kronos in 1971 (Kronos Europe in 1992). The company in 1989 changed from the sulphate process to the more efficient chloride process that was developed inhouse by Kronos in the mid-Sixties.

A gradual process

On a worldwide scale, Kronos Europe is one of the few producers of TiO₂ using the chloride process, and the only



one in Belgium. TiO_2 is a valuable product that is used in many applications. "Around 5.5 million tonnes of TiO_2 is annually produced on a worldwide scale", Mr Stas explains. "The Kronos Group produces approximately 550,000t per year, of which around 95,000t is produced in Ghent." Since the start of the production in 1957, the company constantly invested in improving the production capacity, which grew from 3,500t in 1957 to today's current volume. "Raising capacity has always been a gradual process," continues Mr Stas, "and step by step we have reached our current level. With planned investments,



we will be able to expand to 120,000t and are aiming at optimising and reducing our ecological footprint."

Covenant

The latter is certainly not a new goal for the Belgian company, as it had already signed a covenant with the Flemish government in 2003 for reducing its environmental impact. "It is no secret that because of our production process, we are in the Belgian top 30 with regard to energy use", says Mr Stas. "With sustainability high on the Kronos Group's agenda, reducing the

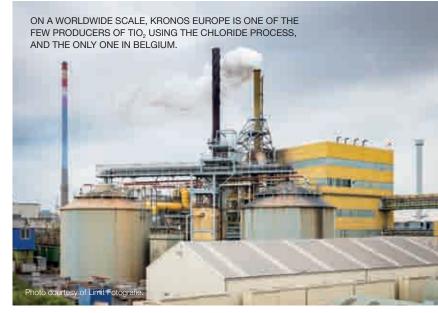
use of fossil fuel and our CO_2 emissions has become one of our primary goals. Supported by the covenant, which enables us to profit from governmental subsidies for our investments, we have been able to take many steps in becoming a leading sustainable company."

Waste heat boiler

"Since we started our sustainability programme, we obviously took the easiest measures first. After a while, we reached the stage that we had to look into more complicated solutions",



Mr Stas explains. "For our sustainability programme, we have established a dedicated taskforce that consists of people from various relevant departments in our organisation. When necessary, external advisors are asked to join. This taskforce regularly screens our production process to look for improvements." For the taskforce, which is managed by Mr Stas, it soon became clear that using the large amount of residual heat originating from the production process could result in considerable reduction in the use of fossil fuel. Mr Stas provides a small lecture about the process, "During the production of pigment, large amounts of waste gases arise. Those gases contain carbon monoxide (CO). We already use part of this CO as fuel, together with natural gas in two combustion installations. The remaining waste gases, around 32m³ million per annum, is send to an off gas burner in which the CO is converted to CO₂, with natural gas as support fuel. Huge amounts of heat are released in this process, and the challenge was to make use of this residual heat." Mr Stas continues, "The idea to use residual heat for producing steam already existed for a while. This steam can be used in the production process, for example for heating and evaporating liquid titanium tetra chloride. A long-term agreement with our former steam supplier had prevented the further development of this idea until now. In 2016, the plan was raised to replace our existing off gas burner and at the same time install a heat recovery installation, or waste heat boiler (WHB), between the new off gas burner and our desulphurisation installation, enabling the use of residual heat in our process."



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For our sustainability programme, we have established a dedicated taskforce that consists of people from various relevant departments in our organisation.

Challenges

This new project was easier said than done, as Mr Stas explains that several challenges had to be overcome. "First priority was to install the new installation without troubling our production process too much, as we wanted to avoid long and costly production stops. It was therefore decided to install the new off gas burner on a new location, so that the existing off gas burner could remain operational as long as possible. For installing the new off gas burner, a number of existing storage tanks first had to be moved to another location. Then the waste heat boiler, with a weight of 46t, had to be put in place. "The waste heat boiler," adds Mr Stas, "caused another challenge for us, as we had to place this object above an existing road on our terrain. This road is used by trucks and cranes, hence the boiler needed to be installed at a height of 17m to create a safe passageway for traffic. Altogether, this was quite an operation and WHB constructor Callensvyncke, together with heavy lifting company Desutter, took care of it efficiently." Another challenge was that the gases from our production process contain a certain amount of sulphur that can cause corrosion in the heat recovery installation. The entire heat recovery process thus needs to be kept at a minimum temperature of 195°C, as a higher temperature poses no risk of corrosion caused by the sulphur. "In normal situations this might be only a small problem, but the temperature will drop in case of a waste heat boiler shutdown. As a solution, we now (pre)heat the system with steam", Mr Stas says. Another issue is that the temperature of the gases leaving the WHB may not exceed 400°C, as this would damage the desulphurisation installation. The last temperature issue was the WHB's isolation. Mr Stas continues, "During shutdown of the WHB, we have to block the gases by means of two huge double walled valves. To guarantee that these valves remain 'gas tight', we heat these valves with hot air circulation between the walls to keep the temperature stable under all circumstances. Temperature control really was and is an important issue in our heat recovery project. It is a challenge to keep the temperature at the desired levels, but it seems we have succeeded in managing this."

A bit irrational

Two additional production stops were required for the project, meaning that on top of the already planned turnaround, the downtime was extended with an additional fortnight. "For Kronos Europe, it was essential to limit shutdown time", voices Mr Stas. "One should know that even when not producing, our process still

uses 25% of the normal amount of electricity. Apart from this, the restart of production is also time-consuming and expensive. With the right measures taken, we could limit the additional time for the complete installation of the equipment." The entire project required an investment of EUR 12 million, excluding costs caused by the additional shutdowns and labour cost. "When looking at this from a commercial point of view, the investment might seem a bit irrational as the new equipment installed does not result in higher volumes or cheaper production", Mr Stas admits. "Also, when we started this project, we knew that there was hardly any knowledge available on this matter, as we are one of the few producers of TiO₂ using the chloride process and have a unique desulphurisation process. Searching for the right solutions was therefore a very labour-intensive process. In fact, before testing of the installation started, we only knew that things would work as desired in theory. However, the investment will enable us to hugely reduce the use of natural gas in our production process, which will result in lower energy costs. What is more, it will lead to a considerable CO₂ reduction, which is good for our ecological footprint. We expect to lower our use of natural gas with 2.7m3 million per year or in other words, a reduction of 6,000t of CO₂. This amount of gas is comparable with the average annual use of 2,000 households", comments Mr Stas.

An important step

The new heat recovery installation was taken into operation early June and is currently still in the testing phase. "So far," Mr Stas says, "everything works as we expected. Several adjustments were made during the testing phase and once fully operational, we will look to further optimise the process." Now, with the installation working as planned, Mr Stas can only conclude that Kronos Europe has with this investment taken an important step in reducing the company's ecological footprint. Apart from this, the investment also shows the Kronos Group's trust in its Belgian plant. "Allowing us to make this considerable investment means that our corporate management sees our plant as important for the future of the Kronos Group. When looking at sustainability, they give us the opportunity to go that extra mile. This creates confidence among our employees and management and motivates us to further operate in a safe and sustainable way", Mr Stas concludes.

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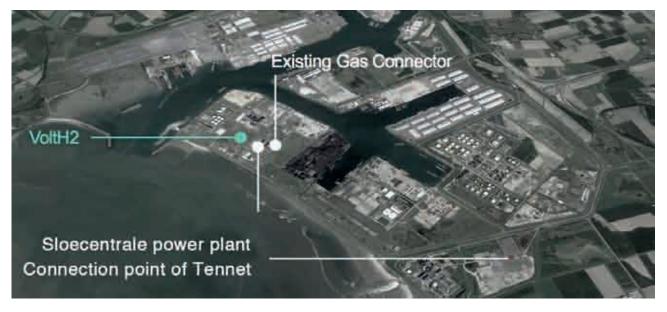
VoltH2 plans green hydrogen facility at North Sea Port

VoltH2 recently signed a Memorandum of Understanding in advance of a Long Lease Agreement with North Sea Port for the exclusive use of 27,950m² of industrial land for the construction of a green hydrogen production, storage, and distribution facility.

The Memorandum of Understanding also includes provision for a right of way for a hydrogen pipeline to a rail tanker loading area, and North Sea Port's assistance with coordinating VoltH2's connection to the nearby power grid. This plan fits perfectly in the Port Authority's ambition to become a frontrunner in hydrogen. VoltH2 intends to install an initial 25MW electrolyser to produce green hydrogen from water electrolysis, employing only proven and commercially available technologies to ensure certain and near-term deliverability of the project. When operational, the 25MW electrolyser is expected to produce up to 3,600t of green hydrogen per year. With integrated and dedicated storage facilities, the company will provide access to locally available hydrogen fuelling stations. The green hydrogen production facility will be designed so that it is scalable up to 100MW for potential annual output of up to 14,400t of green hydrogen.

Ideal location

VoltH2's launching site is strategically located adjacent to the Sloecentrale power plant in the Vlissingen port area, and it is in close proximity to other major industrial businesses that are expected to use commercial volumes of green hydrogen, versus the current grey or blue hydrogen. VoltH2 is further analysing the potential to integrate or run a trunk line if necessary, as infrastructure dedicated to hydrogen. Furthermore, the location has road, rail, and sea access for the supply and distribution of green hydrogen to the wider region or gas infrastructure grids. "The signing of a Land Agreement with North Sea Port for our launching site in Vlissingen marks the start of an exciting journey for VoltH2," says Andre Jurres, Founder and Managing Director of the company. "We thank North Sea Port for their cooperation and support in enabling us to take the first step in our plan to create a green hydrogen hub in the Port of Vlissingen. For us, North Sea Port, and more specifically the proposed location in Vlissingen, is ideal", Mr Jurres explains. "It is going to be located at a crossroad of power, with the Sloecentrale, the EPZ nuclear power plant, and the connection to the national grid of the Borssele offshore windfarms at walking distance. Apart from this, it is good to know that Zeeland, apart from being a relevant industrial cluster, has more to offer for the development of green hydrogen facilities, such as a collaborative local and provincial government, and a high level of education and research at the HZ University of Applied Science."



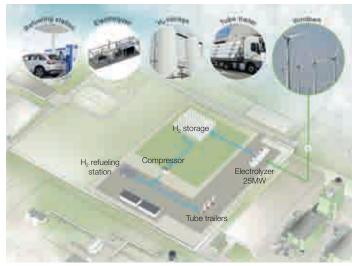


Make money first

Approximately 1 to 2MW is supplied via the current wind energy to H₂ conversion, meaning that green hydrogen is still in a premature phase. The European Parliament has set goals to achieve 4 to 6GW of hydrogen in the near future, so ambitions are high. "In order to make green hydrogen a success, commitment is important from various sides, not in the least from national and European government", Mr Jurres states. "With the European willingness to promote hydrogen, the available know-how, and sufficient financial back up, the time is now right for us to act. It is obvious that with this kind of innovation, we have to make money first to spend it and therefore proper back up is evident. This is also the reason why we have decided to start relatively small with 25MW and after that when possible to gradually expand to a maximum of 100MW." One of the disadvantages of hydrogen is, according to Mr Jurres,, that it is a fuel that does not exist in nature, meaning that is has to be produced first before it can generate power, which requires electricity. "At this stage of development, the amount of electricity to produce hydrogen is sufficient", Mr Jurres explains. "However, as soon as large hydrogen projects will shift into higher gear, we must be prepared and make sure that ample supply from offshore wind is guaranteed," Mr Jurres voices.

