



NEW EMBLEM UNITES

# Dutch Pilots

NEW VISITORS TO THE REGION NORTH

THE BATTLE BETWEEN SALT AND FRESH

IN SEARCH OF THE PILOTS  
OF TOMORROW

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## COLOPHON

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## Dear reader,

It is with great pleasure that I present to you the 2022 edition of Navigator, our annual magazine aimed at informing you about topical developments in and relevant to the maritime sector in general and at the Dutch Maritime Pilots' Organisation in particular.

With the corona crisis still fresh in our minds, the past year was coloured by events that had a major impact on society, especially on those directly involved. Of course, I am referring to the war in Ukraine and the immeasurable human suffering this is causing.

Besides our obvious support for the people there, the crisis in Ukraine is also directly impacting our day-to-day operations. Since this autumn, large LNG tankers have been calling frequently in the northern Netherlands. As a result, the pilots in the North region are busier than ever. We have dedicated an entire article to this. In this edition of Navigator, we also focus on the new maritime cargo flows that will be heading our way in the coming decade. In search of clean energy sources, ports see the overseas import of green hydrogen as a great opportunity. Specialists from Rotterdam, Amsterdam and North Sea Port discuss their plans. Furthermore, Herman Broers, who took office as director of the supporting organisation Nederlands Loodswezen BV this year, explains how we are putting sustainability on the agenda ourselves as the Dutch Maritime Pilots' Organisation.

Another striking development in 2022 is the increasing shortage of personnel that is affecting many sectors of society. Fortunately, we are not yet experiencing a lack of interest in the course leading up to a master's degree in maritime pilotage at the moment. But what about ten years from now? That is why we are already focusing on the pilots of tomorrow right now. In contrast, our deepsea pilot colleagues, who assist ships in safely navigating the North Sea, are actually looking for experienced professionals who are keen to continue sailing for a few more years after retiring as a pilot or captain.

As you can see, this Navigator is jam-packed with a wide range of stories which we hope you find interesting. We of course very much welcome your feedback, both on this edition of Navigator and on our 24/7 service provision for safely and efficiently guiding ships in and out of the Dutch ports and the Flemish ports on the Scheldt. But for now, I want to wish you happy holidays and especially a healthy 2023!

Joost Mulder  
Chairman Dutch Pilots' Corporation



# NEW EMBLEM UNITES DUTCH PILOTS

THE DUTCH MARITIME PILOTS' ASSOCIATION (NEDERLANDSE LOODSENCORPORATIE - NLc) HAS A NEW EMBLEM, WHICH WAS OFFICIALLY AWARDED BY THE HIGH COUNCIL OF NOBILITY ON THE 19TH OF APRIL 2022. THE EMBLEM - ALSO REFERRED TO AS A COAT OF ARMS - SYMBOLIZES THE SOLIDARITY, COMMITMENT AND RELIABILITY THAT BONDS TOGETHER ALL REGISTERED PILOTS IN THE NETHERLANDS. NLC CHAIRMAN JOOST MULDER AND BOARD ADVISOR MARC TIJTHOFF EXPLAIN THE CONTEXT.

"THANKS TO GOOGLE, WE UNEXPECTEDLY BECAME AWARE THAT OUR OLD EMBLEM WAS UP FOR SALE."



**'A naval emblem can never be awarded to an organisation that is not or is no longer part of the armed forces'**



On behalf of the High Council of Nobility, Jonkheer De Savornin Lohman presented the new emblem to NLC chairman Joost Mulder on April 19, 2022.



Marc Tijthoff



**THE NEW EMBLEM OF THE DUTCH MARITIME PILOTS' ASSOCIATION (NEDERLANDSE LOODSENCORPORATIE - NLC)**

The description of the emblem of the NLC is as follows: "In a round shield of azure, two crossed anchors drawn in clear, strong lines are featured. At their intersection hangs a rope coming from the left shield edge, from which hangs a plumb line, all in silver; a shield edge of silver features LOODSWEZEN in Latin letters of azure. The shield is surrounded by two laurel branches of sinople and covered with a naval crown of gold. Emblem: NON DORMIT QUI CUSTODIT in Latin letters of silver on a ribbon of azure."

**'As the NLC, we explicitly wanted to stay as close as possible to the look and feel of the old emblem. We also wanted the connection with our own history and past to be reflected'**

By tradition, all government agencies and military units in the Netherlands have their own coat of arms or emblem. For every organisation, this is an important symbol for internally and externally propagating their own identity. As a professional body, the NLC has also had such an emblem for decades already; at least, that is what everyone thought. It was assumed that when the Dutch Maritime Pilots' Organisation gained autonomy in 1988, the emblem had been relocated automatically as well. Tijthoff: "This changed in June 2017, when I received a Google Alert that referred to the image bank of the Netherlands Institute for Military History. 'Our' emblem could be downloaded there for ten euros. In 2018, this was even possible free-of-charge."

**EXTENSIVE INVESTIGATION**

Following consultation within the NLC, Tijthoff conducted an extensive investigation, first to determine the status of the old emblem. After intensively consulting books and other documents, it became apparent that the emblem dated from 1974 and had been granted by the Dutch Minister of Defence to the *Dienst van het Loodswezen, betonning, bebakening en verlichting*, a predecessor of the NLC which at the time resided under the Royal Netherlands Navy. The current rightful owner was the Netherlands Institute of Military History, affiliated with the Navy. Tijthoff: "Our initial efforts were aimed at retaining our emblem. To this effect, we submitted a request to the High Council of Nobility."

In the Netherlands, the High Council of Nobility oversees the rules laid down by law for coats of arms and emblems and advises the government in this area. "Unfortunately, they declined our request. In a nutshell, their motivation for doing so was that Naval emblems are reserved for units of the Royal Netherlands Navy and can never be awarded to an organisation that is not or is no longer part of the armed forces."

**PROCEDURE FOR NEW EMBLEM**

At the same time, the High Council of Nobility did indicate though that it would be positive towards the NLC petitioning the Dutch King for a new, own emblem. After all, the autonomous Dutch Maritime Pilots' Organisation in its capacity as a public-law professional organisation is still a government service. Tijthoff: "That process was next set in motion." Several rounds of dialogue with the High Council of Nobility followed about the design of the new emblem. Mulder adds: "As the NLC, we explicitly wanted to stay as close as possible to the look and feel of the old emblem. We also wanted the connection with our own history and past to be reflected." The NLC chairman is specifically referring to the two crossed anchors with the plumb line. Not only did these prominently feature in the old emblem, but they were also depicted on the badges that were introduced in 1835 and that every licensed pilot was expected to carry back then.

**GRANTED BY ROYAL DECREE**

With a positive advice from the High Council of Nobility, the NLC ended up submitting an application to the King for their own new emblem. This was granted for eternity by Royal Decree on the 14th of December 2021 and then officially awarded on the 19th of April 2022. Mulder and Tijthoff are proud of the final outcome (see elsewhere on this page). Based on the description given, the coat of arms painter of the High Council of Nobility managed to create a graceful emblem which in addition to the two anchors with the plumb line also still features the motto of the old emblem: 'NON DORMIT QUI CUSTODIT', which translates as 'He who watches does not sleep'. The emblem also features the name 'LOODSWEZEN'. Tijthoff: "The realisation of the emblem was an exciting process in itself. As the NLC, we had no influence over what the coat of arms painter would produce in practice."

**OLD EMBLEM RETURNED**

As a sign of mutual solidarity, all Dutch pilots have been given a small shield with the new emblem. The emblem also adorns documents such as diplomas and is used on special occasions. Mulder: "We have officially returned the old emblem to the Commander of the Naval Forces, who has handed it over to the Naval Museum in Den Helder."

NEW VISITORS TO THE REGION NORTH

# Every LNG tanker safely in and out of Eemshaven

SINCE THE AUTUMN OF 2022, A TANKER CARRYING LNG (LIQUEFIED NATURAL GAS) HAS BEEN CALLING AT EEMSHAVEN IN THE NORTHEAST OF THE NETHERLANDS EVERY FOUR TO FIVE DAYS. THESE VISITORS, DESIGNATED BY THE AUTHORITIES AS 'EXTRAORDINARILY LARGE VESSELS', ADD A NEW DIMENSION TO THE WORK OF THE PILOTS IN THE REGION NORTH. CHAIRMAN AND ACTIVE PILOT EDWARD KILIAN DISCUSSES THE EXTENSIVE PREPARATIONS INVOLVED AND EXPLAINS THE DAY-TO-DAY PILOTAGE OF THESE SHIPS.

**FOR SAILING UP AND DOWN THE EMS, THE DUTCH AND GERMAN AUTHORITIES HAVE DESIGNATED LNG TANKERS AS EXCEPTIONALLY LARGE VESSELS, BOUND BY STRICT REQUIREMENTS**

## ‘We pilot LNG tankers with two people. One of us sails, the other takes care of the communication with the other seafarers, the tugs and the various authorities’

**SINCE THE AUTUMN OF 2022, A TANKER CARRYING LNG (LIQUEFIED NATURAL GAS) HAS BEEN CALLING AT EEMSHAVEN IN THE NORTHEAST OF THE NETHERLANDS EVERY FOUR TO FIVE DAYS. THESE VISITORS, DESIGNATED BY THE AUTHORITIES AS ‘EXTRAORDINARILY LARGE VESSELS’, ADD A NEW DIMENSION TO THE WORK OF THE PILOTS IN THE REGION NORTH. CHAIRMAN AND ACTIVE PILOT EDWARD KILIAN DISCUSSES THE EXTENSIVE PREPARATIONS INVOLVED AND EXPLAINS THE DAY-TO-DAY PILOTAGE OF THESE SHIPS.**

The arrival of LNG tankers in the Northern Netherlands is a consequence of the search for alternative energy sources now that the flow of natural gas from Russia to Western Europe has (virtually) stopped due to the war in Ukraine. In record time, Dutch energy network operator Gasunie established the floating EemsEnergyTerminal in Eemshaven together with partners. The terminal consists of two FSRUs (Floating Storage Regasification Units) - the Golar Igloo and the Eemshaven LNG installation; here, liquefied natural gas that arrives by tanker at temperatures of below -162 degrees Celsius is regasified to next be fed into the existing underground network through an 800-metre-long pipeline. Both FSRUs have been leased by Gasunie for a period of five years and are capable of processing 8 billion m<sup>3</sup> of LNG annually.

