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## Recyclable blades for wind farm

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RWE INVESTS MASSIVELY IN EXPANSION OF WIND ENERGY

# Wind energy on the rise globally



Wind energy has seen significant growth in recent years, with global installed capacity passing impressive milestones and being one of the most competitive sources of energy. According to the International Energy Agency, in 2021, of the total 830 gigawatts (GW) of wind capacity installed, 93% were onshore and 7% offshore wind farms. Wind energy must be significantly expanded in order to reach the 'Net Zero Scenario' with an annual wind generation goal of 8,000 terawatt hours (TWh) by 2030. For comparison, electricity demand in Europe and North America in 2021 totalled around 8,500 TWh.

Markus Krebber, CEO of RWE AG: "Today's Global Wind Day celebrates one of our core technologies. Wind energy on land and at sea is one of the cornerstones to making the global energy transition a success and achieving the climate targets. To increase green energies we are investing billions of euros each year in wind power and we are committed to expanding our portfolio in an environmentally friendly way. With this in mind, we have set ourselves ambitious sustainability targets. For example, from 2030 at the latest we will only implement future wind projects that have a net positive impact on biodiversity."

with scientists and NGOs to create and advance the necessary knowledge to achieve net positive impacts. RWE aims to have 90 % of wind components from 'circular materials' by 2030 with a target of full material circularity by 2050. Furthermore, the company has set itself ambitious climate targets, in line with the 1.5-degree CO2 reduction path. A demonstration of innovation and using circular materials is evident at RWE's Kaskasi, Sofia and Thor offshore wind farms that will be using recyclable blades. In addition, GreenTowers will be used at Thor wind farm, an example of closing material loops by using scrap-metal in the components production next to green power.



Markus Krebber, CEO of RWE (credit RWE).

### Integrated part

RWE is one of the world's major players in renewables and leads the way in advancing sustainability in wind power. RWE is working towards full circularity and net-zero emissions, supporting local communities and the protection of biodiversity. The company has set a net-positive impact target by 2030 for biodiversity for all new assets. To achieve this, RWE is working

Key sustainability projects that have been deployed at some of RWE's onshore wind farms include Black Blades in the Netherlands to increase bird protection, the use of blade lift technology to avoid cutting trees in Selinus wind farms in Italy or the Orkoien project in Spain, which tests technologies to reduce the impact on the environment during construction.



Recyclable blades for RWE's Kaskasi wind farm (credit RWE).

### Onshore wind projects

RWE operates more than 200 onshore wind farms worldwide. In Germany, France, the United Kingdom, Italy, Poland, Spain, Sweden, and the US 17 projects with a total capacity of over 600 megawatts (MW) are under construction. These include the 200-MW project Montgomery Range in Texas.

Supply chain is in fast growing markets of utmost importance. RWE recently signed a framework agreement with Siemens Gamesa, securing fixed delivery dates and a structured price settlement for European onshore wind farms. Such agreements between companies are one way to increase planning security for both developers and manufacturers and to support the necessary supply chain build out of manufacturing capacities in view of expansion targets in Europe and the US.

### Offshore wind projects

RWE operates 19 offshore wind farms with a pro-rata installed capacity of about 3.3 GW in five countries and intends to more than double its offshore capacity to 8 GW by 2030. Two offshore wind farms, Thor in Denmark and Sofia in the UK, with a total capacity of 2.4 GW are under construction. Offshore wind is gaining momentum in the US where RWE is taking a leading role. In 2022, RWE secured seabed leases in offshore wind auctions off both the east and the west coast, with a total capacity of 3.9 GW (RWE share).

RWE's experience in deploying seabed-fixed offshore wind combined with its in-house engineering expertise and global approach means that

the company is particularly well placed to become a market leader in floating wind and unlock the large-scale potential of deep waters around the world. To gain early experience and a broad technical knowledge, RWE is participating in several high-profile floating demonstration projects, each based on a different foundation concept. The demonstration projects are already providing unique insights into the particular challenges and opportunities of this relatively new technology.

### RWE in the Netherlands

The Netherlands has put offshore wind energy at the heart of its strategy to achieve its sustainable energy goals. By 2023, the Netherlands will reach about 4.7GW of total installed capacity and offshore wind turbines will supply 3.3% of all energy in the Netherlands. Around 2030, there should be about 21 GW of offshore wind farms. These will then supply 16% of all energy in the Netherlands and 75% of current electricity consumption. These developments put the Netherlands in a leading position in offshore wind.