Finding first customers

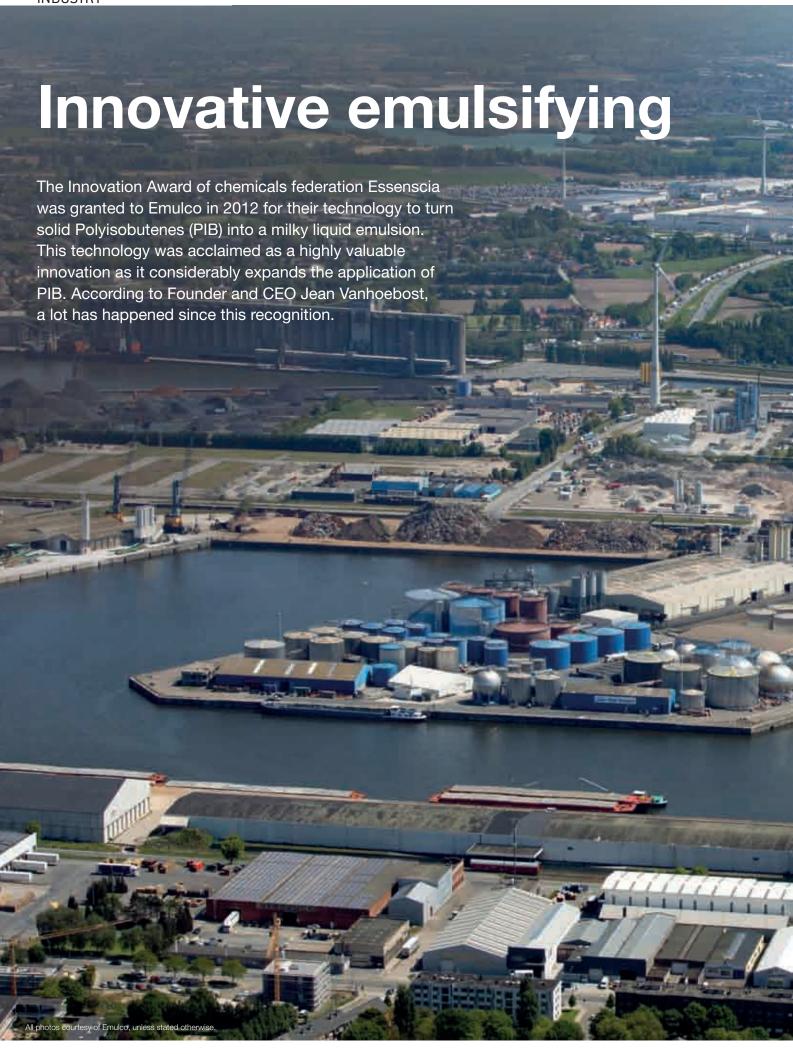
VoltH2 is a privately-owned Dutch company, founded by Andre Jurres via his Volt Energy holding. Mr Jurres has a significant track record in the industry, having also founded Essent Belgium and NPG Energy. VoltH2 is dedicated to the origination and development of green hydrogen infrastructure projects in North West Europe. For the North Sea Project, VoltH2 has initiated discussions with investors in the project and prospective parties for the dedicated supply of renewable power to the



THE GREEN HYDROGEN PRODUCTION FACILITY WILL BE DESIGNED SO THAT IT IS SCALABLE UP TO 100MW FOR POTENTIAL ANNUAL OUTPUT OF UP TO 14,400T OF GREEN HYDROGEN.

facility, as well as long-term H₂ offtake commitments to support the launch and project economics. "Now that we have made the arrangement with North Sea Port, the next step will be to find the first customers for our green hydrogen," Mr Jurres says. "Looking at North Sea Port, there are many companies that could use our green hydrogen in their process. Apart from the Sloecentrale, the port furthermore has an extensive process industry cluster. But soon hydrogen can also be used for powering barges and trucks, so hydrogen fuelling and bunkering facilities are also valuable options for a port. We expect that finding the launching customers will take time, so our VoltH2 project will probably not supply the first amounts of green hydrogen before the end of 2022."

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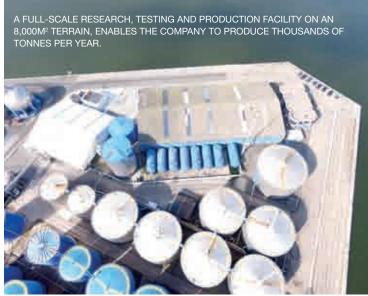




"The story of Emulco (short for The Emulsion Company) dates back to 1997," Mr Vanhoebost tells, "when we founded our company in Malaysia. Throughout the years we became the market leader in the Asia-Pacific region for paraffin wax-based emulsions. This type of emulsion is often used in the rubber and wood industry." In 2004, it was decided to establish a laboratory in Ghent. "The aim of our Ghent laboratory was to provide the technical and scientific support for core business emulsions, as well as a search for new types of emulsions. This turned into a long quest of structured and unstructured research that at a certain moment found its way to PIB polymers, an important product produced by, among others, BASF", Mr Vanhoebost explains. "This PIB is a widely-used polymer, as it has the features of being UV stable, water, gas, and airtight, and it has an extraordinary cold flow behaviour as it only congeals at -60°C! Anything above this temperature makes the molecule self-healing if carved or scratched. It is a crystal-clear molecule that remains unchanged for decades. The product is also foodproof. It is, for instance, a common ingredient of chewing gum and lipstick. However, one of the disadvantages of PIB is that it is extremely viscous when molecular weight increases (similar to rubber), which makes it hard to dose and very difficult to apply. With my emulsion background, I have always been attracted by emulsion challenges and I was much triggered by BASF telling me that emulsifying PIB would be quite impossible."

High potential

After months of research, trying, and testing, Emulco countered the statement as it succeeded in finding the right solution. "The challenge was basically to overcome the PIB's extreme viscosity and sticky behaviour to make a water-immiscible product watermiscible", comments Mr Vanhoebost. "An emulsion consists of a water-immiscible substance, water, and a stabiliser system. When you shake these, they will barely mix and will after a while separate once again if no mechanical/physical process is added to keep the emulsion stable for longer periods. You can see this happen in vinaigrettes. For keeping the substances properly mixed, an emulsifier is needed and the challenge for this project



INDUSTRY



was to find the proper one, in combination with the suitable process technology. Once we managed to do so, Emulco patented the formulations and production process and built a pilot plant to move onwards in an effort to find new markets." This pilot plant was important to be able to upscale the production volumes from a laboratory phase to larger quantities. Emulco entered the next phase of this upscaling in 2015 by opening a full-scale production facility on an 8,000m2 terrain on which the company can produce thousands of tonnes per year. The factory is located on the Sea Tank Terminal premises in Ghent. Unfortunately, the original plans to develop the market did not work out as scheduled and Emulco was constricted to move around freely while sales were rendered impossible. "It is obvious that our programme went in dire straits", voices Mr Vanhoebost. "Nevertheless, we persevered and to make a long story short, by the end of 2019 Emulco was able to resolve all legal issues to regain control of its technology and marketing possibilities."

Lab to pilot to production

With the new PIB emulsion, Emulco has opened a new market for PIB. "PIB has traditionally been used for more than 75 years now for, among other things, sealing double glazing, roofings, cosmetics, construction compounds, and a lot of adhesive applications", Mr Vanhoebost explains. "With our new PIB emulsion, many more applications are possible, ranging from cosmetics, adhesives, sealants, and construction compounds to crack repairing paint. It can even be applied as a barrier for nuclear radiation or Radon gas. In fact, our biggest challenge now is to market our product, as most companies are unaware of the tremendous possibilities that this emulsion has to offer." The unique PIB emulsion has undoubtedly put Emulco in the spotlights, yet this does not mean that it is the company's only activity. "Emulco is today built on three pillars", Mr Vanhoebost elaborates. "We provide lab to pilot to production all in one location, making us flexible enough to respond to specific needs and requirements, whilst being able to manufacture orders ranging from kilos to tonnes. There are three 15m3 stainless steel reactors and one 10m3 heavy duty reactor available. Our laboratory is used for own research, but we also conduct R&D projects for other companies." A relatively new



THERE ARE THREE 15M3 STAINLESS STEEL REACTORS AND ONE 10M3 HEAVY DUTY REACTOR AVAILABLE.



We provide lab to pilot to production all in one location, making us flexible enough to respond to specific needs and requirements, whilst being able to manufacture orders ranging from kilos to tonnes.

R&D activity is for the vegetable oil & wax industry. Companies like Cargill produce vegetable-based oils and waxes and are aiming at finding sustainable alternatives for mineral oil-based products. "Our focus here lies on the development of vegetable emulsions. These vegetable emulsions, often based on palm, soy, coconut, and rapeseed, have ample potential", says Mr Vanhoebost. "A vegetable emulsion is food-proof, which means that it can be used for applications in the entire food industry such as for the production of food contact paper,





hereby replacing its plastic siblings responsible for the infamous plastic soup in our oceans." Second pillar of the company is the pilot plant. Just like the laboratory, our pilot plant is available for our own use, but also for other parties," states Mr Vanhoebost. "We help companies with upscaling testing new products, as ample products that proved to be working on a laboratory scale require further testing in higher volumes." Emulco's final pillar is the production facility in which own and third-party emulsions are produced.

Blending without a blender

Research and technology will always be the core of the company's business, Mr Vanhoebost admits. "In our research we often work together with universities such as KU Leuven and recently with ETH in Zurich, which is often referred to as the 'MIT of Europe'. Together we have been investigating the possibility of producing emulsions by means of static mixing. Emulco acquired the intellectual property rights from ETH and subsequently filed for new patents in that field, but I cannot talk too much about this for now, Simply said. we have managed to find a way to emulsify a lot of different products, even high molecular materials, without using classic mechanical equipment (aimed at using brute forces on the molecules in an effort to force them together). Here, emulsions are made with a device that has no moving parts except for the pumps upstream feeding the device. It is like blending without a blender, one could say. Producing without moving parts is very interesting when looking at saving energy. Moreover, as all our tests with the new process have been successfully conducted at room temperature and just like the PIB emulsion, this invention also has plenty offer for the industry, and for Emulco, too. "This invention is a next step for our company, as apart from the three pillars research, pilot plant, and production facility for emulsions, we have now also turned into a emulsification equipment developer," adds Mr Vanhoebost. "As a next step in this project, we are now seeking parties interested in using this innovative type of emulsifying. I know that a lot of products in the food industry are made by means of classic emulsification technology. Wouldn't it be great to just add eggs on one side of the device and vinegar and oil on the other side and just wait for the mayonnaise to come out with a huge energy saving and a continuous process on top of it? As long as you keep the infeed of raw materials properly set, mayonnaise will keep flowing out. Same for cosmetics, sunscreens, dairy products, and the likes", says Mr Vanhoebost enthusiastically.

A rough ride

Since the start of the PIB emulsion project, it has been a rough ride for Emulco, but things are improving step by step with rising production volumes. "Indeed," Mr Vanhoebost admits, "the past years can be characterised as a lot of research and development with only small production and sales volumes, but now things are gradually improving with new customers and new markets. To enable this, we also issue licences to produce some specific emulsions to companies all over of the world. We are simply too small to be everywhere. Nevertheless, the more companies that buy our products and concepts, the better. Making use of licensees enables us to fully use the potential of our research efforts and become a background world player."

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North Sea Port received a visit from an exceptional ship on Monday 17 August. The Pioneering Spirit, the largest construction and installation vessel in the world, called at the port in Vlissingen, attracting hundreds of spectators. The vessel carried two flare jackets from the Tyra gas field for decommissioning at the Sagro Decom terminal.

For Pioneering Spirit's captain Fred Regtop, the visit to North Sea Port must have felt like a true homecoming, as Vlissingen is his hometown.









No longer in the pioneering phase



Despite the challenges that 2020 has brought, the TPT terminal in Terneuzen is lively. Following a share transfer and the entry of new shareholders late last year, the chemical processing and transshipment plant has been picking up some ambitious projects.

Gradual growth

TPT was founded in 1998 through a management buy-out of the Engelhard Terneuzen factory, who moved its production capacity back to the United States. TPT became their local distributor and from there on, the company gradually extended its work scope to include the storage of base chemicals and organic acids. Based on customer demand, the company has taken on the production of several chemical products.

There from the start

As TPT's work scope expanded, so did its workforce. What started as a six-person enterprise has grown into a current team of 47

Paul van Belle, CEO of TPT, was one of those first six. He started working as a production supervisor on the current





Adding excellent production to efficient data collection unburdens your customers and allows you to distinguish yourself.

> TPT site in 1989, when it was still owned by Engelhard. When Engelhard withdrew from Europe in 1998, Mr Van Belle became chairman of the works council. In the same period, TPT was founded.

During the first years of TPT, Mr Van Belle worked at Dow while overseeing the TPT business on a project basis. He joined the TPT team fulltime in 2000, focusing on operational activities before expanding his function to include commercial management over time. "In a small team, you do everything together," explains Mr Van Belle. "We have maintained that style of working for a long time, deciding on all important developments with a small group of people," he adds. As CEO, he still finds working as a team one of the most important aspects of the job. He encourages entrepreneurial spirit in his employees: thinking outside the box, not necessarily staying between the lines. "Obviously, safety always comes first," states Mr Van Belle, "but it's alright to make a decision yourself. If you don't make mistakes, you won't grow."

The right person

Following the entry of the new shareholders, TPT approached its existing customers. A range of opportunities came to the

INDUSTRY



PAUL VAN BELLE, CEO OF TPT.

fore. However, it soon became clear that virtually all customers valued one aspect in particular: excellent customer service. "When we asked our customers why they appreciate TPT as a business partner, our service level was number one. Clear communication, easy to reach, getting in touch with the right person instead of talking to five different people on the phone and still getting nowhere," clarifies Mr Van Belle. "Being a small company is such an advantage in providing those services," he adds.

So, the first thing TPT did to facilitate its new projects was to expand its workforce. New employees have been attracted in finances, HR support, customer service, and process safety, to lead the new projects to success while maintaining TPT's high service level.