### THREE PAIRS OF EYES

On the Friday preceding this interview, Edward Kilian, chairman of the Region North pilotage area since the 1st of August, and his colleague Wim Siersema worked together to bring the Pearl LNG - 293 metres long, almost 46 metres wide and with a draught of almost 11.5 metres - into Eemshaven from the Ems. The tide-bound ship was carrying 170,000 tonnes of LNG. “We pilot LNG tankers with two people. One of us sails, the other takes care of the communication with the other seafarers, the tugs and the various authorities.” Since the Netherlands and Germany share jurisdiction over the Ems estuary, a German pilot from Borkum also accompanies the ship from the shore. “With this so-called ‘Radarberatung’, we actually have three pairs of eyes.”

### SCALING UP

Before the LNG activities commenced, ships with the dimensions of the

Pearl LNG were a rarity on the Ems. Bulk carriers of approximately 225 metres carrying coal for the local power station were the largest regular visitors. The transport of coal recently saw a sharp drop due to the climate ambitions of the Dutch government, but this has now rebounded to normal levels due to the pursuit of gas savings, concludes Kilian on the increase in dry bulk carriers that require pilotage.

### MEETING STRICT CONDITIONS

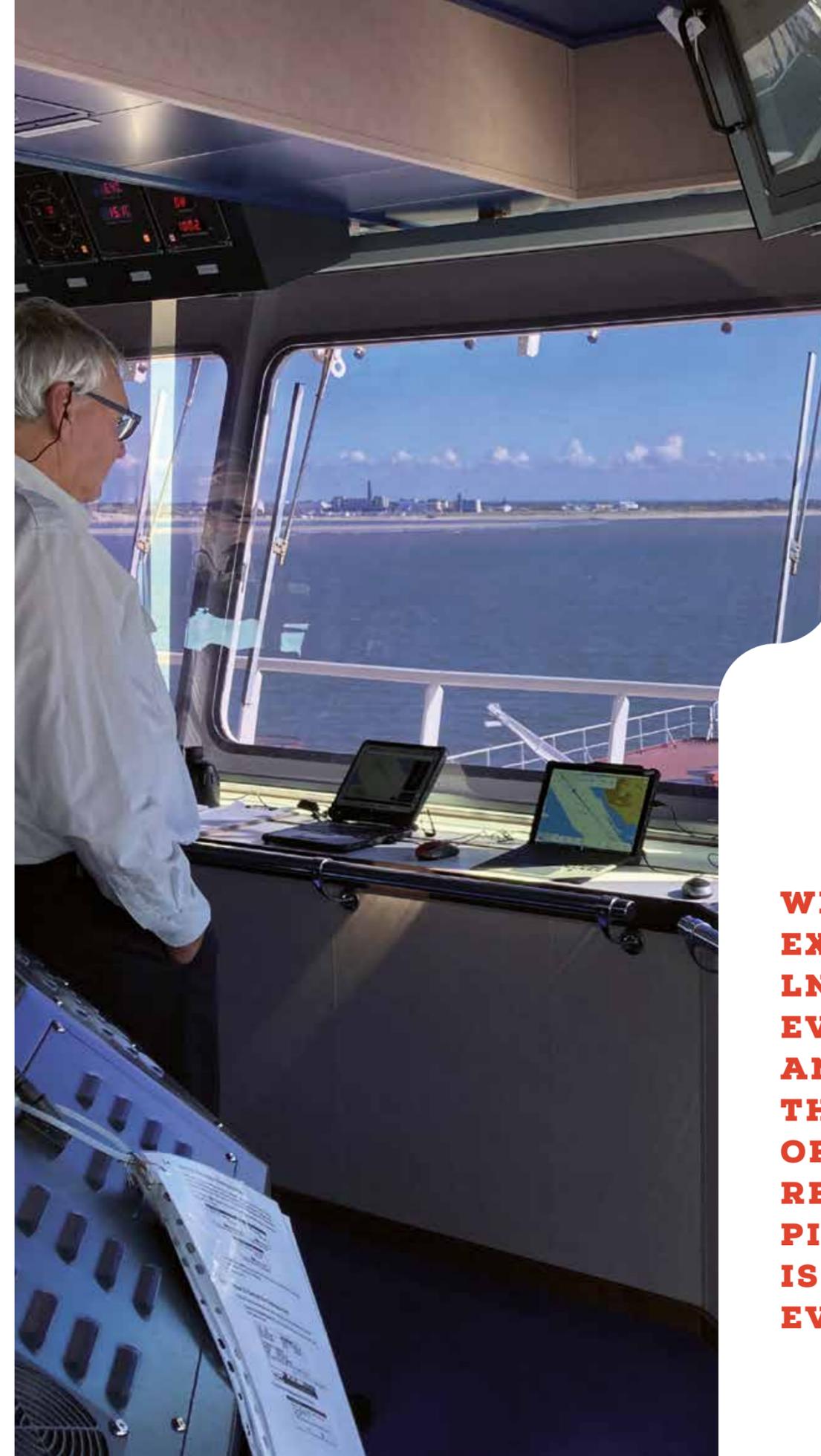
For sailing up and down the Ems, the Dutch and German authorities have designated LNG tankers as exceptionally large vessels; due to their size and cargo, they are bound by strict requirements. Prior to the arrival of the very first ship, all stakeholders completed a comprehensive process together in order to determine the conditions under which an LNG tanker is able to safely enter Eemshaven. The Dutch Maritime Pilots’ Organisation was contracted by Gasunie to contribute its knowledge and experience. Together with the Directorate-general for Public Works and Water Management (Rijkswaterstaat) and Groningen Seaports, extensive simulations were conducted at the maritime research institute MARIN in Wageningen. In addition to the mandatory deployment of two pilots for each LNG tanker - both inbound and outbound - this also resulted in the decision to assist each ship using four tugs: three with a pulling force of 56 tonnes and one of 70 tonnes. Kilian: “Nautical service provider Wagenborg has specifically purchased an additional tug for this purpose in Eemshaven.” The wind conditions have been specified as well. Unlike bulk carriers, for example, LNG tankers have a high freeboard. Above wind force 6, the ships therefore remain offshore. Furthermore, once an LNG tanker is en route to the harbour piers, outbound shipping traffic from Eemshaven is stopped half an hour before arrival. After the LNG tanker has passed, the relevant port basins are opened up one-by-one. Once in Eemshaven, the turning basin has been expanded from 450 to 600 metres to specifically accommodate LNG tankers. This allows the ships to enter in reverse, enabling them to immediately depart in the event of an unexpected calamity.

### ADDITIONAL TRAINING

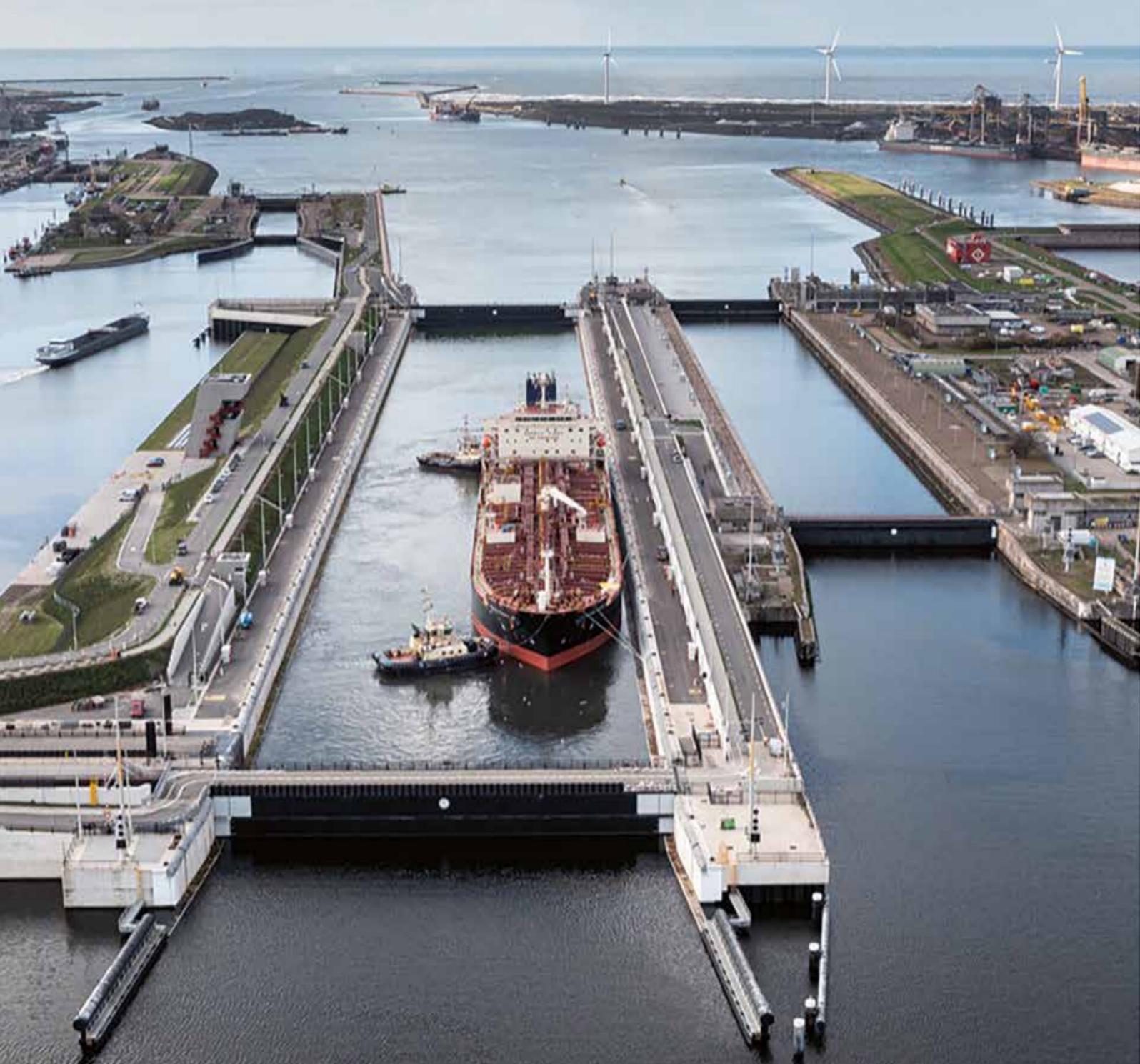
“Prior to the arrival of the first LNG tanker, we also performed additional exercises on our own simulator here at our Eemshaven office,” continues Kilian. “Including the tugboats deployed at both the bow and the stern, the ship measures 400 metres. Furthermore, all pilots with full certification have completed an LNG awareness course taught by a colleague from Rotterdam, where the supply of LNG has been commonplace for much longer. As chairman, I also went to Emden for an LNG awareness training with the German stakeholders.”