Winning the tender for the construction of the Hollandse Kust West VII wind farm marks RWE's entry into the Dutch offshore wind market, one of our key strategic growth markets in Europe. At the same time, it confirms that RWE's years of knowledge and expertise are unique. This wind farm of more than 760 GW off the Dutch North Sea coast is currently in the development phase. RWE's perfect match of energy supply and demand through full system integration and innovation serves as a blueprint for a new generation of offshore wind farms.



## Success in Dutch offshore wind tender

Hollandse Kust (west)





Hollandse Kust West VII wind farm.

Furthermore, the Netherlands aims to generate at least 35 terawatt hours (TWh) of renewable energy by 2030 from onshore wind and large solar projects. As of the end of 2022, there is a total of 6,045MW of onshore wind capacity. Of this, 759MW was realised in 2022. With the projects now under construction, total wind power capacity could reach 6,880MW by the end of 2023. RWE currently operates 11 onshore wind farms in the Netherlands with a total capacity of 402,5MW and 1 wind farm of 20MW is under construction.

Despite the many challenges RWE is facing within onshore wind such as obstruction lighting, distance between homes and the wind turbines and noise standards, RWE is determined to actually bring the RES ambitions to completion, within the envisaged timelines. In all projects RWE closely collaborate with governments, science and nature organisations, as well as local stakeholders.

RWE believes it is important not only to focus on increasing our renewable energy capacity, but also to work on doing business responsibly with our social stakeholders and direct and indirect supply chain partners beyond current legislation.

This is why RWE has recently signed the agreement (IRBC) with the ambition to become fully compliant with OECD Guidelines & the UN Guiding Principles. By working together, sharing knowledge and continuously researching and innovating, we continue working in an efficient, smart and climate-friendly way.

## PORT OF NICKERIE



The main goal of the partnership is to take an innovative and novel approach to the development of the port.

# Green port development in Suriname

Suriname, one of the three carbon-negative countries on Earth, is set to develop Port of Nickerie with the help of the Van Aalst Marine & Offshore. In an interview with Wijnand van Aalst, CEO of the Van Aalst Group, Vidjai Doerga from the Phoenix Development Company and Raantdew Gadradj, QHSE Manager of the Van Aalst Group, the two parties discussed their partnership and the goals they hope to achieve in the development of the port.

Joining them on this visit was Albert Egbert Jubithana, Minister of Transport, Communication, and Tourism of Suriname, from the government of Suriname to overlook the partnership and make sure that the environmental considerations are highly prioritised in the project development.

The main goal of the partnership is to take an innovative and novel approach to the development of the port. As Vidjai Doerga explained: "Suriname has a very sensitive environment and developing industries such as oil and gas, which can have a significant impact on the environment, is difficult to do the right way. The Suriname government wants to bring together all the different components of the industry to take care of the people that run the industry, all the way out to the actual equipment being used, and the Van Aalst Group is one of the market leaders in this sector."

The partnership with the Van Aalst Group will push the project to the level it should operate. The responsibility for the environment is one of the things that the Suriname government take the most seriously when developing the country. The Van Aalst Group also shares this view and will contribute their expertise in the early developmental stages to ensure that they approach the development of the Port of Nickerie in the right way.

The CEO of the Van Aalst Group, Wijnand van Aalst, added that their mission statement for over 15 years has been to be a leader in technologies that are environmentally driven and to take care of the responsibility of their family company. They want to significantly reduce the environmental impact of certain operations, and they have the technology to do so. In the development and operations of the gas fields at the Port of Nickerie, which are part of the carbon industry, they will support it in a way that is environmentally responsible. They believe that the world needs energy, and they have a strategic value to support the environment.

The Suriname government and the Van Aalst Group have a shared vision for developing the Port of Nickerie. They both prioritise the environment and want to approach the development of the port in the right way, considering the impact on the people and the equipment being used. With the Van Aalst Group's expertise and commitment to environmentally responsible solutions, they hope to turn Suriname into an incredible vision of the future.

GSR WELCOMES REGULATORY FRAMEWORK

# Belgian government approves deep seabed mining law



Global Sea Mineral Resources (GSR), a subsidiary of the DEME Group, welcomes the Belgian federal government's approval of a preliminary draft law regarding national deep seabed mining (DSM) regulations.

The new law, once it has been ratified by the Parliament, sets out the conditions under which Belgium companies can establish commercial operations to collect minerals from the ocean floor.

**The law mandates strict environmental standards that will ensure deep-seabed mining activities do not cause any unacceptable damage to the marine ecosystem.**

DSM will only be permitted under Belgian law if international and national environmental objectives are respected.