Safety first

One of TPT's unique selling points is that they store ammonia on site. However, that does mean the company is subject to the Seveso III Directive, (Besluit Risico's Zware Ongevallen, or BRZO in Dutch), which means they need to deal with safety on a whole different level.

Becoming - and remaining - a BRZO company was a conscious choice, affirms Mr Van Belle, as it gives TPT a competitive edge, especially combined with the broad range of sectors that it serves. TPT caters to diverse industries, from the petrochemical, feed, and agricultural industries to leather and de-icing airport runways.



New employees have been attracted in finances, HR support, customer service, and process safety, to lead the new projects to success while maintaining TPT's high service level.

For TPT, the COVID-19 crisis has reconfirmed the advantage of being active in diverse markets. They have plenty of different horses to bet on. At the same time, such diverse activities require well-trained personnel. Luckily, TPT did not experience any difficulties attracting the right people. "I think if you present yourself well as a company and provide a pleasant working environment, the right people will find their way to you," stresses Mr Van Belle.

Cleaning up

The entry of the new shareholders has marked the start of a next chapter for TPT. For Mr Van Belle, the focus lies on further professionalising the business. "The pioneering phase is over," he says with a smile. "When we take on a new project now, we take out all the old equipment and tidy up the floor and walls before we implement the new installation," he adds. The cleanup has already commenced to facilitate several new projects that TPT is investing in.

Leather

One of the projects that TPT has taken on is for a customer in the high leather segment. Eight years after its initial development, a new and environmentally-friendly product for tanning leather has convinced the somewhat conservative leather market of its long-lasting quality. The reactions to trials have been tremendously positive. Mr Van Belle continues, "Later this year, the product will be reintroduced by discussing the great results from several trials. We really expect this product to take flight." In preparation, TPT has upgraded its existing installation for the production earlier this year.

Another project that TPT is currently working on is creating a new mixing installation for a product in the feed sector. Apart from getting the two current projects up and running, TPT is also looking into taking on projects for new customers. When TPT receives an inquiry, the company first discusses a potential customer's wishes and expectations, as well as what value TPT can add to the client's product or production process. "Doing additional projects on top of our regular activities has quite an impact on the organisation," says Mr Van Belle. "In terms of investments, but also the required head count to man a new installation, for example."

Ideal logistics

"From a logistics point of view, our location in Zeeuws-Vlaanderen is ideal," states Mr Van Belle. "The North Sea Port merger has also added to that, as it has enhanced contact between Zeeuws-Vlaanderen and Ghent. The port merger really added value," he continues. "Many of our customers are active in distribution, so for them, your location is of vital importance. What market can they cater to from your site? The developments within North Sea Port truly make a difference. They put the cross-border region on the map."

TPT - company profile

TPT specialises in the processing and transshipment of chemical products.

At present, TPT has a total tank storage of 14,000m³. The site in Terneuzen has approximately 30 silos for the storage of dry chemicals and powders, with tank volumes ranging from 180m³ to up to 640m³. TPT's tanks can be filled directly from an inland shipping vessel or container and are equipped with dedicated pipelines for various chemicals and powders.

TPT also has 24 tanks for liquid storage, with volumes ranging from 80m³ to up to 1,300m³. The stainless steel and carbon steel tanks are fully equipped with heating and cooling facilities.

Located on the Ghent-Terneuzen Channel at Terneuzen, TPT has its own quay that can facilitate inland shipping vessels and coasters with a maximum depth of 7.5m. TPT can also load and unload lorries on site. The terminal is easily accessible by road.

Six processes under one roof

TPT's facilities include a screening plant, drying plant, centrifuge, mixing plant, and ammonia plant. The plants are connected to each other and can be used separately or combined.

Applications

TPT provides services to companies active in varying industries, ranging from the petrochemical industry and agriculture to the food industry. TPT adds value to its client's raw materials and products in various ways.

- Oil industry
 - TPT receives the basic raw materials and stores these in silos. The raw materials are subsequently blended according to client specifications.
- Feed industry
 TPT produces additives for the feed industry. The production is GMP+ certified.
- Airports
 - TPT produces de-icing products for runways, responding quickly to varying climate conditions in Europe.
- Agriculture
 - Among others, TPT produces different products that prevent mold from growing in hay.
- Food industry
 - The caustic soda that TPT stores also finds its way to beer breweries, where it serves as a cleaning agent for the pipe system. Caustic soda is also a component in many other products.

Apart from using its own quayside, which is suitable for coasters and inland shipping vessels, TPT also has a railway connection close to their site, with future potential to realise a link-up. Congestion-free and environmentally-friendly, Mr Van Belle sees rail transport as a highly promising shipping alternative. "Trucks are our number one method of transport, but we have the potential to offer our customers a different, sustainable option in the future." he says.

As much as Mr Van Belle would like to tap into sustainable energy sources for its processes, he finds that in batch-based processes such as TPT's, it is difficult to find sustainable energy sources that match. "Our processes are project-based and



TPT PROVIDES SERVICES TO COMPANIES ACTIVE IN ALL KINDS OF INDUSTRIES, RANGING FROM PETROCHEMICAL AND AGRICULTURE TO FOOD.

batch-based, which means that our demand for electricity, heat, and specific substances vary greatly. This makes finding long-term solutions very tricky," he clarifies. "We have great interest in the residual heat of the indoor ski slope located just a few hundred metres away. But they produce heat 24/7, whereas our processing activities are not continuous."

Earning its keep

TPT focusses on specific niche markets in the chemical industry, as reflected by the broad range of sectors they cater to. The company is well equipped to not merely store products, but also add to the production process. "By adding value to the chain, TPT's services pay themselves back," states Mr Van Belle. "By being responsible for part of the processing as well as distribution, you make yourself indispensable. Moreover, it provides us with a lot of data, which in current times is virtually as important as production itself," he adds. For that reason, TPT is investing in an Enterprise Resource Planning (ERP) package to streamline and automate internal processes. The new system only requires data entries once, then links the input to the various separate systems, making it easy to access the data and evaluate ongoing processes. "Every business should determine what differentiates it from others. Creating good quality products is a given. If your product quality isn't up to standard, you will be out of work soon enough. So what sets you apart? I think adding excellent production to efficient data collection unburdens your customers and allows you to distinguish yourself. If you make things easy for your customers, you make it hard for them to leave," concludes Mr Van Belle.

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KRIS VANHERBERGEN, EXECUTIVE

KRIS VANHERBERGEN, EXECUTIVE VICE-PRESIDENT OF RAIN CARBON INC. AND GENERAL MANAGER RAIN CARBON ZELZATE.



KRIS TRUYENS, VP BTX, PA, AND PETROCHEMICALS OF RAIN CARBON INC.

Sustainability, recycling, and reuse of materials today are real buzz words, with many companies doing their best to contribute to a better and cleaner world. Rain Carbon Inc. in Zelzate (North Sea Port) was already putting recycling into practice long before the word sustainability arose.

PortNews held a corona-proof meeting with Kris Vanherbergen, Rain Carbon Inc.'s Executive Vice-President and General Manager for Rain Carbon Zelzate, and Kris Truyens, the company's VP BTX, PA, and Petrochemicals, on this sustainability avant la lettre.

Rain Carbon in Zelzate is part of multinational company Rain Carbon Inc. The company is a global innovator in the production of raw materials critical to worldwide users of carbon products and advanced materials, including producers of aluminium, steel, titanium dioxide, coatings, plastics, concrete, and tyres. For over 150 years, Rain Carbon and its heritage companies have used their calcination and distillation processes to convert industrial carbon by-products into valuable raw materials for countless products that people around the world use every day. At Zelzate, approximately 450,000mt of raw materials are processed each year. Production is focused on pitch products for the aluminium industry, phthalic anhydride, aromatic oils, and benzene.

Calcination process

"Rain Carbon is a company that originates from several companies that were operating in the field of calcination and distillation of carbon by-products", Mr Vanherbergen says. "Looking at calcination, Rain Carbon's roots date back to 1959 when Kaiser Aluminum and Chemical Corporation (KACC) constructed a calciner in the state of Mississippi, USA, to convert petroleum coke, a solid carbon by-product of the oil refining industry, into an essential raw material for the production of aluminium anodes." KACC built three more US Gulf Coast calciners, and in 1988 these operations became the independently-owned CII Carbon. CII Carbon subsequently grew through the acquisition of three additional US calcining plants. Meanwhile in 1998, Rain Calcining Limited (RCL), an independent start-up based in India, constructed Asia's largest calcination plant. In mid-2007, RCL acquired CII, and the companies changed their names to Rain CII Carbon. The company quickly became well known as one of the world's largest producers of calcined petroleum coke (CPC).

Distillation process

RCI's distillation roots date back to German industrial pioneer Julius Rütgers. In 1849, the 18-year-old entrepreneur took over his father's troubled wood impregnation business for the production of railway sleeper ties. He soon discovered that coal tar had the potential to be more than an impregnation agent. Mr Vanherbergen explains, "Rütgers set up his first distillation plant near Berlin to extract the many valuable compounds from coal tar and transform them into a range of useful products. Distillation allowed the RÜTGERS company to greatly diversify its product line and risk profile, propelling its business into new



directions and launching aromatic chemistry in Germany." Shortly after the first successful electrolysis of aluminium in the 1880s, RÜTGERS developed a new business line in providing the emerging aluminium producers with coal tar pitch as a high-performance binder for their essential carbon anodes. "Then in the 1910s," Mr Vanherbergen adds, "the company invented and produced the first synthetic plastic material based on the production of hardenable phenolic resins: the world-renowned Bakelite."

A period of growth followed in the second half of the 20th century as the company strengthened itself through the integration of many well-known international companies in the steel, coal tar, aluminium, and chemicals industries, including Société Chimique de Selzaete in Zelzate, which became RÜTGERS Belgium.

Single-minded

Rain Carbon acquired RÜTGERS in 2012. "Of course," Mr Vanherbergen explains, "becoming a new company came with many challenges. First, it was important to have the company integrated from an organisational point of view. As two single-minded companies with many similarities, the organisational integration went quite smoothly. We are now as a next step consolidating our global organisation under the Rain Carbon umbrella, and the RÜTGERS brand will carry on as part of a brand portfolio that also includes our environmentally-friendly binder CARBORES, NOVARES pure advanced resins, and PETRORES coating product for lithium-ion batteries." Mr Truyens continues, "The decision to coalesce as 'one Rain Carbon' came after much careful consideration, since the Rain CII and RÜTGERS names were already world-famous. While 'carbon' has a bit of a negative image today due to its connection to fossil fuels and climate change, we are very proud of our role in transforming by-products from the petroleum and steel industries and transforming them - what we call upcycling - into essential raw materials for lots of products and industrial applications that are used every day. Carbon is the core of our business and carbon is all around us in many products; life without carbon is hard to imagine. On top of this, we produce carbon-based products from industrial residues that would otherwise be burned, so this way we contribute to reduced ${\rm CO_2}$ emissions. So ultimately, Rain Carbon has become our corporate brand."

Environmentally-friendly in many aspects

Upcycling industrial by-products has a lot of environmentallyfriendly benefits. Mr Vanherbergen explains, "At our production facility in Zelzate, we convert liquid by-products from oil refineries, steel producing factories, and the petrochemical industry through distillation. Products such as coal tar, naphthalene, and crude benzene are shipped from all over the world to our Zelzate facility. Using the by-products means that the industry responsible for those by-products does not have to burn them, which saves a tremendous amount of CO₂ emission." In addition to the fact that we upcycle industrial by-products, our production process contributes to sustainability in other ways as well", Mr Truyens adds. "Our production process results in a large amount of residual heat. We use almost 100% of this for heating purposes instead of fossil fuels such as gas or oil. Moreover, well over 75% of our raw materials and end products are transported by barge and seagoing vessels, as this is the most efficient modality for us. Using barges instead of trucks fits perfectly within a sustainable supply chain since it minimises carbon emissions, and the benefits of transporting our products on barges is precisely why for decades our plant is located alongside the Ghent-Terneuzen Canal." Looking at its location, Mr Vanherbergen points out that the company has always considered itself a 'real' Zelzate company. "Throughout the many years," he states, "we have always tried to act and behave as a good neighbour. It has always been a deliberate choice to keep our management operating from Zelzate, as this helps our organisation to keep the communication lines short

with our local stakeholders. Being open and honest is important, and we highly value our local social responsibility. Operating in such a way has proven to be successful as we rarely receive complaints from our community, and most of these are related to the loading and unloading of vessels and not to the production process."