### BUSIER THAN EVER

With an expected 75 LNG tankers every year and an increase in the transport of coal, the Region North pilotage area is busier than ever. “To accommodate this, we added an additional pilot in October. Furthermore, in 2023 we aim to train two pilots who, depending on how busy it is, can be flexibly deployed in both our region and the Rotterdam-Rijnmond region.”



**WITH AN EXPECTED 75 LNG TANKERS EVERY YEAR AND AN INCREASE IN THE TRANSPORT OF COAL, THE REGION NORTH PILOTAGE AREA IS BUSIER THAN EVER**



THE BATTLE BETWEEN

# salt and fresh

**IN EARLY 2022, SEA LOCK IJMUIDEN WAS OFFICIALLY COMMISSIONED; MEASURING 500 METRES IN LENGTH AND SEVENTY METRES IN WIDTH, IT IS THE LARGEST SEA LOCK IN THE WORLD. A LOCK OF THIS MAGNITUDE PRESENTS USERS – PILOTS, TUG OPERATORS, BOATMEN, LOCK OPERATORS – WITH UNPRECEDENTED CHALLENGES. THIS IS MAINLY DUE TO THE FORCES THAT ARE RELEASED AS A RESULT OF THE INTERACTION BETWEEN SALT WATER AND FRESH WATER. PILOT ALLERT SCHOTMAN: “WE HAVE TO LEARN HOW TO HANDLE THE NEW LOCK IN A CONTROLLED MANNER.”**

The new lock may officially be open, but it is not yet fully operational. Only ships that exceed the maximum width and draught of the old North Lock (Noordersluis) currently pass through the new lock. And the gates of Sea Lock IJmuiden are also opened in situations where the number of ships simultaneously arriving exceeds the capacity of the North Lock. The reason for this limited usage is due to the fact that the newly designed selective salt extraction via the pumping station, required to discharge salt from the North Sea Canal each time the lock is opened, will not be completed until 2025. Every time a vessel passes through Sea Lock IJmuiden, twice as much salt water now still flows into the North Sea Canal compared to the North Lock. The aim is to at least keep the amount of salt the same. Furthermore, the summer of 2022 was exceptionally dry, resulting in corresponding low water levels in the North Sea Canal and, because of this, additional salt intrusion. This also limited the number of daily lock passages through the North Lock.

#### LONGITUDINAL AND LATERAL FORCES

The salt issue which pilot Allert Schotman from the Amsterdam-IJmond pilotage region has been focusing on for years already is of a more structural nature. Only a few lock complexes in the world (besides IJmuiden, two other examples are Terneuzen and Panama) show such a strong contrast between salt and fresh water. This means that as soon as the lock gates are opened, fresh water and salt water flows interact, releasing substantial forces. When the lock gates open to the sea (outbound), longitudinal forces occur and the lock ‘spits out’ the ship, so to speak. Inbound, ships are subjected to lateral forces, pushing the bow of the ship towards the centre. Both forces can be strong. But at the old North Lock, pilots, tug operators and boatmen of course know how to anticipate this. The challenge related to the new sea lock was that due to its size, the forces released were still unknown. For that reason, a scale model of the new lock was made at the maritime research institute Deltares a few years back. Using the largest model ship, calculations showed that outbound, a maximum of 130 tonnes of longitudinal force was possible. Bear in mind that the average port tugboat can tow a maximum of 70 tonnes. And how does this relate to the forces that are exerted on the mooring lines?

#### MEASURING IN PRACTICE

A few weeks before Sea Lock IJmuiden came on stream, the opportunity arose to perform a new measurement study – this time



ALLERT SCHOTMAN

in practice. Schotman: “This yielded some remarkable results. We performed tests with vessels of various sizes – a 180-metre Handysize carrier and a 250-metre Aframax tanker. This showed that although the longitudinal forces were considerable in practice, they were relatively lower than we had initially predicted. And at roughly 35 to 40 tonnes, they were about the same for each type of ship. Inbound, we confirmed though that the larger the ship is, the greater the lateral forces are. For a Capesize ship of 300 metres, this could jump to 70 tonnes immediately after opening the inner lock gate. Ultimately, it did mean that we were able to calculate how many mooring lines we would need to deploy in the lock, as well as which type and where, and how we could best unmoor them again. The best option for outbound, for example, proved to be a double forward spring line and a double stern line; this ensures a fairly high degree of stability. Inbound, a double bow line proved insufficient. One solution is to cast off certain lines as soon as the lock gate is half open. This cuts the lateral force in half, but immediately presents a new challenge. After all, if that causes the ship to drift to the centre, it is not possible to have two ships alongside each other. That would in turn affect the capacity of the lock. Possible solutions might be the use of a bow thruster or the deployment of a forward tug. We still need to reach consensus on this. All of this is immensely interesting.”

#### NOT FINISHED LEARNING YET

“There is still so much to study,” concludes Schotman. “In terms of mooring configurations and tugboats, we will continue to test and measure. We have to learn how to handle the lock in a controlled manner. In January and February 2023, when the North Lock will be closed for major maintenance and Sea Lock IJmuiden will be in continuous use, we will have further opportunities to perfect our knowledge.”



# FULL FOCUS ON **GREEN** HYDROGEN!

GREEN HYDROGEN IS THE NEW HOLY GRAIL FOR A SUSTAINABLE FUTURE. BOTH AS AN ENERGY SOURCE FOR INDUSTRY, A CORNERSTONE FOR A SUSTAINABLE CHEMICAL SECTOR, AN ENERGY CARRIER FOR TRANSPORT AND A HEAT SOURCE FOR HOUSEHOLDS, FOR EXAMPLE. THE PORT OF ROTTERDAM, THE PORT OF AMSTERDAM AND NORTH SEA PORT ARE EACH WORKING IN THEIR OWN WAY TO MAKE THE LARGE-SCALE USE OF GREEN HYDROGEN A REALITY. ONE THING IS CLEAR: LOCAL PRODUCTION USING WIND AND SOLAR ENERGY WILL BE FAR FROM SUFFICIENT TO MEET FUTURE DEMAND IN THE NETHERLANDS AND THE REST OF EUROPE. IMPORTS ARE ESSENTIAL!

# Rotterdam is full of green hydrogen initiatives

**‘Rotterdam envisions three ways in which green hydrogen can arrive in the port in the future: as green ammonia, through an LOHC and in liquid form’**

**THROUGH LOCAL PRODUCTION AND LARGE-SCALE IMPORT, THE PORT OF ROTTERDAM IS ENVISIONING A MAJOR ROLE FOR ITSELF IN MEETING THE FUTURE EUROPEAN NEED FOR GREEN HYDROGEN. PROGRAMME MANAGER RANDOLF WETERINGS OF THE PORT OF ROTTERDAM AUTHORITY OFFERS INSIGHT INTO SOME OF THE HUNDRED-AND-ONE INITIATIVES THAT ARE CURRENTLY UNDERWAY. “A FURTHER INCREASE IN SCALE IS ABSOLUTELY NECESSARY.”**

Green hydrogen will signify a new, substantial commodity flow for the port of Rotterdam. Northwest Europe, with its high energy consumption, will not be able to produce enough renewable energy regionally. The European Union will require an expected twenty million tonnes of green hydrogen by 2030, after which the market will continue to grow towards 2050. “The idea is that half of the twenty million tonnes of green hydrogen needed in 2030 will come from own European production and the other half from overseas imports,” says Weterings. “Our ambition is to import four million tonnes of this via Rotterdam and to produce 0.6 million tons locally in the port and industrial complex. To put those four million tonnes of green hydrogen in perspective: that means two to three ships per day.” This hydrogen will largely be moved from the port to the European market through pipelines.

#### **LARGEST HYDROGEN PLANT IN EUROPE**

The production of green hydrogen is still in its infancy, says the programme manager. Frontrunner in the port of Rotterdam is Shell, which is currently building its first large hydrogen plant at the Maasvlakte. Through an electrolyser capable of processing 200 megawatts of electricity generated by offshore wind, Shell aims to produce 60,000 kilograms of green hydrogen per day from 2024. “It will be the largest hydrogen plant in Europe.” 60,000 kilograms only accounts for less than ten percent of the port’s green hydrogen production ambition for 2030 though. “A further increase in scale is absolutely necessary.” The so-called conversion park where Shell is currently constructing therefore offers room for additional hydrogen plants as well.

#### **GLOBALLY INVOLVED IN NUMEROUS PROJECTS**

Everywhere else in the world, green hydrogen production is also still a new, emerging activity that requires extensive technological innovation. Regions with a lot of sun, wind or a combination thereof and a lot of space that are relatively close to the coastline are ideally suited as production locations from which export to such places as Rotterdam can take place. Weterings: “Across the globe, we are involved in over a hundred projects.” This recently resulted in a Memorandum of Understanding with the Spanish energy company Cespa for the structural supply of green hydrogen from the port of Algeciras from 2027, for example.

#### **THREE MODES OF TRANSPORT**

Rotterdam envisions three ways in which hydrogen can arrive in the port in the future. “In the form of green ammonia, through the use of a so-called Liquid Organic Hydrogen Carrier (LOHC) and in liquid form,

**TO PUT FOUR MILLION TONNES OF GREEN HYDROGEN IN PERSPECTIVE: THAT MEANS TWO TO THREE SHIPS PER DAY**

transported at -253 degrees Celsius.” Delivery in the form of ammonia using existing tankers is a proven technology, explains the programme manager. “Up to 2030, I expect 90 percent of the green hydrogen to be supplied in this way.” The OCI ammonia terminal in the Europoort area is therefore tripling its capacity right now. Other terminals have also announced the development of new tanks to accommodate green ammonia. In part, this green ammonia can be used directly as a clean raw material for the industrial sector and as fuel for the propulsion of ships. “However, for applications which require green hydrogen to be extracted from ammonia in the port, the realisation of large-scale cracking facilities still constitutes a challenge.” The Port of Rotterdam Authority, together with seventeen companies, has just started a feasibility study for such an ammonia cracker.

#### **BONDING AND RELEASING FOR LOHC**

According to Weterings, a second option for the supply of green hydrogen is to bond it with carriers such as LOHC. Until 2030, he expects this to only play a modest role compared to ammonia. After that, it can continue to grow. “In LOHC technology, green hydrogen is chemically bonded to an existing oil product such as toluene. In Rotterdam, we release the green hydrogen, after which the ‘carrier’ is returned to the source where it can be bonded with hydrogen again.” Companies are currently working hard on the development of a factory concept for the bonding and releasing of green hydrogen. “LOHC can be transported using existing tankers. I expect the first industrial-scale pilot already before 2025.”