"This is an important step in the journey towards a stable regulatory environment for the marine minerals industry," said Kris Van Nijen, Managing Director of GSR. "Belgium is taking a lead in establishing regulations at the national level. We look forward to next month's

meeting of the International Seabed Authority where adoption of draft regulations for commercial activity will be on the agenda."

"It is in the interests of all stakeholders that a robust regulatory framework for commercial deep seabed mining is adopted by the ISA Assembly. Formal adoption of a regulatory framework will not signal the start of commercial deep seabed mining. It will merely establish the rules under which an application for a licence can be considered."

**He continued: "The real significance of adoption is regulatory certainty. Having the rules in place is the best way to ensure the effective protection of the marine environment, as required by the UN Convention on the Law of the Sea and will give contractors and investors the confidence they need to complete crucial research into the environmental effects of deep-seabed mining."**

"There is good reason to believe that collecting minerals from the seabed may be one of the more responsible ways to meet spiralling demand for clean energy resources like nickel, cobalt and manganese. With regulatory certainty, the research can be completed with confidence and all stakeholders will be able to make assessments based on detailed, robust information."

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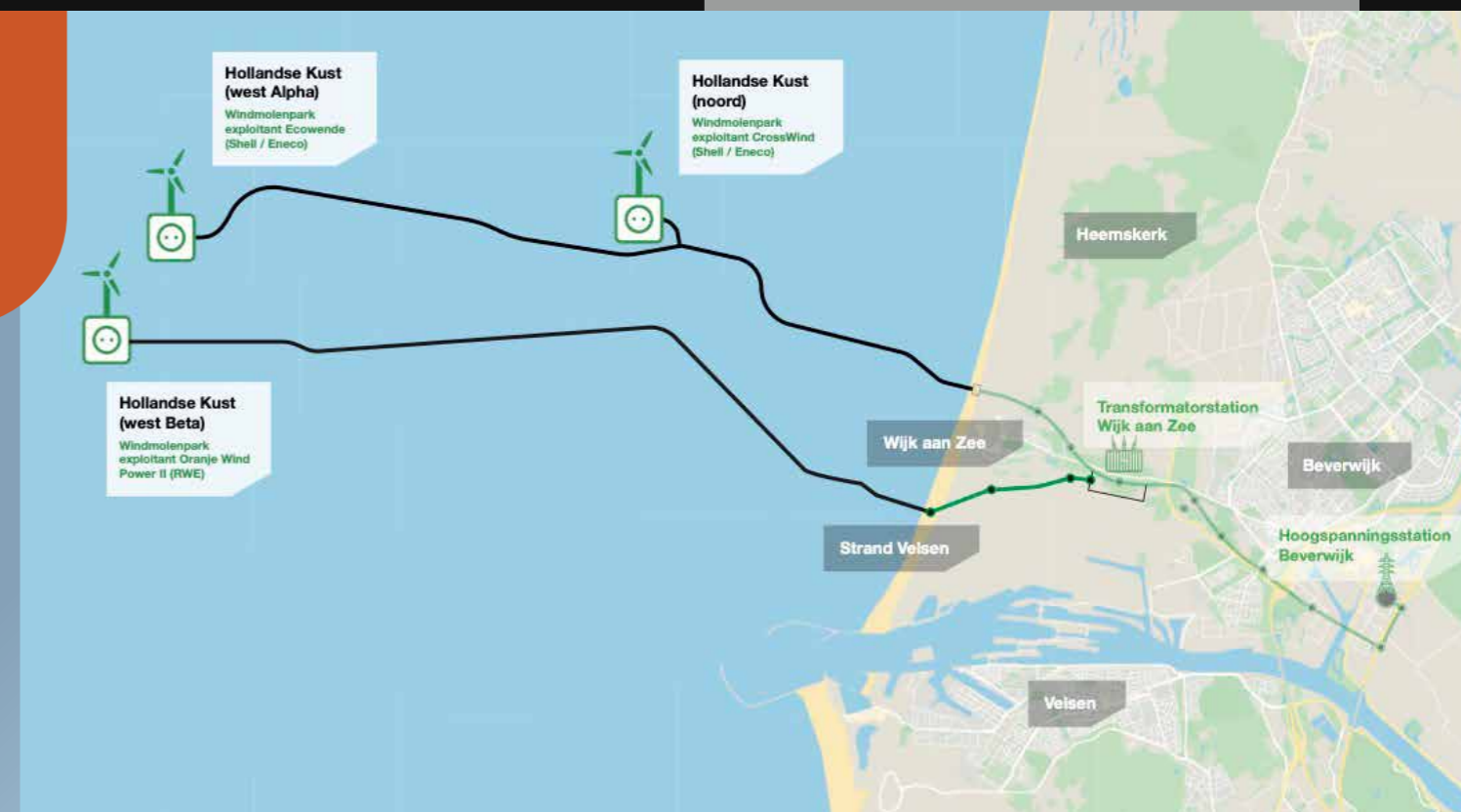
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JAN DE NUL COMPLETES JOB FOR TENNET