Impressive range

According to Mr Truyens, the industrial by-products used by Rain Carbon produce an impressive range of products. "First, we have our impregnation oils, which formed the basis of RÜTGERS. The impregnation oils are used for preserving wood products such as railway tie sleepers and utility and telephone poles. We first transported our wood preservation products to the US in 1904, and this country is still an important market for our creosote oil. For the aluminium industry, we produce coal tar pitch (CTP). CTP is mainly used as a binder in the production of carbon anodes, which are essential for aluminium smelting. One of our customers is Century, which produces anodes in Vlissingen. An important volume of CTP also serves for impregnation of graphite electrodes employed by electric-arc furnaces in steel production. A lot of electricity is required to produce anodes and steel, and carbon is still a very useful and relatively cheap conductor for the process. Through our distillation process we also turn crude benzene into benzene, which is used by petrochemical companies in our immediate vicinity, for instance for their production of polystyrene", Mr Truyens adds.

A longer life

Other production facilities in Rain Carbon's global footprint are also important customers of the Zelzate factory, comments Mr Vanherbergen. "One of our products is supplied to a German plant where it is used for the production of food-approved adhesives and inks on things like candy bar wraps. Our products are furthermore used as ingredient for carbon black, an important material for the tyre industry. One of the latest innovations from our German sister company improves the low rolling resistance of tyres that contributes to safer driving and better fuel economy." The list of applications of the products produced in Zelzate is in fact an extensive one. They can also be found in coatings for offshore wind turbines, in insulation materials for more energy-efficient buildings, in concrete to improve its flow behaviour, in coatings for lithium ion batteries, and so on. Many of those applications contribute to a longer life of the products they are used in and in CO₂ emission savings. "Given the rapid growth in electric-vehicle sales around the world, we see ample opportunities for our PETRORES coated-carbon product for lithium-ion batteries," Mr Truyens states. "This coating is an essential component in the production of high-performance batteries and gives them a longer life, and we all know how relevant this is. Today, the market is still exclusively for Chinese, Japanese, and South Korean companies. Nevertheless, we think that the lithium-ion battery industry has a lot of potential for Europe as well, and our PETRORES coated-carbon could play a prominent role in this."

COVID-19

Like many other companies, the COVID-19 story has two sides for Rain Carbon. Mr Vanherbergen first mentions the safety aspect. "Our first aim was to protect our people against the virus as soon as we became aware of its impact. The new regulations and measures taken have considerably changed our operations. It is not just a matter of our own staff, but we must of course also deal with people from suppliers, customers, and transport companies that visit our plant. It is good to notice that we have so far managed to keep our premises corona-free." The other aspect of the virus is the



LIQUID BY-PRODUCTS SUCH AS COAL TAR, NAPHTHALENE, AND CRUDE BENZENE ARE SHIPPED FROM ALL OVER THE WORLD TO THE ZELZATE FACILITY.



Throughout the many years, we have always tried to act and behave as a good neighbour.

economic impact. "Overall, the six-monthly figures of this year reveal a mixed picture", Mr Vanherbergen says. "The start of the year was quite promising. However, during the second quarter we began to experience the cascading effect of the virus on the global economy. We fortunately operate in many different markets. Some of them are suffering, others are not. This way, we have been able to limit the damage thus far." "We think," Mr Truyens adds, "that most total lockdowns are over, and we have good faith that things will improve."

Paradox

Rain Carbon has a long history, and the company could only survive by constantly innovating. "Innovation has always been one of our cornerstones", Mr Vanherbergen says. "We continuously search for new by-products that we can use, for new products we can make from those by-products, and for new applications of our products that can meet evolving 21st century expectations for cleaner, lighter, and faster products. For us, today's global energy transition away from the use of fossil fuels is a challenge that we will need to deal with, as it will likely result in a decrease in the raw materials that we need. Many speak of a 'green revolution' that is going on. Nevertheless, I think one should speak of a 'green evolution', as things go steadily, rather than fast. Until 2050, petrol will still be one of the most important fuels. From that point of view, we will not lack by-products – nor opportunities to transform them into raw materials that make 21st-century life possible."

Mr Truyens concludes with a wink of his eye, "Paradoxically, a large amount of petroleum by-products that we buy are used in the lithiumion batteries for the growing number of electric vehicles. Looking from that perspective, it would be a bad case if demand for petrol would result in a shortage of the raw materials that we derive from its production process. Just as important, the petroleum coke that is converted into CPC is an essential ingredient in the anodes required to produce aluminium, which is the lightweight metal of choice for energy-efficient electric vehicles."

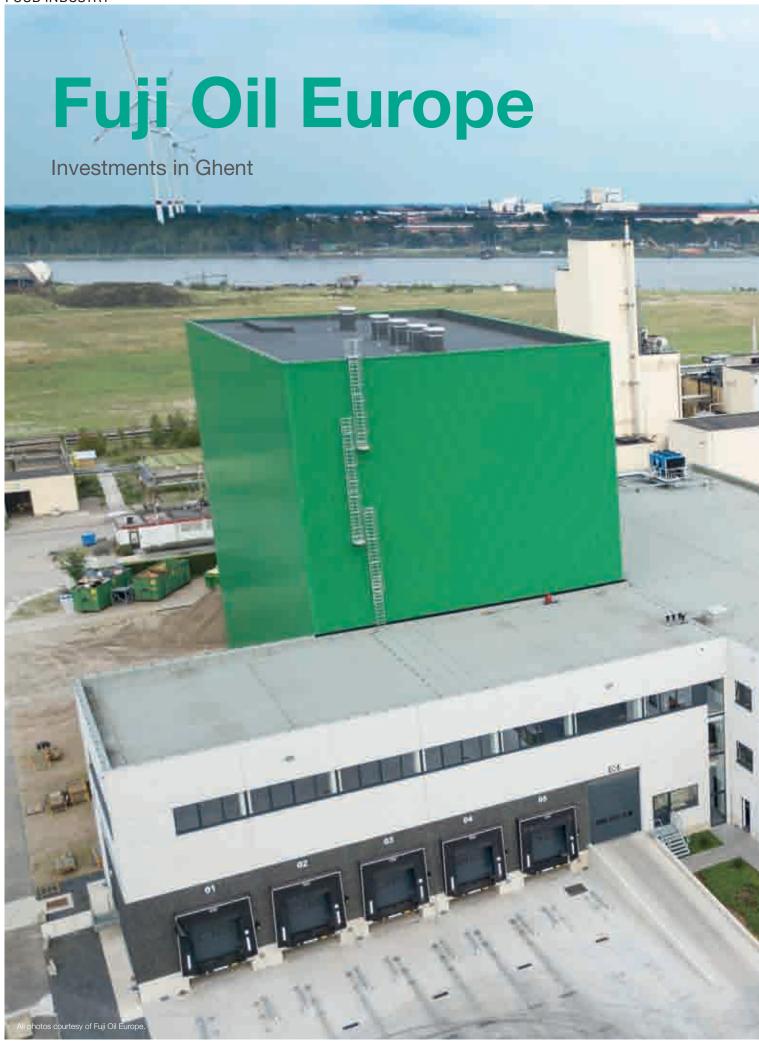


North Sea Port

the 60 kilometres long cross-border port area stretching from Vlissingen over Terneuzen in the Netherlands to Ghent in Belgium









FOOD INDUSTRY



VEGETABLE FATS.



THE R&D LABORATORY.

Fuji Oil Europe has decades of experience in developing innovative and value-adding plant-based specialty oils and fats for applications. The plant has a large range of processing technologies available, from hydrogenation over fractionation to interesterification and high-quality refining. Fuji Oil Europe is renowned for its high-quality cocoa butter equivalents (CBE), cocoa butter substitutes (CBS), cocoa butter replacers (CBR), functional filling fats, and nutritional fats.

Fuji Oil Europe in Ghent is part of the Fuji Oil Group's global network of companies. Fuji Oil Europe's managing director Jon van den Bremen says, "In 1992 Vamo-Fuji Specialties was founded as a joint-venture between Vandemoortele and Fuji Oil, Fuji Group's first European business activity. Vamo-Fuji Specialties became Fuji Oil Europe in 2001 and was fully integrated into the Fuji Oil Group."

Expansion

Fuji Oil Europe's fillings & compounds division can rely upon their very own in-house fat technology. Mr Van den Bremen explains, "This year and next year, Fuji Oil Europe will invest in the expansion of the production capacity of cocoa fillings, compounds and specialty chocolates for the food industry in order to double its capacity. The total investment will be around EUR 9 million. We started our first constructions works in April using strict safety protocols due to COVID-19."





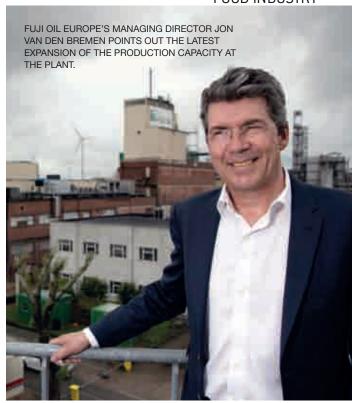




Last year, Fuji Europe Africa was established as the European and African regional headquarters for the Fuji Oil Holdings. They are responsible for creating new businesses based on their portfolio of plant-based food solutions, providing applications for meat and dairy analogues utilising their own highly-functional ingredients. They support the expansion of the European Cocoa-Based Fillings and Compounds, and Specialty Oils & Fats businesses through Fuji Oil Europe and Fuji Oil Ghana. Fuji Europe Africa is also a centre for developing and implementing the group's globalisation strategies, such as overseeing and optimising the group's global supply chain and implementing and communicating its sustainability agenda. Fuji Europe Africa is a hub for Group R&D open innovation activities.

New MD

Mr Van den Bremen was appointed as Managing Director in 2019. He has over twenty years of experience in the food ingredients industry and significant managerial experience at senior level in multinational companies. Before he started at Fuji Oil Europe, he headed a cluster of four companies within the German Döhler Group. Mr Van den Bremen elaborates on the importance of company culture, transparency, sharing information, connecting to people, and having a joint vision. "We respect people and the environment and put safety first. It is really important to have personal and informal contacts throughout the entire company, connect with people and make



everybody part of a winning team. We are innovators and we challenge each other to demonstrate ownership and agility."

COVID-19

Keeping operations running during the global COVID-19 pandemic has been quite a task for Fuji Oil Europe, but thankfully it is one in which they learned a lot from each other as a team. Mr Van den Bremen adds, "Keeping our factory operational during this crisis was a challenge. Remaining in close contact with our employees in the factory was crucial, either via Team Meetings or by way of a simple phone call. They are the real food heroes. I saw this as a period of opportunities. During this first phase of the COVID-19 pandemic, we realised the importance of consultation and involvement, listening, and informing each other even more. We learned that we were dependent on each other. We rediscovered the resilience within ourselves."

Sustainability

Fuji Oil Group announced its Sustainable Procurement Commitment to Eliminate Child Labor and Prevent Deforestation. The Fuji Oil Group uses palm, cacao, and soybeans as raw materials for its business, which are environmental and social issues at the production site. The group considers switching all raw materials to sustainable ones to be an essential strategy for enhancing the sustainablity of the group's business. Fuji Oil Europe has a sustainable procurement programme in place and is a longstanding active member of the Roundtable for Sustainable Palm Oil (RSPO). They have fully converted their Palmoil into RSPO-certified.

The non-profit organisation CDP recently awarded Fuji Oil Holdings with the Climate Change A-level, in recognition of their measures against climate change and high transparency of the related information. In line with its management philosophy, the Fuji Oil Group promotes Environmental, Social and Governance (ESG) management to achieve sustainable growth while contributing to a sustainable society. In 2019,

FOOD INDUSTRY



Fuji Oil established the position of Chief ESG Officer, which is also on the Board of Directors, to reinforce the Group's ESG management. Risks and opportunities associated with climate change have been evaluated through a group-wide risk management system. In the future, the group will visualise risks and opportunities of the business resulting from climate change by participating in the taskforce on climate-related financial disclosures (TCFD) consortium and dialogue with stakeholders.

Fuji Oil Europe will invest in a construction of a combined heat and power (CHP) or cogeneration installation with an electrical capacity of 1.56MW. This installation is also included in a pool of industrial installations that support the Belgian electricity grid. This completely new CHP produces decentralised electricity, heat (in the form of hot water), and high-pressure steam. Whereas the output of the CHP in the industry is not always optimally usable, the customised solution in this case leads to an efficiency of no less than 90%. Mr Van den Bremen continues, "This investment fits seamlessly within Fuji Oil's high sustainability ambitions. With the realisation of this project, we expect savings of 17% on our primary energy consumption and a reduction of our CO₂ emissions of 9%. Even with the expansion of our new chocolate line, up to 91% of our electricity consumption will still be covered.

The CHP will connect to our existing heat recovery network, fill in the current shortage, and make it possible to switch even more consumers in our factory from steam to hot water. In the long term, if we make these extra investments, we aim for a 15% reduction in our CO2 emissions."

Daughter company: Fuji Oil Ghana

Fuji Oil Ghana is an important supplier for Fuji Oil Europe in Ghent. Mr Van den Bremen states, "Shea butter is an important component for, amongst others, our cocoa butter equivalents



SOLAR PANELS ON THE ROOF OF THE PLANT.