#### **LIQUID HYDROGEN**

Green hydrogen will be imported in liquid form as well. Weterings: “Looking to the entire logistics chain, this is an efficient way if you really need the hydrogen itself. You then no longer need to crack or release the hydrogen in the port. Liquid hydrogen will be shipped in vessels that resemble LNG tankers, with all the associated safety requirements. However, the product is a hundred degrees colder than LNG.” The Port of Rotterdam Authority is currently monitoring a pilot involving such a liquid hydrogen terminal in Kobe, Japan. Further development and scaling up will inevitably take time. “I expect that the first liquid hydrogen terminal in Rotterdam could be operational by 2027. The space for it has already been reserved.”



**GREEN HYDROGEN IMPORT IN AMSTERDAM**

# The new commodity flow of the future



BART VAN DER MEER

**‘Establishing a complete ecosystem in Amsterdam which allows us to move a million tonnes of pure hydrogen through the port is an exciting prospect’**

**AMSTERDAM HAS HIGH AMBITIONS FOR ESTABLISHING AN IMPORT CHAIN FOR A CRITICAL MASS OF GREEN HYDROGEN. TO ACHIEVE THIS, TANK STORAGE COMPANY EVOS AND PORT OF AMSTERDAM HAVE JOINED FORCES WITH THREE TECHNOLOGY COMPANIES IN THE H2A (HYDROGEN TO AMSTERDAM) CONSORTIUM. BART VAN DER MEER OF EVOS EXPLAINS HOW H2A IS CURRENTLY DEVELOPING A PILOT.**

“The question is: how can you bring green hydrogen into the port safely, efficiently and on a large scale,” says Bart van der Meer, technical business development manager at Evos. “There are several options for transporting hydrogen by sea over long distances,” he explains. “One way is in the form of ammonia. However, due to ammonia’s properties, this is not really feasible given the safety parameters of Amsterdam’s port area. Another possibility would be in liquid form, chilled to -253 degrees Celsius, but this technology is not widely available yet. Compressed hydrogen under very high pressure also presents technical issues. A safe alternative is hydrogen transport via so-called carriers, and this is the area we are currently focusing on.”

**SQUEEZE LIKE A SPONGE**

Using a carrier works like this; at the production location, the green hydrogen is combined with a molecule that functions as a kind of sponge. It sucks itself full of hydrogen, as it were. At the discharge location (e.g. Amsterdam), the sponge is squeezed out at a so-called release plant for hydrogen. Here, the hydrogen is removed from the carrier. Next, the carrier is returned to the production location where it can be used again.

There are different types of carriers: liquid ones such as LOHC (Liquid Organic Hydrogen Carrier) and LIHC (Liquid Inorganic Hydrogen Carrier), but also solid ones such as SHIC (Solid Hydrogen Inorganic Carrier). The three technology companies within H2A, namely Hydrogenious (Germany), Hysilabs (France) and Electriq Global (Israel), each have their own specialism in storing and releasing the carriers. Van der Meer: “One of the things we at Evos aim to do in the pilot with green hydrogen is to use LOHC as a carrier. The liquid LOHC can be transported by regular tankers and stored in existing Evos tanks. LOHC is slightly thicker than diesel, for example, but it can easily be pumped.”

**WHY IN AMSTERDAM?**

“Importing green hydrogen in large quantities is an interesting clean energy solution for major users who would otherwise find it difficult to become more sustainable, such as heavy industry; furthermore, it can be used to sustainably supply the hydrogen pipeline grid,” continues Van der Meer. “Examples of such users in the Amsterdam port area include asphalt mills, steel factories and power plants. There are also potential applications in the city itself and Amsterdam is strategically and competitively located for serving industries in the German Ruhr area by barge. Furthermore, the planned so-called backbone, a national hydrogen network operated by the Dutch energy network operator Gasunie, will run through the port. Most hydrogen will be

## ‘THE LIQUID LOHC CAN BE TRANSPORTED BY REGULAR TANKERS AND STORED IN EXISTING EVOSTANKS’

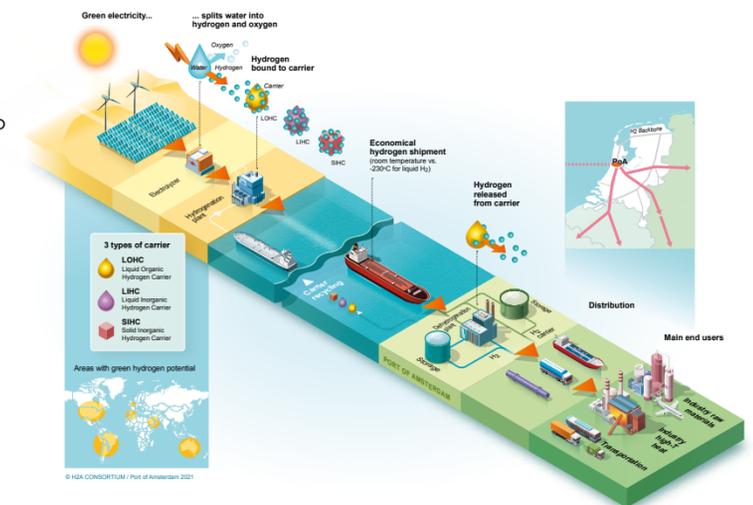
extracted from this backbone, so the possibility of Evos feeding hydrogen into it is an attractive one.”

**TOWARDS 2027**

Following a smaller Proof of Concept in 2024/2025, the planned pilot should confirm the project’s feasibility from 2027/2028. Van der Meer: “Most hydrogen technology is still in its infancy. The idea is to have tankers start delivering LOHC to Evos in 2027. We will store it here at the Evos tank farm, from where it will be transported to the customer by barge or pipeline. Before the hydrogen can be used there, it must first be released from the LOHC near the customer at a factory installation set up by one of the technology partners within the H2A consortium. The amount of energy the release plant requires can for example be generated by industrial residual heat. Of course, such an installation is also capable of supplying the Gasunie’s future backbone with green hydrogen.”

**LARGE TANKERS**

“LOHC can be transported using large tankers,” says Van der Meer. “They can call at Evos without any issues. The only possible limitation might be the draught of the North Sea Canal. Establishing a complete ecosystem in Amsterdam which allows us to move a million tonnes of pure hydrogen through the port is an exciting prospect. This is a new development; in such an ecosystem, all stakeholders will be able to learn a lot from each other by working together.”





# Dutch-Belgian green hydrogen hub



STEVEN ENGELS

**‘The right political frameworks must be in place at both the national and European level as well; a clear policy with a long-term perspective’**

## **NORTH SEA PORT HAS THE POTENTIAL AND THE AMBITION TO GROW INTO THE GREEN HYDROGEN HUB OF NORTH-WESTERN EUROPE**

**STRETCHING ACROSS THE NETHERLANDS AND BELGIUM, NORTH SEA PORT IS CURRENTLY THE LARGEST HYDROGEN HUB IN THE BENELUX. THROUGH THE CONSTRUCTION OF LARGE-SCALE ELECTROLYSERS, THE DANISH ENERGY COMPANY ØRSTED IS TAKING THE LEAD TO BOOST THE SUSTAINABILITY OF THE REGIONAL PRODUCTION HERE. TO MEET THE SUBSTANTIAL DEMAND FOR GREEN HYDROGEN THAT IS EXPECTED IN THE FUTURE, ADDITIONAL IMPORTS WILL BE REQUIRED FROM OVERSEAS AS WELL. SEVERAL COMPANIES HAVE CONCRETE PLANS TO THIS END.**

“North Sea Port has the potential and the ambition to grow into the green hydrogen hub of North-Western Europe,” is the conviction of Steven Engels, director Hydrogen Benelux at the Danish company Ørsted. Formerly known as DONG Energy, the company is the global market leader in offshore wind and in 2022 was named the most sustainable energy company in the world for the fourth year running.

In 2016, Ørsted won the tender for the construction of the Borssele 1&2 offshore wind farms. Following that, it now has a solid presence in the region. Engels: “Borssele 1&2 is a large project, good for 752 megawatts of electricity per year. We have a maintenance branch in the port of Vlissingen that serves these wind farms. But we are more widely active in the cross-border North Sea Port as well. Together with companies such as Dow, Arcelor Mittal, Zeeland Refinery and Yara, we are a member of Smart Delta Resources, which aims to make the industry in the port area more sustainable. The way to achieve this is through green hydrogen. Various companies are currently consuming substantial amounts of grey hydrogen, which is based on natural gas. This means that if we invest in electrolyzers for the production of green hydrogen, potential customers will be nearby.”

### **SPACE AT SEA AND ON LAND**

“North Sea Port is highly suitable for several reasons,” continues Engels. “There is room for offshore wind farms and for onshore electrolyzers, which require quite a lot of space. Furthermore, the planned hydrogen pipeline network of Dutch energy network operator Gasunie will run through the port area. We will be able to connect to that; this will also put industrial clusters such as Chemelot in South Limburg, the Ruhr area and Antwerp/Ghent within reach for the purchase of green hydrogen.”

### **SMALL STEPS**

Initially, Ørsted is focusing on two electrolyser projects. The first one, in Sluiskil on the south bank of the Western Scheldt, is slated to come on stream in the next years. Here, a 100 megawatt electrolyser powered by electricity from offshore wind farms is to be constructed for the clean production of fertiliser by manufacturer Yara. Engels: “Given that current electrolyzers can handle a maximum of 5-10 megawatts, this means a significant increase in scale. To achieve this, we will expand step-by-step and gradually evolve. Start small, build an organisation and a green hydrogen chain, reduce costs and then further develop that chain.”

The second project that Ørsted is focusing on is SeaH2Land. This involves the construction of a large integrated system on the north bank of the Western Scheldt, where a 1 gigawatt electrolyser is to produce green hydrogen using electricity from offshore wind farms. Never before has an electrolyser of this scale been developed anywhere in the world. Engels: “Here too, we are opting for a phased approach. Of course, the customers and the pipeline infrastructure must also be ready for it. This means we now have to find partners who are interested in green hydrogen and who share our willingness to invest. Industrial partners of course, but we are also considering mobility: heavy transport, inland shipping, trucks. We want to start with SeaH2Land as soon as we win one of the upcoming tenders for the next offshore wind farms.”

### **TIMELINE**

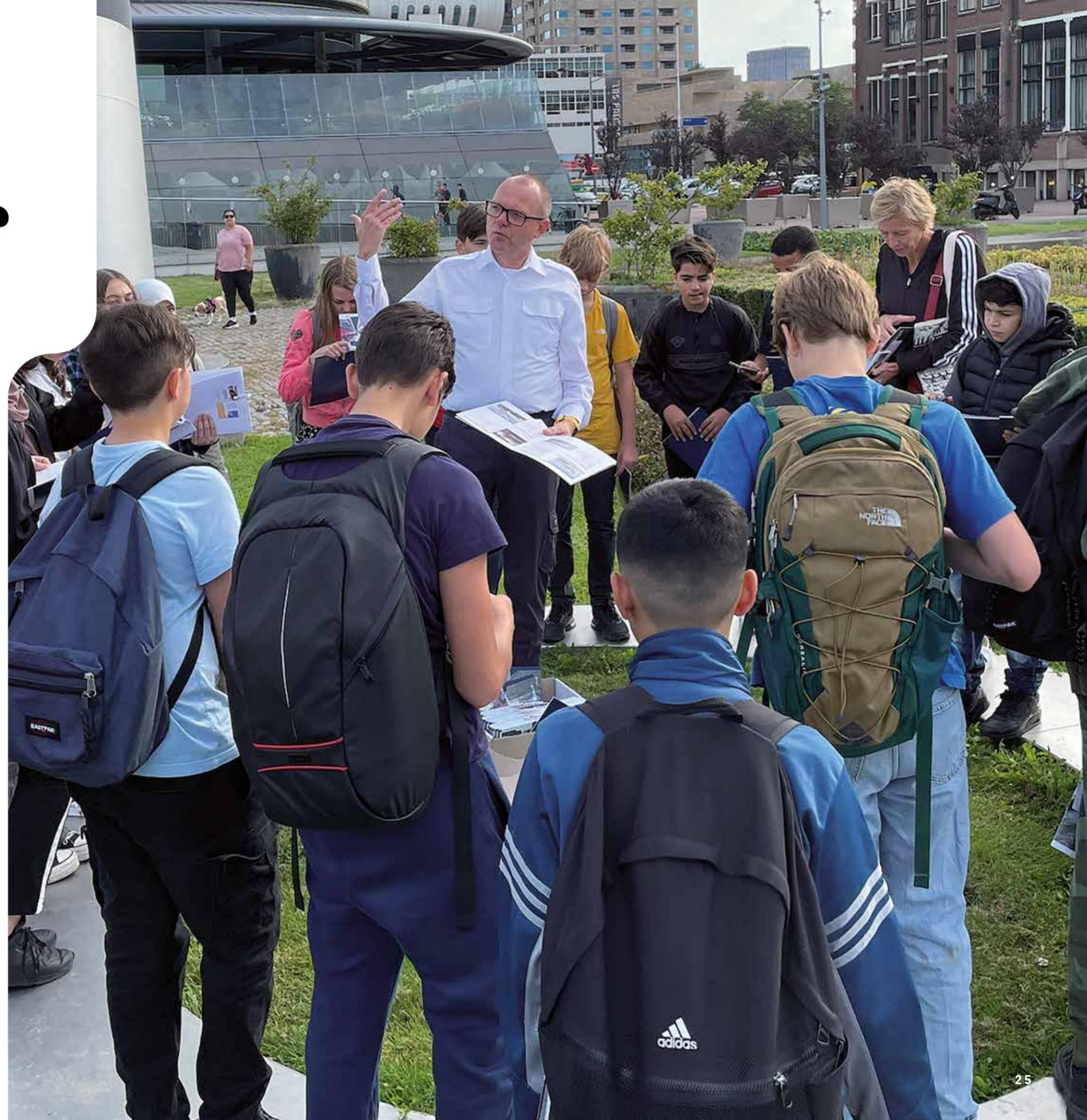
“The timeline we have in mind for SeaH2Land is around 2030, with the first phases running until 2025 and 2027,” says Engels. “A lot of work still needs to be done. The right political frameworks must be in place at both the national and European level as well; a clear policy with a long-term perspective. And a certain amount of support will be required in the initial phase for as long as green hydrogen is more expensive than grey hydrogen.”

“The potential of North Sea Port is enormous,” concludes the Ørsted director. “Everything is present: the ambition, the demand from various customers, the knowledge, the experience and the courage.”

IN SEARCH OF

# the pilots of tomorrow

MARITIME PILOT IS THE FINEST PROFESSION IN THE WORLD. MANY OF US MAY THINK SO, BUT THE TREND SHOWS THAT INTEREST IN THE PROFESSION - AND IN A MARITIME CAREER IN GENERAL - IS DECLINING. AT PRESENT, THE DUTCH MARITIME PILOTS' ASSOCIATION (NEDERLANDSE LOODSENCORPORATIE - NLC) STILL HAS A LARGE POOL OF CANDIDATES KEEN TO ENROL IN THE TRAINING COURSE FOR MARITIME PILOT. BUT WILL THIS CONTINUE TO BE THE CASE? THE NLC IS INITIATING A WIDE RANGE OF MEASURES TO ENSURE A CONTINUOUS INFLUX OF NEW PILOTS, BOTH FOR THE SHORT TERM AND FOR THE DISTANT FUTURE.





## ‘Paper is patient. In the end, action is what matters.’

“We want to be in the picture every time that someone makes a career choice,” says Yvette Ross. “That already starts in the lower years of secondary school and in fact continues until the moment that people are in the candidate pool for the master’s program to become a registered pilot.” Since early 2022, Ross has been shaping additional policy within the NLC for the continuous influx of new pilots in the short and long term. Some measures are quite practical in nature. “Until recently, someone who was included in our candidate pool would not hear from the NLC again until a position actually became available in one of the four pilotage regions. It was simply a matter of waiting. Now, we have a different approach. We organise an information session twice a year which is open to existing candidates, potential new candidates and students from nautical colleges alike. We explain how the master’s degree in maritime pilotage is structured and how the selection process works. Everyone can ask questions and we also clear up any misunderstandings that may exist. About the financial contribution that a new pilot is expected to make to the partnership, for example, or the difficulty of the study and the chance of admission.”

### INFLUX, ADVANCEMENT, RETENTION

The information sessions constitute a tangible example of how the relationship with everyone who is seriously interested in pilotage is strengthened. However, the concerns for the more distant future remain. The influx into nautical education has seen a declining trend for years. And ultimately, that is the source from which the NLC - like other maritime professions - gets its new staff. If you want to become a pilot, you must have sailed. Ross: “For this reason, we must be in the picture whenever choices are made: in lower secondary education, prior to when the choice of subjects takes place (for a maritime career, math and physics are strongly recommended), in upper secondary education for promoting further education at a nautical college, at the nautical college for the choice of a career on the water up to and including attention for the career choices of starting and experienced seafarers when they want to return to shore.”

### SHARED MARITIME INTEREST

Especially when dealing with young people, the most important thing is to create enthusiasm for maritime shipping in general. Ross: “I believe in collaboration. Together with other maritime parties, we have a shared interest. Sailing is fun! Under one single banner, we therefore attended four major study choice fairs throughout the Netherlands in 2022.” This allowed approximately 65,000 young people and their parents to become acquainted with the many facets of the maritime sector: from inland shipping and the shipping industry to maritime technology, from water sports, fisheries and hydraulic engineering to, of course, the Dutch Maritime Pilots’ Association. All maritime training courses were also represented in the joint stand under the central theme ‘Learning to work with and on the water’.

### MARITIME GOLD

Ross refers to all activities aimed at young people as the ‘maritime green’. “Furthermore, I would like to do a lot more with the ‘maritime gold’. Men and women who have earned their stripes in the sector, like pilots, who now want to use their knowledge and expertise after retirement, for example in nautical education or in a nautical club.” The authenticity that this brings and the passion that such experienced hands often radiate are exactly the things that can enthuse young people for a career in the maritime industry.

### HUMAN CAPITAL COUNCIL

The NLC’s participation in the Human Capital Council of the Dutch Maritime Network (Nederland Maritiem Land), the network organisation of the Dutch maritime sector, is more policy-oriented with a view to the long term. In this Human Capital Council, the various segments that make up the maritime sector regularly exchange experiences, share best practices and jointly develop campaigns. Currently, a sector-wide human capital strategy is taking shape. Ross, who is actively involved in this: “When drawing up this strategy, we primarily asked ourselves what the maritime sector would look like in 2030. The next question was how this would relate to human capital and the challenges in terms of influx and retention.” The strategy document that will be published shortly will guide the maritime sector in proactively anticipating this and structurally ensuring an influx of sufficient, skilled personnel for the future. Of course, the strategy document also includes recommendations. “Paper is patient. In the end, action is what matters.”

In the meantime, the NLC is working on its own initiatives as well. “In an annual plan, we have concretely laid down what we want to do for our various target groups in 2023 and 2024 to ensure a consistent enrolment of new candidates for the master in maritime pilotage training course.”

### SAILING IS FUN!

During the annual, well-attended World Port Days in Rotterdam, the Dutch Maritime Pilots’ Organisation organised several activities to promote the profession. Students from the maritime academy were able to sail with the pilot vessel and were taught on board. Pupils of a so-called technasium, which offers secondary education with a focus on science and technology, went to work in their class to devise solutions for safely bridging the height between two ships. During the event, they were able to experience this in practice on a climbing wall. Furthermore, there were numerous hands-on activities for primary school pupils, including a learning module, in order to introduce sailing into the schools in an early phase.

GUARDIANS OF A

# crowded North Sea

WHETHER YOU LOOK AT TODAY'S NAUTICAL CHART OR THAT OF TOMORROW: THE NORTH SEA APPEARS CROWDED AND IS ONLY SET TO BECOME BUSIER AND BUSIER. OIL AND GAS EXTRACTION, FISHING, RECREATION AND THE RAPID PROLIFERATION OF WIND FARMS ARE ALL VYING FOR SPACE. IN ADDITION, THERE ARE ANCHORAGE AREAS AND VESSELS LAYING CABLES AND PIPES. SJACO PAS EXPLAINS HOW THE NETHERLANDS COASTGUARD APPROACHES THIS COMPLEX ENVIRONMENT FROM A SAFETY PERSPECTIVE WHILE MARTIJN VAN DER VLIET DISCUSSES HOW SO-CALLED NORTH SEA PILOTS HELP CAPTAINS TO SAFELY NAVIGATE.