(CBE.). Moreover, we also play an important role within the local community in Ghana."

A new warehouse for shea kernels was officially opened in Wapuli, Ghana in 2019. This warehouse, sponsored by Fuji Oil Europe and constructed by the Global Shea Alliance, can contain up to 100MT of shea kernels. The training that the Global Shea Alliance (GSA) has been providing over the past years on the collection, selection, and preparation of shea nuts can now be put into practice. This new warehouse will improve the lives and businesses of hundreds of women that will collect the shea nuts in this area.

I. FUJIOILEUROPE.COM





New mobile harbour cranes for Stukwerkers

On 3 June, the last two cranes of a total order of three were delivered at the Stukwerkers' quay in Ghent.

Both Italgru cranes were loaded onto a specialised heavy-lift vessel at Port of Marghera, Venice, in a virtually ready-to-operate state, which meant they could be taken into operation within ten days after their arrival on the quayside in Ghent. On Friday, 12 June, the cranes' first loading tests onto a vessel were completed.

Including the three recent additions, Stukwerkers now has a total of eight mobile cable harbour cranes that are multipurpose and can be used for all commodities, from dry bulk to containers to breakbulk and project cargo. The new cranes have a 140t lifting capacity and can lift up to 40t over a 54m distance.

Deployable on all quays

The Italgru cranes themselves weigh 520t and have a 40m high tower, while their width has been kept to the minimum. Despite their substantial measurements, a lot of attention went into keeping the cranes' construction as compact as possible. Mutual exchange and deployability are important in the maritime world's variable settings, so the cranes at Stukwerkers need to be compact enough to move on the public roads within the port area to be deployable on all of their quays.

While commonly used in solo-lift, the harbour cranes can also be deployed in duo-lift for larger or more substantial pieces of cargo. The new cranes were ordered to keep up with growing demand at Stukwerkers, but primarily to uphold the quality of their services to customers.

I. STUKWERKERS.COM



Operators and contractors today have all 'hands on deck' to meet with the growing need for offshore wind technicians. Often, they look for assistance from recruitment agencies. Atlas Professionals is one of those recruitment companies. The company also has an office in Vlissingen since 2018. PortNews talks with Joost Pellis, Atlas Professionals' Strategic Manager Renewables.



Atlas Professionals was founded in 1982 and the company has since grown into an internationally operating HR service provider in the energy, marine and renewables industries. Its mission is to become the number one choice for clients, both for companies and professionals, by being committed to providing a safe, reliable, competent, and happy workforce.

"As a recruitment and HR services company," Mr Pellis says, "we operate in the maritime, oil & gas, and wind energy industry. For each segment we have a dedicated unit, however, as the

segments have a lot in common, the three units work closely together and support each other with opportunities."

A global challenge

Qualified professionals are scarce, and this is a global challenge. It is also one of the reasons why Atlas Professionals has offices all over the world, from Russia to Brazil and from Norway to Singapore. "Our global reach enables us to seek and select the most talented local professionals worldwide to meet

RECRUITMENT, TRAINING & EDUCATION



SOON AFTER OPENING THE ATLAS VLISSINGEN OFFICE, THEY WERE ALSO ASKED TO SUPPORT COMPANIES IN ONSHORE WIND WITH RECRUITMENT & HR CHALLENGES.



HAVING AN OFFICE IN VLISSINGEN ENABLES ATLAS TO BE PRESENT ON A LOCAL LEVEL

the needs of our clients and their projects", comments Mr Pellis. "As such, we made the decision in 2018 to establish our office in the province of Zeeland close to the port of Vlissingen. A lot is going on in the offshore wind industry in and around the port. Relatively close to Vlissingen, large offshore windfarms are constructed both in Belgian and Dutch coastal waters and at North Sea Port various companies are assisting the industry with logistics, construction, maintenance, and marine services. Many of those activities demand skilled and experienced professionals on all levels, giving us ample opportunities." He continues, "Our focus has always been on offshore, but soon after the opening of our Vlissingen office we were also asked to

support companies in onshore wind with their recruitment & HR challenges. Together with our offices in Hoofddorp and the UK, we are now servicing the onshore and offshore windfarms in Netherlands, Belgium, UK, and more recently, Germany too."

Loyal and dedicated

Having an office in Vlissingen enables Atlas to be present on a local level, which according to Mr Pellis is one of the reasons for the company's success. "Finding the right people for the right job is an intensive process", he voices. "It is important to know the exact competences and ambitions of our candidates on the one hand and then on the other hand, for the best matchmaking, we also need to have an in-depth understanding of the companies we work with, the job specifics, and the team set-up, combined with the companies' values and strategy. Interviewing both candidates and companies is thus essential. For a successful match, we need to know if the job fits the candidate and vice versa. To do so, we think it is crucial to be located as closely as possible to both the companies that are looking for technicians, as well as the people that are seeking a job. Acting locally is the best way for us to stay in touch with the market." Mr Pellis continues, "Whether it is about permanent recruitment or a contract role, we consider each candidate as our representative towards our customers. When looking at Zeeland, we have learned that people are very loyal and dedicated. This is something we really like, as we believe that alongside technical skills, these kinds of soft skills are valuable, too."

Abundant jobs

"For our customers, we would like to be the partner that delivers highly-qualified personnel. To do so, we create custommade and comprehensive HR solutions. We are convinced that sharing knowledge is key in meeting the many challenges in our industry to come", Mr Pellis explains. For Atlas Professionals, this sharing starts with providing a large amount of relevant digital content through websites and social media channels. "In the case of wind energy, it is important to tell the audience what the industry entails", he voices. "Wind energy is not only a matter of a turbine generating energy, it is a complete supply chain with various roles and responsibilities asking for a broad range of competences. North Sea Port is an excellent example of this, with so many companies in and around the port operating both in and for the wind industry. It is evident that the industry generates abundant jobs, both now and in the near future. The more we tell and explain to people about this, the easier it will be for us to support our customers in fulfilling their demand for skilled professionals."

Cross-border collaboration

Next to providing digital content, the company is, among other things, also partnering in lots of events. Mr Pellis explains, "With DOB-Academy, we organised so-called Wind Experience Days and this year we started the Renewables Roadshow, together with DOB-Academy. We also visited Zeeland with these events, which are both targeted towards young people that are about to choose an education or that have just graduated and are seeking a job." Looking at young people and education, Zeeland has plenty to offer, according to Mr Pellis. "In Zeeland, education and training are offered on various levels. Scalda has courses for wind technicians and HZ University of Applied Sciences is a frontrunner when looking at a more scientific level of research and education," he explains. "The way things are





Whether it is about permanent recruitment or a contract role, we consider each candidate as our representative towards our customers.

> going on in and around North Sea Port all fit very well within our belief that sharing knowledge will always lead to positive results. In Zeeland we communicate with the entire offshore industry, with relevant educational institutes and their students, and for this purpose we often seek collaboration. The extensive cross-border collaboration is, also on an educational level, what makes the region unique."

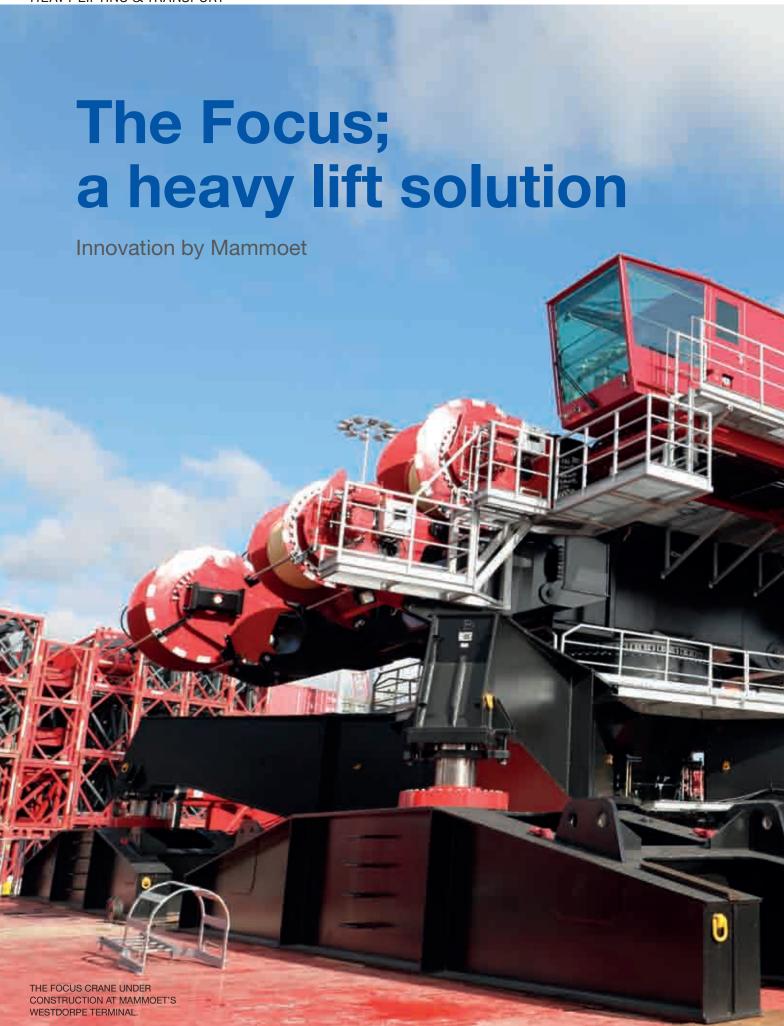
Operating in Zeeland gives Mr Pellis an excellent view on the strengths of the North Sea Port area. "Apart from the offshore track record of the port in the field of O&G, renewables and decommissioning, the port could also become a frontrunner in hydrogen with the many initiatives taken so far. With HZ and Scalda, the extensive process industry, the full attention of the port authority, and with a location close to the North Sea offshore windfarms, the development of a large-scale hydrogen plant is a realistic future vision," he states. "Looking at renewables, competition is fierce with many other regions developing offshore wind activities. North Sea Port still has a strong position as a hub for offshore wind and should remain alert in keeping this leading role. To do so, they should look



RELATIVELY CLOSE TO VLISSINGEN, LARGE OFFSHORE WINDFARMS ARE CONSTRUCTED BOTH IN BELGIAN AND DUTCH COASTAL WATERS SUCH AS THE BORSSELE 3 & 4 OFFSHORE WINDFARM.

further than the Dutch offshore windfarms. North Sea Port can also act as a hub for windfarms further away. Proof of this was the recent role that the port played in the transport of TPs to Asia. The port and its surroundings have excellent facilities, knowledge, and expertise to stay ahead", he concludes.

I. ATLASPROFESSIONALS.COM





Mammoet provides solutions to any heavy lifting or transport challenges. The company ensures that customers are serviced with the best equipment and personnel options available.

The experienced team at Mammoet loves to seek solutions for the challenges experienced by their customers. Sometimes the answer is simple, and the equipment ready-to-go. Other times they will create a tailormade result together with their client. Today, they do just that by building the latest and greatest, the Focus crane.

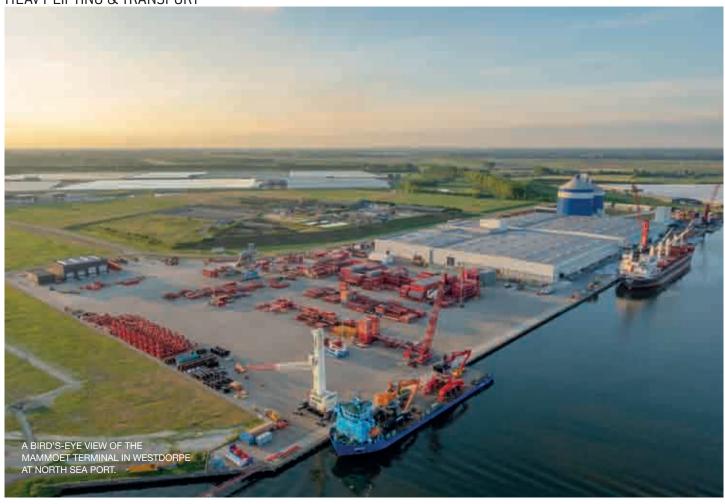
Solution-oriented

The Focus crane is not the first crane designed by Mammoet to solve a customer problem. Mammoet Terminal & Branch Manager Marlon Roels (Branch Terneuzen) explains, "Take the PTC crane, for example. The PTC can handle large weights at great distances and up to great heights. It can lift up to a height of 240m. The crane without jib lifts up to a height of 140m, with a maximum 3,200Mton lifting capacity."