# ‘Every ship with a problem is ours’

**THE DUTCH SECTOR OF THE NORTH SEA – AN AREA ONE AND A HALF TIMES THE SIZE OF THE DUTCH MAINLAND – IS ONE OF THE MOST HEAVILY NAVIGATED AND USED BODIES OF WATER IN THE WORLD. THE AREA FALLS UNDER THE JURISDICTION OF THE COAST GUARD. “CONSIDER US THE EMERGENCY SERVICE AND THE COMMUNITY POLICE OFFICER OF THE NORTH SEA.”**

The Coast Guard can count no less than six Dutch ministries among its principals. Traditionally, the government service has always focused on Search & Rescue, springing into action in the event of disasters and incidents. Furthermore, it performs tasks related to enforcement, regarding fishery inspections, for example, or criminal acts such as smuggling and environmental offences. “The regular VTS traffic management on the North Sea is performed from various stations of Rijkswaterstaat (Directorate-General for Public Works and Water Management) situated along the coast. But the moment a serious issue arises – injuries, illness, collisions, damage – we spring into action,” says Sjaco Pas, North Sea policy advisor at the Coast Guard. “On the premises of the Ministry of Defence in Den Helder, we occupy a 24/7 Joint Rescue Coordination Center (JRCC), in which Customs, the Royal Netherlands Marechaussee, the Netherlands Food and Consumer Product Safety Authority (NVWA) and the police also always participate. We assess the most efficient course of action for each situation and, if necessary, coordinate helicopters, rescue boats, patrol aircraft and tugboats. Consider us the emergency service and the community police officer of the North Sea. Search & Rescue always has the highest priority. In real emergencies, we are able to quickly scale up at the JRCC. One of my side tasks is to lead that.”

## SURGE OF ACTIVITY

A new, more proactive task of the Coast Guard is currently under development: maritime situational awareness. This is fully attributable

to the surge of activity in the Dutch sector of the North Sea, explains Pas. “It’s only logical: all shipping routes to the major Western European ports, but also to Russia, pass through Dutch waters. Gas and oil extraction, sand extraction, fishery and recreational boating take place here and there are anchorage areas. Particularly in the last five years, the construction of wind farms has been added. The relatively shallow North Sea is highly suitable for this. Floating solar panels, tidal energy, seaweed farms and forms of passive fishing are also under development. And there are more and more pipes and cables on the seabed which are vulnerable in many ways. On top of that, additional ship movements – construction and maintenance vessels for wind farms, for example – are taking place in this increasingly limited area. That poses risks. Incidents at sea may be rare, but their impact on the environment, people and the economy can be significant.”

## JULIETTE D. ADRIFT

With so much activity, there is a slightly greater chance of ships colliding, states Pas. “However, the likelihood of a ship colliding with a wind turbine or a production platform has increased significantly. A ship that goes out of control for some reason has less and less space and time to drift before it collides with something.” A good example is the Juliette D. “During Corrie, the severe storm that hit at the end of January 2022, this bulk carrier broke its anchor chain near IJmuiden. First, the Juliette D. hit a nearby tanker causing a hole in the hull. After the crew had been airlifted from the Juliette D. by helicopter, the ship next drifted towards a wind farm where a foundation was scraped. It then headed towards a transformer platform, where it hit a leg of the jacket, resulting in even more damage. With our helicopter, we put salvors from Boskalis aboard the abandoned Juliette D. Through the use of a tug boat, they managed to prevent the ship from drifting further towards a gas platform and

**‘The moment a serious issue arises – injuries, illness, collisions, damage – we spring into action’**

running aground off the coast. Ultimately, everything ended well, but only just.”

## SENSORS

The ‘new’ task of the Coast Guard regarding maritime safety could be organised even better and especially requires further capacity expansion, emphasises Pas. “If as a country we become dependent on our energy supplies at sea, this will become increasingly important. A lot has already been done though. For example, wind farms are now equipped with sensors, so that we have better insight into what is happening. There is AIS coverage and radar coverage and VHF coverage will be added at the more remote wind farms as well. Thanks to this increased insight, we can intervene earlier if ships encounter problems or warn them of possible dangers ahead of time. Near Borssele and IJmuiden, there are now two extra powerful sea tugs on standby, both equipped with rubber lifeboats. Furthermore, we monitor every new construction project at sea and set requirements for this, such as extra guard vessels and the deployment of a North Sea pilot when laying cables, for example. It is a matter of optimally identifying and managing risks. That is why a monitoring and research programme of Rijkswaterstaat is used to continuously check whether expected risks do indeed occur and whether the measures taken are appropriate.”



# Safe navigation!

**IN THE INCREASINGLY CROWDED NORTH SEA, MORE AND MORE PARTIES ARE OPTING TO TAKE ON BOARD A DEEP SEA PILOT - OFTEN REFERRED TO AS NORTH SEA PILOT - NOTES MARTIJN VAN DER VLIET OF THE COMPANY REDWISE – DCP, WHICH PROVIDES THIS SERVICE FROM THE NETHERLANDS. THE OPERATIONS MANAGER EXPLAINS WHAT THE PROFESSION ENTAILS AND HOW THEIR SERVICES DIFFER FROM THOSE OF A CONVENTIONAL REGISTERED PILOT WHO SAFELY GUIDES SHIPS IN AND OUT OF THE PORT.**

The operational area of a North Sea pilot extends from the narrow English Channel on the southern end of the North Sea as far North as Mongstad in Norway and the tip of Denmark (Skagen). "In general, our North Sea pilots board the ships that request their assistance from Cherbourg in France, in northern Normandy. If they stay on board for the entire journey, the pilot will disembark again at Brixham in England on the return trip."

## 'REAL MARITIME JOB'

Car carriers, container ships, bulk carriers and tankers (especially very large crude carriers - VLCCs) are increasingly turning to Redwise – DCP for a North Sea pilot. Although not mandatory, more and more shipping lines and agencies see the need to unburden their captains when navigating the increasingly crowded North Sea. In addition to Redwise – DCP in the Netherlands, there are organisations in France, the United Kingdom and Germany that offer comparable services. That brings the total stock of North Sea pilots to about seventy, approximately fifteen of which are in the Netherlands, estimates Van der Vliet. "It's a real maritime job," he describes the profession. "You spend longer periods of time aboard a ship." Depending on the specific trip, this can vary from two - three days up to, occasionally, fifteen days.

## DIFFERENT FROM A REGISTERED PILOT

The differences between a North Sea pilot and a registered pilot are clear. "Our pilots assist the captains in the North Sea. As soon as a registered pilot comes on board to enter a port, the work of the North Sea pilot is completed and he is free until the ship is back at sea." Although not mandatory, the assistance of a North Sea pilot is highly recommended by the IMO, especially for VLCCs. Another difference is that Dutch registered pilots are self-employed, whereas the North Sea pilots work under an employment contract. "At Redwise – DCP, contracts range from 80 to 180 days, depending on the preferences of the pilot in question."

## LESS AND LESS ROOM TO MANOEUVRE

Digitally supported by their own equipment, a North Sea pilot is well trained and versed in navigating the North Sea, where the shipping fairways to the north and the south offer less and less free space. The rapid proliferation of wind farms in particular is steadily restricting the manoeuvring space for large vessels. The Operations Manager notes that especially VLCCs are increasingly calling in the assistance of a North Sea pilot. A development that is partially attributable to the current ban on Russian oil, prompting the arrival of VLCCs from other sailing areas. For the captains of these ships, the North Sea is (relatively) unknown territory.

## CONSTANTLY LOOKING FOR NEW PILOTS

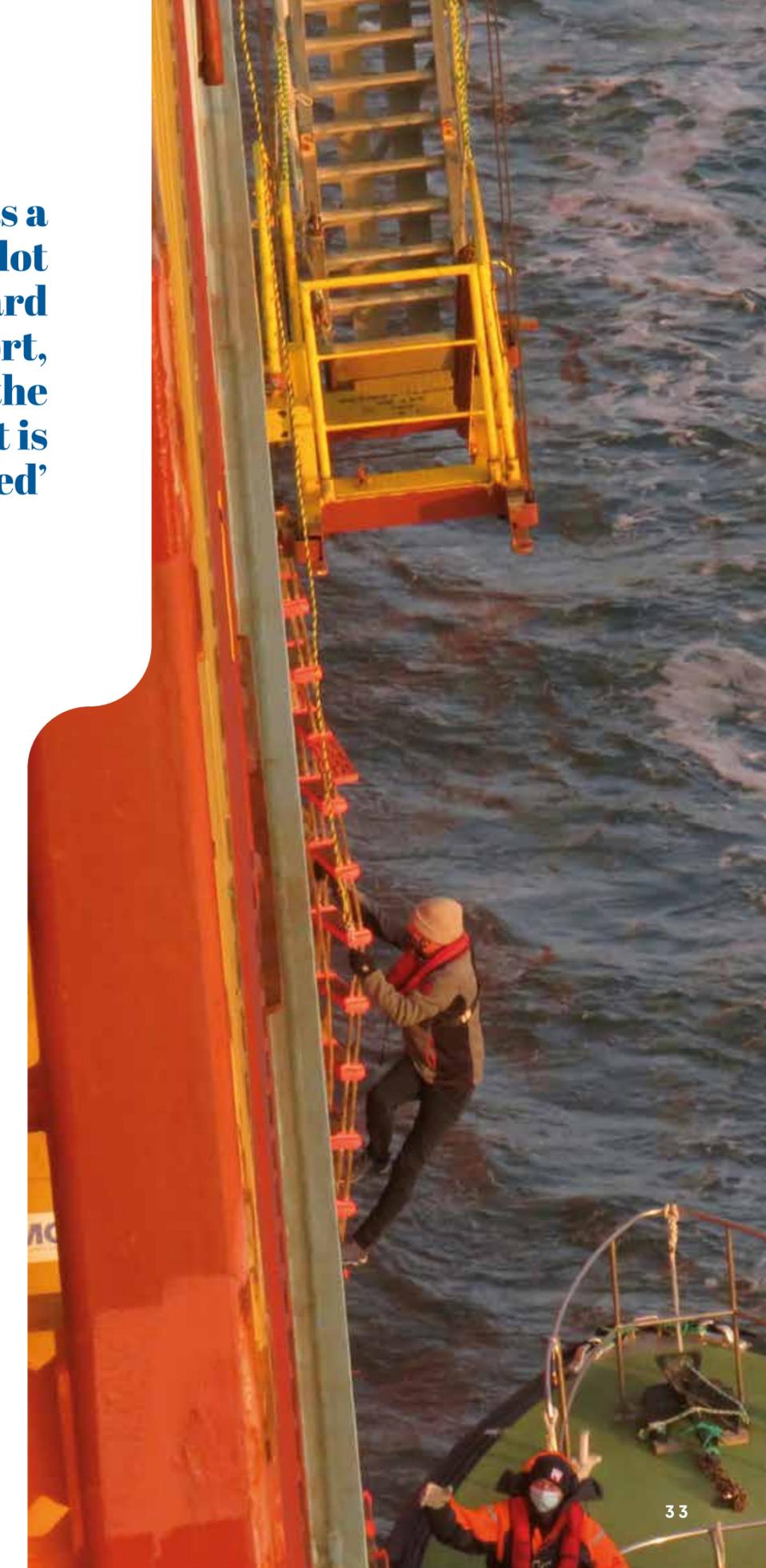
In that increasingly crowded North Sea, the need for Deep Sea pilots will only increase further. Redwise - DCP is constantly looking for new staff, partly to accommodate natural turnover, partly to accommodate expansion. Preference is given to senior professionals with a great deal of knowledge and experience. "Captains must be willing to accept their directions." Van der Vliet therefore likes to recruit among pilots who are obliged to retire from the Dutch Maritime Pilots'