The MTC15 is another example of problem-solving. This crane can be built anywhere, for example on a riverbed where a barge sails. This crane functions as a harbour crane in areas where there are no large seaports. Mr Roels continues, "What you normally see in the logistics chain is that a 400t transformer is shipped from the place where it was built to where it will be put to use. At the first major seaport near the final destination, the freighter will dock, and the transformer will have to travel perhaps 1,000km by road to the installation site. The disadvantage is that the transformer is very large and very heavy, so if it has to cross bridges and it is too heavy, bridges must be strengthened. Or maybe the bridge is not wide or high enough, so a new bridge has to be built. That costs a lot of money and time, not to mention risk and safety issues. Our MTC15 solves this problem by reducing the travel distance over land to a few kilometres."



HEAVY LIFTING & TRANSPORT



The Focus

Mammoet is now building the Focus crane. The main characteristic of this crane is that it has an enormous lifting capacity. What makes it unique is that the crane can be built on a relatively small surface. Mr Roels adds, "The world is urbanising. Many people live and work in a small area. This means that the available workspace becomes smaller whilst at the same time, the request to lift large weights is increasing. Conventional cranes have to be built with the boom horizontally. In an urban area or near a petrochemical plant, this space is often no longer available. Which is why the company is developing a crane that can be built vertically."

The Focus has a footprint of 35m by 35m, including mounting space, and ultimately just 22m by 22m is required as working space for the crane. Mr Roels elaborates, "The crane's undercarriage will have boom sections that are 12m long. These are placed vertically in the construction and pushed up

THE FOCUS CRANE
CAN LIFT OVER 100M
IN HEIGHT AND UP TO
1,000T.

one by one under the already installed boom. This gives you an increasingly taller boom while you constantly add pieces of 12m at the bottom. This allows us to build up to a 96m boom and we add 16m of Jib. We can lift over 100m in height and up to 1,000t." "When you translate that into society, you are talking about hoisting a reactor of a nuclear power plant or parts of a petrochemical plant. This means much less work on site. Think about shutting down a petrochemical plant for a day. That may cost one million euros per day. If you can reduce the shutdown period by two, three or four weeks, it will save a lot of costs for the customer. The Focus crane, which is initially somewhat more expensive than existing cranes, is then very easily recouped. That is the principle of the Focus."

Mammoet today

The Mammoet terminal is located alongside the Ghent-Terneuzen Canal. They have the draft to accommodate large ships over 12m water depths, with a 300m quay and 10ha of storage and pre-assembly space. All kinds of projects are constructed at the terminal. At the moment a large installation for a customer is being built that weighs more than 400t. Simultaneously, they are assembling a number of plug & play cranes, and of course working on the Focus crane and other innovative Mammoet developments. Mr Roels concludes "We want to build large objects here together with the customer. We have all the inhouse equipment and expertise available. We also offer great indoor and outdoor storage space and can transship all sorts of products, be it containers, project cargo or dry bulk. We are a multipurpose terminal with a specialisation in heavy lift projects."

I. MAMMOET.COM





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BTZ Commodities storage of scrap, steel, and semi-finished products





Ghent Logistic Campus off to flying start

Herentals-based logistics real estate developer and investor Heylen Warehouses has recently commenced construction on its largest project in Belgium to date: Ghent Logistic Campus at North Sea Port. This will see the company off to a flying start.

With Ghent Logistic Campus, located in the port of Ghent, North Sea Port, Heylen Warehouses is building a logistics site covering 250,000m² and creating 500 additional jobs in the region. Despite the coronavirus measures and the accompanying lockdown, Heylen Warehouses has commenced the planned works on its new logistics site. The green light came on 12 June with the signing of the concession agreement to develop the large-scale logistics project and in the following months, the construction of the logistic site took off.

Investing in logistics and E-commerce

With this new location, Heylen Warehouses is investing in the promising future of logistics and E-commerce, in which the





HEYLEN WAREHOUSES GUARANTEES LEADING WAREHOUSE FACILITIES THAT ARE ALWAYS BUILT WITH AN EYE ON THE FUTURE, ALSO WITH REGARD TO SUSTAINABILITY.



IN FRONT OF THE PORT HOUSE IN GHENT AFTER SIGNING THE CONCESSION AGREEMENT ON 12 JUNE, FROM LEFT TO RIGHT: RALPH CASPANNI (CEO OF HEYLEN WAREHOUSES), DAVID BATENS (BUSINESS DEVELOPMENT MANAGER AT HEYLEN WAREHOUSES), DAAN SCHALCK (CEO OF NORTH SEA PORT), PHILIPPE DESCHILDER (CEO OF HEYLEN WAREHOUSES), WIM HEYLEN (CHAIRMAN OF HEYLEN WAREHOUSES), AND FRED BAERT (POLICY ADVISOR COMMERCIAL AFFAIRS AT NORTH SEA PORT).

importance of a shortened supply chain is increasing all the time. "Speed, certainty, and shorter delivery times are more important than ever. We are certainly seeing this now, in this time of COVID-19 in which E-commerce and online shopping have received a huge boost. E-commerce has proven to be an important part of the vital infrastructure. Distance to consumer, immediate availability, and the size of product stocks play an important role. Products need to be delivered quickly and efficiently from existing stock", says Ralph Caspanni, CEO of Heylen Warehouses.

Closer to home

This reveals that the need for more storage space 'closer to home' is increasing. Mr Caspanni continues, "Production and assembly processes are made up of complex chains of suppliers. They each have to deliver their products to their end customers just-in-time and with minimum stocks on a global scale. The coronavirus has shown us how vulnerable these chains can be when logistics falter. By providing more strategically-located storage spaces 'closer to home', we can shorten delivery times and make ourselves less dependent on the individual links. For this reason, Ghent Logistic Campus was looking for a multi-modal location, somewhere that is easy to reach and where we can guarantee that large volumes of products can be shipped to and from. We found this location in North Sea Port at the Rieme-Noord business park."

500 additional jobs in the region

The arrival of the new logistics warehouse will create a lot of job opportunities. "With fourteen units, Ghent Logistic Campus provides logistics space as well as offices for various companies. Naturally, the arrival of those companies will also bring employment opportunities. The site has the potential to create about 500 extra jobs in the Ghent region. In a time of crisis and uncertainty like this, we can be proud of that", voices Philippe Deschilder, CEO of Heylen Warehouses.

Accessible multi-modal logistics campus

Located in the Ghent part of North Sea Port, occupying a central position in the North-West of Europe, the Ghent Logistic Campus offers the ideal location for fast and smooth transport





AT GHENT LOGISTIC CAMPUS FOURTEEN UNITS WILL BE CONSTRUCTED.

by sea, but also by road and rail. The warehouse is located at the intersection of all major motorways (E17, E40, E34 and R4) and there is a railway connection to Europe and China. With a location almost in the middle of North Sea Port's 60 km long cross-border port zone, Ghent Logistic Campus offers unique options for transport by inland waterways and guarantees a fast overseas connection with the United Kingdom and the Scandinavian countries.

Commitment to sustainability

The demand for sustainable logistics warehouses is increasing. In response to this, Heylen Warehouses guarantees leading



With fourteen units, Ghent Logistic Campus provides logistics space as well as offices for various companies.

warehouse facilities that are always built with an eye on the future. To this end, its warehouses are equipped with SMART technology and numerous sensors that monitor energy consumption and generate alerts in the event of abnormal consumption, allowing these parameters to be adjusted and optimised in real time. As a result, tenants get their operational costs under control and we achieve a more efficient and sustainable building and consequently, more sustainable operations. This makes Heylen's buildings state-of-the art and future-proof. In addition, all buildings are awarded the 'Excellent' BREEAM certificate.

Enhancing E-commerce in North Sea Port

"Even in this time of coronavirus, we are demonstrating that, with approximately 1,000ha of space to invest and extensive multimodal connections by sea and inland, North Sea Port is an attractive place to invest and create hundreds of jobs", comments Daan Schalck, CEO of North Sea Port. "As port authority, we are proud that Heylen Warehouses, with their origin in the Antwerp region, have recognised the opportunities of North Sea Port and decided to invest in our port. And we are keen to further develop E-commerce and sustainable warehousing in the port in partnership with them."

I. WWW.HEYLENWAREHOUSES.COM

New tests for degassing barges at North Sea Port successful

Degassing a vessel while sailing along inland waterways is bad for air quality, for the health of local residents, and for people who work with these substances. Since 2015, several Dutch provinces, including Zeeland, have already introduced bans on the degassing of benzene and substances containing benzene.

The industry has achieved a significant reduction in emissions in recent years by introducing dedicated and compatible sailing, eliminating the need for degassing. However, this is not in itself sufficient to completely avoid degassing. In 2020, the prohibitions will therefore be gradually extended to a national ban that will reduce emissions of these harmful substances by 98%. To enable inland tankers to process residual vapours safely and in a controlled manner with a newly developed installation, different types of vapour processing installations are tested in the ports of North Sea Port, Rotterdam, and

Amsterdam. The first successful test took place in Vlissingen at North Sea Port earlier this year.

Cooperation in North Sea Port and Zeeland

The aim of the series of tests is to achieve cleaner air along the waterways with the help of innovative technologies. The test at North Sea Port went well. The functioning of the equipment was monitored throughout the testing procedure by an independent agency that will determine which installations meet the strictest requirements and where improvements are needed. The results of the trials will be evaluated by the 'Degassing while sailing taskforce', which will then advise the responsible minister on the further construction of the infrastructure. The test in Zeeland was supported by Shell Chemicals Europe. The site in Vlissingen was provided by North Sea Port as part of its aim of achieving a more sustainable port. The province of Zeeland supports the project. Zeeland also currently holds the chairmanship of the national 'Degassing while sailing taskforce'. GreenPoint Maritime Services supplies the vapour processing installation used in the various tests.

I. NORTHSEAPORT.COM



THE START OF THE TEST IN THE PORT OF VLISSINGEN WAS WITNESSED BY REPRESENTATIVES OF THE PROJECT PARTNERS.

From left to right: **Hans van de Kooij**, Project Leader Degassing Tests of the Degassing while sailing taskforce; **Marc Freriks**, Managing Director of Greenpoint; **Suzanne Roodenberg**, Regional Marine Manager EU/AF Shell; **Dick van der Velde**, Deputy of the Province of Zeeland and chair of the Degassing while sailing taskforce; **Daan Schalck**, CEO of North Sea Port.

Preparing for take-off

Zeeland Airport takes flight



The construction start of windfarms
Borssele I & II has sparked a rise in
helicopter access demand to facilitate
crew transfers to offshore construction
vessels. Now that the first two windfarms
are nearing completion, the O&M phase will
commence, requiring additional transfers
for wind technicians.

Until recently, Zeeland Airport had authorisation for 800 helicopter movements (landings or take-offs) annually. To facilitate the offshore wind industry for years to come, the airport has expanded its helicopter license (which is granted by the Provincial Council of Zeeland) to 4,000 movements per year. With the helicopter movements for offshore wind currently averaging between two and ten per week, Enno Belderok, Director of Zeeland Airport, does not expect to approach these maximum numbers. "We mostly requested such a high number of permits to prevent experiencing scarcity in the future," he says.

In exchange for the 3,200 additional helicopter flights, the airport has handed in an equal amount of permits for airplane movements. Not a difficult thing to do, according to Mr Belderok, since the airport's license allowed more than 45,000 airplane movements in 2019. "The airport still has plenty of room to grow. 2019 was a great, busy year, totalling 28,000 take-offs and landings," states Mr Belderok, demonstrating that the airport operates well within its limits.

Due to the COVID-19 crisis, Mr Belderok does not expect to exceed the 2019 figures in 2020. He estimates the amount of aerial movements to total approximately 25,000. Luckily, personnel transfers to the offshore windparks by helicopter continued throughout the lockdown, giving the airport some stable business while private planes and aviation sport clubs remained on the ground. In the coming period, he expects ten to fifteen helicopter movements per week.

No helipad needed

Contradictory to what has been reported in local media, the airport is not constructing a specific helipad for the helicopters to take off from, stresses Mr Belderok: "The reason we picked a specific spot was purely for planning purposes; we needed coordinates in order to calculate flying time, routes, and flying distance to and from the windfarms," he says. "When you move a helicopter from the hanger, you are obviously not going to first fly it to a specific point on the runway, put it down, and then commence take-off. Similarly to airplanes, helicopters take off more easily when they have forward velocity. They generally use about 100 metres of runway while taking off," explains Mr Belderok.

Moving the runway

Due to recent events at the neighbouring holiday park Witte Raaf, which is being redeveloped and expanded, the angle of Zeeland Airport's runway will be diverted. To avoid causing noise nuisance, airplanes taking off presently have to turn directly after take-off in order to steer clear of the holiday park. The airport has worked out a plan to move the direction of the runway 20 degrees to the south, allowing airplanes to fly on

in a straight line. As soon as Driestar, the new owner of the holiday park, receives formal approval for its project design, Mr Belderok will set the license application for the runway rerouting in motion.

Moving the runway will not remain without consequences for Zeeland Airport; as a result, the airport's terrain will double. "That's not a bad thing per se, but it does mean we have a lot more mowing to do," says Mr Belderok with a grin. Mowing might not be the first thing that comes to mind when thinking of an airport. However, Mr Belderok takes pride in his 'green' runway. The grass-based runway at Zeeland Airport facilitates old types of planes that are unable to land on concrete. "Small planes and helicopters are being marginalised everywhere in the Netherlands. They don't make enough profit, so ever fewer spots remain for them to land and take off from," states Mr Belderok. He is determined to keep the focus of his airport on private pleasure-flying and aerial sports. "Our expertise lies in facilitating small aircrafts and helicopters. That is our main strength."

Aviation enthusiast

It is not just the current hustle and bustle at the airport that demonstrates that the airport is faring well; the annual figures do, too. When Mr Belderok started at Zeeland Airport over twenty years ago, the airport was regularly in the red. In comparison, Zeeland Airport's turnover in 2019 was 1.3 million Euros. The COVID-19 crisis will certainly have an impact on this year's revenue, but at the moment it looks like it's turning out better than expected, according to Mr Belderok. Spring was poor, but the airport experienced its busiest July ever. Mr Belderok leads the airport from a position of hands-on expertise. A fervent pilot himself, Mr Belderok knows exactly what a pilot hopes to find upon landing. "Pilots generally just want to step out of their plane, stretch their legs, fill up their tanks, and have a nice meal," he sums up. "Nothing too fancy, just good service and a pleasant restaurant. That's just what we provide."

Mr Belderok credits the services mentioned above as the main reason for Dutch police regularly taking a detour via Zeeland Airport when returning their helicopters to Schiphol, and for having the coast guard and Marechaussee (Military Police) as



MR BELDEROK EXPECTS TEN TO FIFTEEN OFFSHORE-RELATED HELICOPTER MOVEMENTS PER WEEK IN THE COMING TIME.

frequent visitors as well.

Despite his passion for pleasure crafts, Zeeland Airport has taken considerable professionalisation steps under Mr Belderok's guidance. Following a course of steady growth, different elements of the business have been upgraded and modernised. The restaurant has been refurbished (by Mr Belderok's other business, a hardware and furniture store in Oostburg), followed by an overhaul of the airport's hangar. As for the next step, Mr Belderok has some



ENNO BELDEROK, DIRECTOR OF ZEELAND AIRPORT.

A new heart for the airport

ambitious expansion plans.

The increase in terrain provides Zeeland Airport with an opportunity to erect some additional buildings. "In the approved development plan, we have nearly a hectare to build on. However, we do not intend to fill up all that land immediately," clarifies Mr Belderok.

One building will definitely be built. In a few years' time, Zeeland Airport will proudly feature a new conference building. The new meetings facility will be built next to the kiosk (an annex of restaurant Midden-Zeeland, which was recently erected to make it easier for visitors to adhere to COVID-19 regulations). The conference building will have the same dimensions as the one incorporating restaurant Midden-Zeeland and the airport's traffic centre. "The conference hall will become the new heart of the airport," predicts Mr Belderok. "We will also re-route the access road to the airport, which will run between the new conference building and the building housing Peterson and Sky Pictures."

Another attraction

Directly adjacent to the conference hall, several buildings will be constructed for third parties that are active at the airport, such as the parachutists club. "By giving them a centre stage building, we enable them to land within sight from restaurant visitors, thus providing another attraction for our customers," explains Mr Belderok.

In the meantime, Mr Belderok is determined to attract a professional flying school to the airport. "We have an excellent amateur club that provides flight training, but the professional counterpart is missing. If we manage to attract a good flight training partner, it will bring more pilots to our airport, which will boost the amount of flight movements. That way, we can enhance one another," he concludes.

The airport is also in contact with several other parties interested in a new or expanded hangar, but Mr Belderok has a specific target group in mind. "I would much rather prefer to build for parties seeking a spot for their airplanes to actually fly from regularly, not to merely store planes year-round," he states. To prevent the new-to-be-built hangars from only being used as airplane storage space, a structured plan has been drawn up. The development plan also requires the activities in the new buildings to be aviation-related.

The official application for the airport's extension has been handed in and the plan is ready to go. The construction start is expected in 2021.

Nuyina arrives at Vlissingen

Australia's new and nearly completed icebreaker Nuyina, built at Damen's Galati shipyard in Romania, arrived at Damen Naval Shipyard in Vlissingen on 28 August for final commissioning and sea trials.

The propulsion, electrical and navigation systems will, among other things, be fully commissioned and prepared for operation at the company's yard in Vlissingen-Oost (North Sea Port).

The Nuyina is an advanced 16,300t icebreaker, with a reinforced steel hull designed to break 1.65m thick ice. It will replace the current research vessel with icebreaking capabilities, the Aurora Australis of the Australian Antarctic Division. Recruiting company Oceanwide will provide the crew of 31 for the vessel's sea trials. The captain and his team of six officers are already present in Vlissingen. The team has already been involved in an advisory role for the project from the earliest stage of construction.

Officers must have polar experience and capabilities to be allowed to sail a vessel like the Nuvina. With a long year and extensive appearance in the market, as well as a comprehensive database of international personnel of varying



skill levels and various nationalities, Oceanwide is highly capable of providing crews with all of these specific, unique capabilities.

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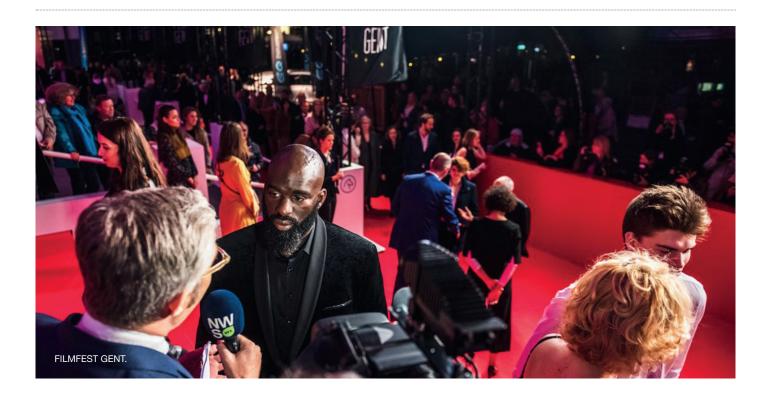












North Sea Port proud event sponsor

North Sea Port will be the proud sponsor of various events in the region. The international character and being operational along both sides of the Belgian-Dutch border unite the Port Authority and cultural organisations.

For years, North Sea Port has been supporting many initiatives, including cultural ones, and the Port Authority recently announced that it will continue cultural support with four new main sponsorships. It, will hence be actively supporting six cultural and societal events on both sides of the border. The events include the Festival van Zeeuwsch-Vlaanderen, Filmfest Gent, Four Freedom Awards, Gent Festival van Vlaanderen, Gent Jazz, and the Zeeland Nazomerfestival.

Culture connects cross-border

North Sea Port has chosen these partners and events to strengthen the cross-border interconnectedness between port, companies, region, and social life. "Together, we invest as partners in an attractive living and working environment", comments Jan Lagasse, CEO of North Sea Port. "Just like our port, the initiatives we have chosen to support form an international junction for dialogue, creativity, and entrepreneurship." North Sea Port will commit itself to the events for a period of three years. "This commitment gives the organisations trust and longer-term support. The current corona situation shows that this is now relevant more than ever", Mr Lagasse continues. "The cross-fertilisation between tradition and innovation, between novices and old hands, and the connecting power of culture and dialogue, all perfectly fit with our motto Together.Smarter", Mr Lagasse concludes.

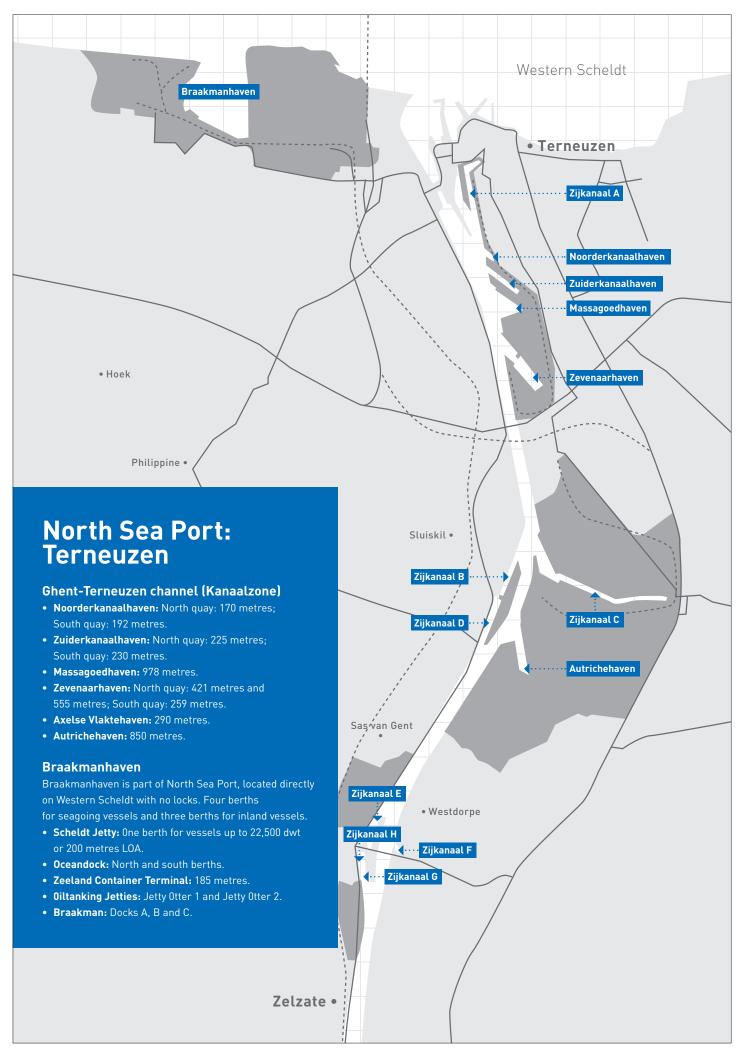
2020 - 2021, corona-proof

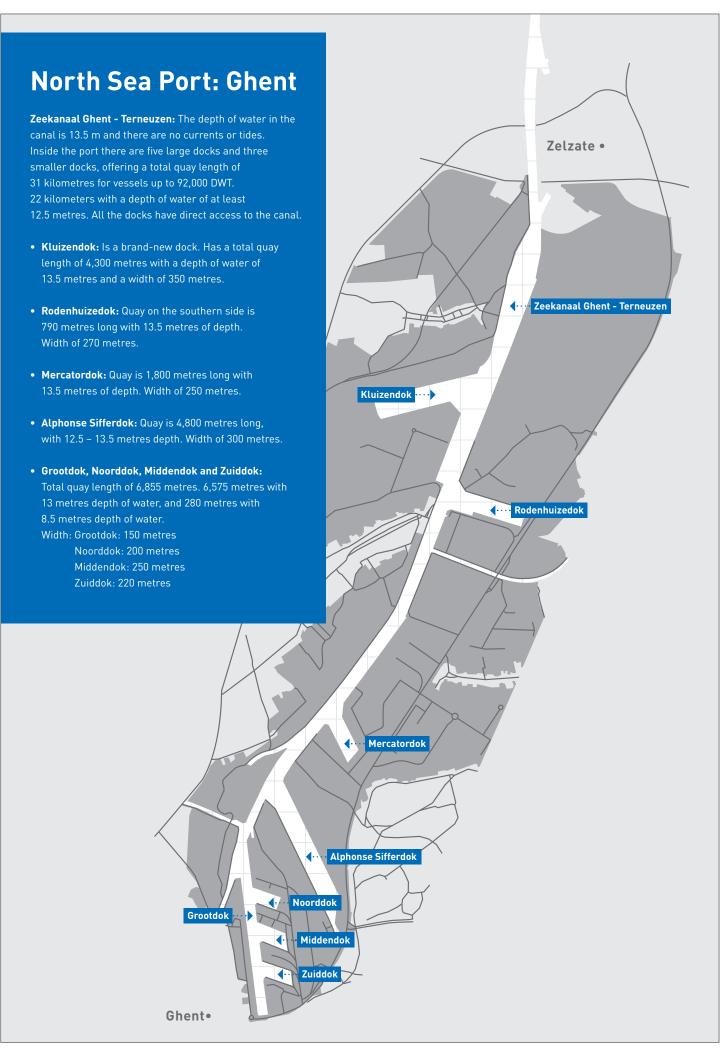
The COVID-19 crisis forces the cultural sector to organise things differently for the upcoming season. Please visit the websites for more information about the events:

- Festival van Zeeuwsch-Vlaanderen: www.festival-zvl.nl.
- Filmfest Gent: www.filmfestival.be.
- Four Freedom Awards: www.fourfreedoms.nl.
- Gent Jazz: www.gentjazz.com.
- Gent Festival van Vlaanderen: www.gentfestival.be.
- Zeeland Nazomer Festival: www.theaterzeelandia.nl.