**'As soon as a registered pilot comes on board to enter a port, the work of the North Sea pilot is completed'**

Organisation at the age of sixty, but who still want to continue sailing for a few more years. Captains from the merchant navy make the transition as well. The training to become a North Sea pilot takes four to six months and comprises both a theoretical and a practical part; partly on the simulator and partly by accompanying voyages. Van der Vliet: "Redwise – DCP is a recognised institute for the training and certification of North Sea pilots." Through additional special courses, North Sea pilots are also trained to become offshore VTS operators. In this function, they are deployed in accordance with legal regulations on offshore platforms and aboard vessels laying cables and pipes, operating in or near the waterways to help ensure that vessels maintain a safe distance.

## 'COLLEAGUES!'

"The relationship with the Dutch Maritime Pilots' Organisation is excellent," concludes Van der Vliet based on his more than twenty years of experience as Operations Manager. "We collaborate whenever we can. We truly are colleagues! The profession of North Sea pilot and the criteria that must be met have been laid down in the Pilotage Act, as is the case for registered pilots."



‘The maritime pilot is an extremely important element in the functioning of the Netherlands as a leading distribution country’



AMENDED PILOTAGE ACT INTRODUCED ONE YEAR AGO

## Efficiency, continuity and quality

ON THE 1<sup>ST</sup> OF JANUARY 2022, AN AMENDED PILOTAGE ACT WAS INTRODUCED IN THE NETHERLANDS. JOOST MULDER, CHAIRMAN OF THE DUTCH MARITIME PILOTS' ASSOCIATION (NEDERLANDSE LOODSENCORPORATIE, NLC), AND ADRIAAN ZEILLEMAKER, DEPUTY DIRECTOR OF MARITIME AFFAIRS AT THE MINISTRY OF INFRASTRUCTURE AND WATER MANAGEMENT, REFLECT ON THE DEVELOPMENT PROCESS BEHIND THE REVISED ACT AND DISCUSS ITS MOST SIGNIFICANT CHANGES. THE AMENDED ACT, WHICH REGULATES THE MARKET SUPERVISION OF PILOTAGE SERVICES, BRINGS TOGETHER EFFICIENCY, CONTINUITY AND QUALITY.

To immediately dispel any expectations outsiders may have of exiting new changes: the amended Pilotage Act (officially *Wet actualisatie markttoezicht registerloodsen* in Dutch) does not dramatically differ from its predecessor. The principal points remain unchanged. However, the Pilotage Act, which constitutes the legal foundation on which the 24/7 service provision of the Dutch Maritime Pilots' Organisation (*Nederlands Loodswezen*) is based, contains a provision that requires a five-year evaluation of its effectiveness and effects in practice. The benchmark year was actually 2013; however, it next took nine years for the amended act to be finalised. Capacity issues at the ministry, a change of cabinet and, last but not least, in-depth consultation on adjustments deemed necessary ultimately resulted in the amended act being introduced on the 1<sup>st</sup> of January 2022. Zeillemaker: "Bear in mind that in any case, legislative processes take at least two years from the moment a start is made with the drawing up of a new act until it is finally passed by the House of Representatives and the Senate."

### SOME STREAMLINING

The evaluation of the Pilotage Act of 2008 in 2013, which was performed by an external agency on behalf of the ministry, highlighted a number of points that were deemed in need of streamlining and amendment. Mulder: "As NLC, we did not directly agree with all of these findings. Following various rounds of discussions, a basis for further policy-

making was next established on one A4 sheet." The ministry sent letters to the House of Representatives twice about these policy intentions, after which a start could be made with the drawing-up of the amended act. Zeillemaker: "Fortunately, we were also able to benefit from the knowledge and skills of *Nederlands Loodswezen* for this. I generally feel that a government should not draw up legislation from an ivory tower anyway." The deputy director of Maritime Affairs refers to the legislative process as an intensive collaboration, sometimes involving fierce debate. "Ultimately, this has resulted in a setup that both sides can agree to. *Nederlands Loodswezen* wants to be able to provide the continuity and quality that is so highly valued throughout the sector. From the perspective of our policy goals, we at the ministry also focus on the parameters regarding efficiency, costs and price stability within which the pilots must be able to perform. The Minister of Infrastructure and Water Management bears the ultimate systemic responsibility for smooth and safe navigation. The pilots play a very important role in this."

### CHANGES

The most significant substantive changes in the amended Pilotage Act relate to the establishment of fixed hourly rates for registered pilots, the addition of an efficiency incentive as soon as the number of pilot trips shows a year-on-year increase and the inclusion of additional quality requirements. Furthermore, a provision has been added about room for experimentation and *Nederlands Loodswezen* needs to be more proactive about sharing information about pricing at an early stage. Also, the Netherlands Authority for Consumers and Markets (ACM) has been granted some additional competences. Based on its existing supervisory task over the pilotage service, the ACM was already closely involved in the drafting of the new act anyway. In conclusion, the amended act has incorporated some matters that were already taking place in practice. The maritime sector, the competent authorities and the users were informed in the preparatory phase and were able to participate via an internet consultation, a standard part of every legal process nowadays.

### PROOF OF THE PUDDING IS IN THE EATING

Overall, Mulder is pleased with the implementation of the amended act. "Pilots carry out a statutory public task at their own expense and risk. If you have no influence on the volume of ships and the tariffs in that respect, then you need to somehow build in certainties." In his opinion, this has been safeguarded in the revised act by retaining the existing financing model, cost+, with the addition of an alternative price-cap calculation. "I'm pleased this has been laid down in the amended law." In 2023, the pilotage rates will be determined in accordance with the new legal rules for the first time.

Zeillemaker concludes: "The maritime pilot is an extremely important element in the functioning of the Netherlands as a leading distribution country, which generates lots of revenue for our nation. If this amended act manages to successfully strike a balance between optimal, 24/7 pilotage services and moderate cost development, then I am satisfied. As always, the proof of the pudding is in the eating. We will re-evaluate in five years' time."



ADRIAAN ZEILLEMAKER

‘I generally feel that a government should not draw up legislation from an ivory tower’

# COMMITTED TO SUSTAINABILITY!

**WITH THE CLIMATE GOALS OF THE EUROPEAN GREEN DEAL 2050 IN MIND, THE DUTCH MARITIME PILOTS' ORGANISATION IS ADOPTING A PHASED, PRACTICAL APPROACH TO BECOME MORE SUSTAINABLE. HERMAN BROERS, THE NEWLY APPOINTED DIRECTOR OF THE SUPPORTING DUTCH PILOTAGE BV (NEDERLANDS LOODSWEZEN BV - NLBV) AS OF THE 1ST OF JUNE 2022 AND AN ACTIVE PILOT FOR ALMOST TWENTY YEARS ALREADY, DISCUSSES THE CURRENT INITIATIVES AS WELL AS THE AMBITIONS FOR THE FUTURE.**

One look at the pie chart with the breakdown of the CO2 emissions of the Dutch Maritime Pilots' Organisation suffices: almost 95 percent is attributable to the diesel consumption of the ships that provide round-the-clock pilotage services in ports in the Netherlands and those on the Scheldt. This is where the greatest environmental gains can measurably be achieved. In the short term, the use of biodiesel can offer a significant contribution to this. Broers: "Doing so will allow us to achieve our first target of reducing CO2 emissions by 12.5 percent by 2025."

## MAKING SHIPS MORE ENERGY EFFICIENT

Other potential measures for further reducing CO2 emissions are more complex though. "From a safety and operational perspective, we do not want to compromise the quality of our service provision in any way. Currently, no technological solution is yet available that allows us to operate our ships with zero emissions." However, NLBV is making considerable efforts to increase the energy-efficiency of its vessels. Broers mentions the Mira, the first in a proposed series of five new M-class tenders. "The ship was launched in 2020. Our aim was to achieve lower CO2 emissions compared to previous generations of tenders by significantly reducing the weight of the tender and thus the fuel consumption. Despite all our thorough preparations, the handling characteristics however initially proved insufficient in practice. We spent two years modifying the vessel. Now, the performance at sea meets our requirements, while we are still able to consume 30 percent less fuel."

## SEARCHING FOR THE IDEAL PROPULSION

For Broers, the Mira serves as a good example that sustainability is not a given. "Therefore, we recently entered into a partnership with Damen Shipyards and maritime research institute MARIN. Together, we are exploring the propulsion systems of the future: hydrogen, LNG, batteries, methanol... each of our four types of vessels may require a different solution. The tender, the pilot vessel, the fast launch craft and the swath each have their own handling characteristics and deployment profile. This may result in different choices. Once again: the main thing is that we absolutely do not want to make any concessions to the quality of our pilotage services."

In the midst of this search for the ideal energy sources, the Dutch Maritime Pilots' Organisation is facing the additional challenge of needing to make decisions on the renewal of the fleet. "For the replacement of the two swaths that sail in the River Scheldt region, for example. Such new ships have a service life of fifteen to twenty years. Hydrogen or methanol based propulsion may be an option," says Broers. "In terms of space requirements for hydrogen or methanol tanks, a swath lends itself to that."

## PUTTING OUT FEELERS ACROSS THE GLOBE

A lot of research still needs to be conducted. NLBV is carefully keeping its ear to the ground in this respect. In the Rotterdam-Rijnmond region, it for example participates in regular sessions organised by port entrepreneurs' association Deltalinqs for exchanging experiences with other nautical service providers such as Rijkswaterstaat, the Port of Rotterdam Authority, Customs, the water taxi, tug operators and boatmen. "For example, there is already a water taxi that runs on hydrogen. What can we as pilots learn from that? Similarly, we should want to look at what pilotage organisations in other countries are doing as well. All over the world, people are contemplating the technical solutions of tomorrow. Why not do this together?"

## REDUCTION THROUGH EFFICIENCY

There is one aspect of sustainability that Broers wants to draw particular attention to. "Together with our logistics chain partners, such

as tug operators, boatmen, agents, terminals, etc., we ensure that the maritime logistics chain consistently runs as smoothly as possible and we always aim to further improve it. For me, that big picture is the most effective way to avoid CO2 emissions. Suppose we fail to reach a large container ship of 400 metres in time, so that it needs to wait at sea. I believe that such a ship emits 17 tonnes of CO2 per hour. By designing the logistics chain efficiently, we can achieve much greater reductions at the macro level than is possible at the micro level by using a different type of propulsion for our fleet or cars."

## PROFESSIONALISM AT SEA

In addition to that optimal organisation of the chain, Broers in conclusion points out the significance of professionalism at sea. "How do you handle a ship as a pilot? Do you tell the captain to go full or half speed ahead? If you know when a berth is available, you can anticipate this when piloting a vessel. The same applies to our NLBV staff members who embark and disembark the pilots from the ships. Where necessary, we try to make them more aware of their sailing behaviour. In general, however, as the new director of NLBV and as a pilot, it is good to see that the issue of sustainability is now firmly entrenched among everyone here at the Dutch Maritime Pilots' Organisation!"



HERMAN BROERS

**‘From a safety and operational perspective, we do not want to compromise the quality of our service provision in any way’**



CLOSE TO

# Nature

WILD PORT OF EUROPE, A WONDERFUL FILM ABOUT THE RICHNESS, RESILIENCE AND DYNAMICS OF NATURE IN THE PORT AND INDUSTRIAL AREAS OF ROTTERDAM AND MOERDIJK, PREMIERED IN DUTCH CINEMAS THIS AUTUMN. OTHER PORT REGIONS IN THE NETHERLANDS HAVE A LOT TO OFFER IN THIS RESPECT AS WELL. VARIOUS PILOTS EXPLAIN HOW THEY EACH ENJOY NATURE IN THEIR OWN UNIQUE WAY.



GERARD TEL



## One with the water

GERARD TEL PILOT IN REGION NORTH

**24/7, PILOT GERARD TEL SAFELY GUIDES LARGE SHIPS THROUGH THE EMS ESTUARY TO AND FROM EEMSHAVEN AND DELFZIJL, THE TWO MAJOR PORTS IN THE NORTH OF THE NETHERLANDS. HE NEVER TAKES THIS RESPONSIBILITY LIGHTLY. ESPECIALLY BECAUSE THE SHIPS PASS RIGHT THROUGH THE VULNERABLE WADDEN SEA, A UNIQUE WORLD HERITAGE AREA. IN HIS SPARE TIME, TEL SPENDS A LOT OF TIME HERE IN HIS SEA KAYAK.**

Tel (55) has been sea kayaking since a very young age. He vividly remembers the first time when, as a young man, he made the solo crossing by kayak to Emden, on the German side of the Ems. It was the beginning of his great love for the sea kayak, which he has been enthusing others with for many years as an instructor and organiser of kayak trips. Trips can sometimes span several days and take him and his fellow kayakers across the Wadden Sea, which stretches along the coast from the Netherlands, via Germany to Denmark. With a size of 11,500 km<sup>2</sup>, the Wadden Sea is the largest tidal area in the world; it is home to 10,000 different species

of flora and fauna, both in the water and on land. In 2009, UNESCO designated the Wadden Sea a World Heritage Site, affording it the same status as, for example, the Great Barrier Reef and the Grand Canyon.

### RIGHT ON THE WATER IN THE SEA KAYAK

"The sea kayak brings you very close to nature in the Wadden Sea," says Tel. "You are right on the water. It's great to lay still every now and then and listen to the birds and watch the fish splash about." The Wadden Sea is also home to a large seal population. "Back in 1985, it was rare to see a seal. Today, the sandbanks are full of them. Nowadays, you might get lucky and get to see a harbour porpoise, although they are still quite rare."

### LEARNING TO DEAL WITH NATURE

Tel notes that modern society has become estranged from nature. "The city is so full of electrical impulses. I don't think humans are made for that. In the middle of the Wadden Sea you can wind down. The wide views over the sea, the silence, the abundance of animal life all around you, the weather changes that you see coming from afar..." Sea kayaking definitely also means learning to take the

elements into account: wind, high waves, rain, icy water... "You have to plan and prepare every trip well in advance. How is the current, when does the tide change? Kayaking is learning to survive at sea." By default, Tel carries a transceiver and personal locator beacon. For multi-day trips, a tent, food and clothing are also loaded aboard the kayak.

Tel is grateful that he is able to practise his hobby in a responsible manner. This makes him extra aware of the great responsibility he has as a pilot. "By always guiding ships safely through the Wadden Sea, we contribute to the protection of this unique natural environment."



KEES DE JONG



RUTGER VUYK



# First aid for marine mammals

**KEES DE JONG PILOT IN THE SCHELDEMONDEN REGION**

**EACH TIME KEES DE JONG IS OUT ON THE WESTERN SCHELDT PERFORMING HIS PILOTAGE DUTIES AND NOTICES A SEAL POPPING ITS HEAD OUT OF THE WATER OR A POD OF HARBOUR PORPOISES HUNTING, HE IS ABSOLUTELY DELIGHTED. IN HIS SPARE TIME, BOTH DE JONG AND HIS WIFE VOLUNTEER AT A FOUNDATION THAT PROVIDES FIRST AID FOR MARINE MAMMALS THAT WASH UP ASHORE. "THE BEST MOMENT IS WHEN ANIMALS ARE READY TO BE RELEASED BACK INTO THE WILD AGAIN."**

On the days that De Jong is not scheduled to pilot ships, he is available for the Eerste Hulp Bij Zeezoogdieren (EHBZ) foundation, which provides first aid for sea mammals. EHBZ consists of a national network of thoroughly trained volunteers along the entire Dutch coast who spring into action whenever a report of a stranded marine mammal comes in; mainly seals and, to a lesser extent, harbour porpoises. If a message appears in the app

group and De Jong is the closest available volunteer, he jumps in his Suzuki 4 x 4 and heads out. Most calls involve stranded seals, called in by a passer-by via telephone number 144. "Once on site, I always first check what is going on and cordon off the area as best you can. Next, I consult with the A Seal rescue centre in Stellendam on the most appropriate course of action; 24 hours of observation first or immediate transport to their facilities." De Jong now knows from experience that 24 hours of observation can often suffice. A seal that may appear unwell could just be resting. "If the animal is in the banana pose, you immediately know that it is basking in the sun." Nevertheless, in the interest of the seal's welfare, De Jong would rather receive too many calls than too few. Every year, he notices two peaks in the number of calls. "June/July is birth season for the common seal and in winter the grey seals have their pups."

**PRIORITY FOR HARBOUR PORPOISES**  
Calls involving a harbour porpoise washing

washed ashore are much less frequent. De Jong: "It happens a few times a year and is always a priority. On land, a harbour porpoise will dry out quickly. At the same time, you almost know for sure that something is wrong with the porpoise; otherwise, it would not wash up. Once there, I consult with SOS Dolfijn on what to do next. Incidentally, the biggest mistake people make, because they don't know any better, is to try and push the animal back into the sea. The porpoise is a mammal and will drown immediately."

**SPACE FOR NATURE**  
The seal and the harbour porpoise are doing fine in the Western Scheldt, notes De Jong. The seal population in particular is steadily increasing. As a dedicated volunteer, he is excited about this. "Fortunately, the Western Scheldt offers space for this. However, at the same time I am concerned about the way in which the North Sea is being built up. All those activities there are displacing nature."

# Living from nature's bounty

**RUTGER VUYK PILOT IN THE AMSTERDAM-IJMOND REGION**

**EVEN ON DAYS WHEN RUTGER IS NOT ON THE WATER PILOTING SHIPS, YOU WILL REGULARLY FIND HIM OUT ON THE NORTH SEA. TOGETHER WITH HIS FELLOW PILOT AND BROTHER-IN-LAW BOB BEENTJES, HE SETS OUT IN THE 5.5-METRE-LONG FISHING BOAT THEY SHARE TO CATCH COD AND MACKEREL. THIS FISHING IS A SMALL PART OF VUYK'S AIM TO BE ABLE TO LIVE FROM NATURE'S BOUNTY. TOGETHER WITH HIS WIFE AND CHILDREN, HE IS GRADUALLY MAKING THAT AMBITION A REALITY.**

In 2021, the Vuyk family bought the estate 'Zeenimf' (Sea Nimph) - named after a VOC ship - in Burgerbrug, in the northwest of the Netherlands, together with two other families. They are currently in the process of converting the existing old buildings into sustainable homes that meet today's standards. "Our goal is to live as carbon neutral and self-sufficient as possible. We aim to source food from our own land in an environmentally friendly way,

according to the principles of permaculture and aquaponics. In the picking forest and the picking garden that we are developing, everything must be edible or useful. We have already planted a lot, but it will take eight years for everything to fully mature." Hops have also been planted in the garden. With the addition of wheat and barley from farmers in the area, the enthusiastic Vuyk hopes that he will soon be able to drink a first test beer, which he has named Zeenimf, just like the estate.

**FISHING AND HUNTING**  
The pursuit of self-sufficiency also takes Vuyk beyond the estate. Out to sea to go fishing, for example, or to go hunting. "I love nature, but I do want to be active in it though. Not just sailing a boat, but also catching fish. I greatly enjoy being in the woods, but I want to reap the benefits as well." Vuyk is part of a game management unit that is active in an area between the North Sea Canal and Alkmaar. "I am allowed to hunt here. All

year round on geese, which cause damage, and, when in season, ducks and hares, for example."

**FOCUS ON NATURE WHEN PILOTING AS WELL**  
Of course, Vuyk also focuses on nature when carrying out his professional duties as a pilot. From the bridge of a ship, he regularly spots porpoises and seals. Every time he guides a ship to or from the port of Amsterdam through the North Sea Canal, he particularly enjoys passing Buitenhuisen, a stretch of riverbank that has been restored to its original natural state with breeding walls for kingfishers and sand martins. "Being such an ardent lover of nature, I automatically keep an eye out for anything that moves. One of those tiny blue kingfishers: beautiful!"



Loodswezen

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