The Promotion Council North Sea Port is pleased to welcome new participants. Founded in 1993, the Promotion Council North Sea Port represents the majority of companies located in the port of Vlissingen and Terneuzen. Together they offer a complete range of the best possible port facilities and all the logistics solutions you need. See pages 60-63 for a complete list of participants.

→ OMC SERVICES



OMC Services, producer of PortNews magazine, provides all-round marketing communication and management support. Charles van den Oosterkamp, director of OMC Services, uses his 35-year experience in the field of publishing, marketing, and management to help you achieve your strategic business goals. Whether it is by

writing press releases and articles, producing brochures or corporate magazines, website content or (digital) newsletters, OMC Services can help you develop your business and can also support you in the field of (sales) management and administration.

CONTACT: INFO@OMC-SERVICES.COM

→ WAGENBORG AGENCIES BV



Founded in 1898, Royal Wagenborg is an international maritime logistics conglomerate. The family-owned and managed company provide a large variety of maritime services, including offshore, towage, agency, and maritime management services. Wagenborg is a total solution provider in dry cargo shipping, offshore services, port assistance, warehousing and transshipment, crane rental, and special/heavy transport.

Headquartered in Delfzijl, Wagenborg has built a strong global commercial network and employs over 3,000 people.

Wagenborg Terneuzen – With four RORO carriers, Wagenborg operates a weekly RORO liner service between the ports of Haraholmen (Piteå), Bremen, Sheerness, Terneuzen, Cuxhaven, and Södertälje. Bookings for this liner service, both northbound and southbound, are managed from the Terneuzen office. In addition, Wagenborg acts as liner agent as well as shipping agent for the ports of Terneuzen and Vlissingen.

I. WAGENBORG.COM

→ WESTERSCHELDE FERRY



Get a breath of fresh air on the water. Head in the wind, sun on your face. The Westerschelde Ferry crosses one of the world's busiest shipping lanes. Enjoy the view of large sea-going vessels passing closely on their way to Vlissingen, the Ghent-Terneuzen channel, and the port of Antwerp or heading the other way, out to sea. A great experience for all ages.

Westerschelde Ferry provides ferry services

from Vlissingen to Breskens and vice versa on board of its two ferries, Prins Willem-Alexander and Prinses Máxima. Crossing the Westerschelde by ferry takes 25 minutes. The Westerschelde Ferry is a tourist attraction and public transport service combined.

I. WESTERSCHELDEFERRY.NL



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	Access World (Vlissingen) B.V.	www.accessworld.com							
	A.C. Rijnberg transportservice B.V.	www.rijnberg.com				•			
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	Bulk Terminal Zeeland Services B.V.	www.btzeeland.nl		•		•			
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С	Cordeel Nederland B.V.	www.cordeel.nl	•						
	C-Port B.V.	www.c-port.nl							
	C.Ro Ports Nederland B.V.	www.croports.com							
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	DB Cargo Nederland N.V.	www.nldb.cargo.com							
	De Baerdemaecker NV	www.stukwerkers.com							
	De Pooter Personeelsdiensten	www.depooter.nl							
	De Ruyter Training & Consultancy	www.drtc.nl							•
	De Zeeuwse Alliantie Notarissen	www.dezeeuwsealliantie.nl							
	Delta Coastal Services B.V.	www.deltacoastalservices.nl		•					
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	Dex Premium Lubricants	www.dex-oil.com	•						
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	DOW Benelux B.V.	www.dow.com	•						
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Flushing Marine & Offshore B.V.	www.flushingmo.com							
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Golden Tulip L'Escaut	www.hotel-lescaut.nl						-	
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ING Business Banking	www.ing.nl/zakelijk						-	
Interface Terminal Gent (ITG)	www.stukwerkers.com				-		•	
Interlashing B.V.	www.interlashing.com						-	
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JB Nautic Safety B.V.	www.jbnauticsafety.nl							
Justion Advocaten	www.justionadvocaten.nl						-	
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KWS Infra/Aquavia	www.kws.nl	_						
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Lalemant N.V., Lalemant Trucking N.V.	www.lalemant.com							
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	www.legrant.eu				-			
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Mammoet Nederland B.V.	www.mammoet.com	-						
Maritiem & Logistiek College de Ruyter	www.scalda.nl		_					
Maritime Support Vlissingen	www.msvlissingen.nl				_		-	
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Municipality of Middelburg	www.middelburg.nl							
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Municipality of Vlissingen	www.vlissingen.nl							
North Sea Port	www.northseaport.com	•	•	•				
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U	OMC Services B.V.	www.linkedin.com/in/chvdo							
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	Outokumpu Stainless B.V.	www.outokumpu.com	•			•			
	Ovet B.V.	www.ovet.nl				•		•	
	Ovet Shipping B.V.	www.ovetshipping.com				•			
Р	Pfauth Logistics B.V.	www.pfauth.nl				-			
Г	PMI Polaris Marine Inspections B.V.	www.polarismarineinspections.nl				•			
	Prior Group	www.priorgroup.nl							
	PTC B.A.	www.ptcba.nl				-			
D	Rabobank Oosterschelde	www.rabobank.nl/oosterschelde						•	
R	Rabobank Walcheren-Noord Beveland	www.rabobank.nl/wnb						•	
	Rabobank Zeeuws-Vlaanderen	www.rabobank.nl							
	Royal HaskoningDHV Nederland B.V.	www.royalhaskoningdhv.com							
C	Sagro Aannemingsmij. Zeeland B.V.	www.sagro.nl				-			
S	Saybolt Nederland B.V.	www.corelab.com/rd/saybolt							
	Schipper Groep	www.schippergroep.nl							
	SDW Shipping	www.sdwshipping.com				-			
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	Secil Cement	www.secil.pt	•			-			
	SGS Nederland B.V.	www.sgs.com				•			
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	Sorteerbedrijf Vlissingen B.V.	www.sorteerbedrijfvlissingen.nl				-			
	SPIE Nederland B.V.	www.spie-nl.com							
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т	Tanido B.V. Sworn Marine Surveyors	www.tanido.com				•			
1	Terneuzen Powder Technologies B.V.	www.tpt.nl	•			-			
	T.I.M.E. Service Catalyst Handling BV	www.ts-cat.com							
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	TMS Terneuzen B.V.	www.tmsnl.com	-						
	Transuniverse Group N.V.	www.transuniverse.be				•			
	Tri-Modal Containerterminal Terneuzen	www.vlaeynatie.eu				•			
	Try-Act EWIV	www.try-act.eu						•	
	Van Ameyde Marine Vlissingen	www.ameydemarine.com				•		•	
V	Van Keulen Transport B.V.	www.vankeulentransport.nl				•			
	Verbrugge Internationale Wegtransporten B.V.	www.verbruggeinternational.com				•			
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Y

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MARITIME

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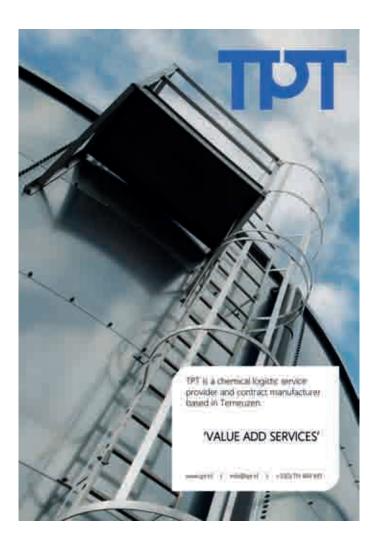
LOGISTICS SERVICES

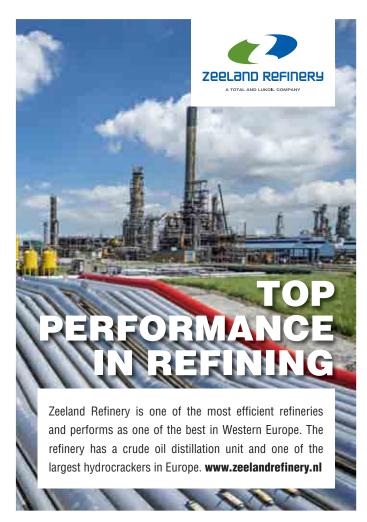
SUSTAINABLE INDUSTRY

OTHER SERVICES

EDUCATION AND GOVERNMENT

Verbrugge Terminals B.V.	www.verbruggeinternational.com					
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Vopak Agencies Terneuzen B.V.	www.vopakagencies.com			-		
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Yellow & Finch Publishers	www.ynfpublishers.com					
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PortNews

About PortNews

Covering the port area of North Sea Port, PortNews is the official publication of the Promotion Council North Sea Port and port authority North Sea Port.

Circulation and subscriptions

Distributed to a wide international audience, the high quality quarterly magazine promotes the activities of companies active in the ports to key customers, business partners, stakeholders, as well as at major international trade events.

PortNews is available in hard copy as well as a digital version. Each issue has approximately 10,000 readers.

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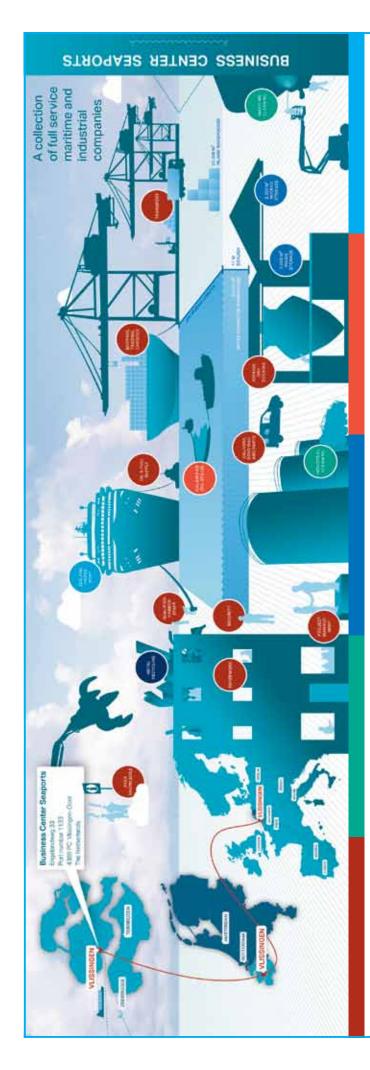
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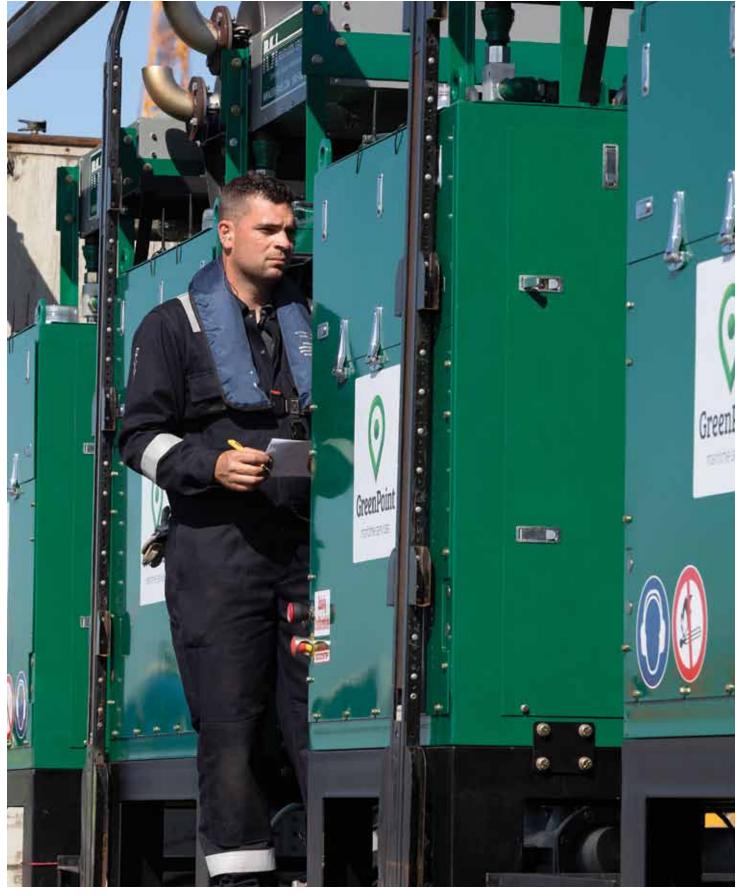
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