# Installation of second sea cable for West Alpha



With the cable-laying vessel Isaac Newton, the work vessel Adhémar de Saint-Venant and a remote-controlled cable burial vehicle, the contractor combination Jan de Nul Group/LS Cable & System has completed the installation of the second subsea cable for the offshore wind farm Hollandse Kust West Alpha.



In recent weeks, more than sixty kilometers of cable have been laid in the seabed between the beach of Heemskerk, the Netherlands, and the 'socket' that grid manager TenneT is having built at sea.

Last summer, Jan de Nul pulled four sea cables from the beach of Heemskerk in conduits under the dunes. After the installation of the two sea cables for the Hollandse Kust (north) wind farm, the first kilometers of the two cables for 'west Alpha' were laid capped in the seabed. After the successful installation of the first sea cable, Jan de Nul brought the capped part of the second cable for 'west Alpha' above the water in April - about five kilometers from the beach.

### Turntable

After the coupling by the team of the South Korean cable manufacturer LS Cable & System, the cable was laid back on the seabed. At the same time, the work vessel Adhémar de Saint-Venant appeared off the coast with the UTV1200 unmanned cable-laying vehicle on board. As soon as the Isaac Newton set sail, the cable slowly unwound from the large turntable on board. Later followed by the Adhémar de Saint-Venant for the steering of the UTV1200, which then laid the cable in the seabed.

### Off the coast

TenneT had the steel jacket for the transformer platform placed on the seabed 50 kilometers off the coast of Egmond aan Zee last August. The turbines of the wind farm will soon be connected to this socket. With the retraction of the last cable via the cable deck, the job is done for the contractor combination.

### Performance

Thijs den Hamer, project leader on behalf of TenneT, looks back with satisfaction on this part of the project.

**“With the installation of the sea cables for the wind farms 'north' and 'west Alpha', the contractor has delivered a great performance within the intended schedule. After the summer, we will have the ready-made superstructure (topside) placed on the base, after which we can test the cable connections.”**

### Partly tested and ready

For testing, this concerns the connection between the socket for 'west Alpha' and the transformer station in Wijk aan Zee. Den Hamer: “From the transformer substation in Wijk aan Zee to our high-voltage substation along the A9 motorway near Beverwijk, all circuits for the three wind farms Hollandse Kust (north), (west Alpha) and (west Beta) have already been tested and are ready for use.”

### Connection West Alpha

Once the tests are completed, TenneT will deliver the connection for 'West Alpha' in the first quarter of 2024. It will then be the turn of operator Ecowende (Shell/Eneco) to have the wind farm built, so that the turbines at sea can produce energy from wind in 2026. With a capacity of 700 megawatts, the amount of sustainable energy that will then be brought ashore by TenneT corresponds to 2.5 to 3 percent of current consumption in the Netherlands.

## REACTOR REPLACEMENT OVER A LONG DISTANCE



Lifting the sub-reactor on the pre-assembly area.



Pivoting the sub-reactor in the direction of the plant.

# Smart lifting solution minimized disruptions to ongoing operations

At the POX methanol plant at the chemical site in Leuna, Germany, all reactor units, consisting of reactor, sub-reactor and waste heat exchanger, are to be replaced. TotalEnergies Raffinerie Mitteldeutschland, operator of the plant and Europe's largest methanol producer, was looking for capable partners for this project. Mammoet was contracted to replace the first and the second reactor.



Lifting the sub-reactor to the installation position.

A complete shutdown of the plant was not possible, as the required production volume had to be always guaranteed. Therefore, only one reactor at a time could be removed and replaced. What was required, therefore, was a flexible and safe solution that would disrupt operations as little as possible.

### Efficient solution

A preliminary engineering study carried out by Mammoet concluded that the most efficient solution to replace the reactor unit would be to use a Liebherr LR 1750 crawler crane. It can lift and move a load of 140t at the same time, as well as perform all other lifting operations. This was necessary because, due to space limitations, the pre-assembly and storage area for the components was located approx. 200m from the installation position.

In order to safely lift the steel construction module, completely fitted with equipment, whose center of gravity could not be precisely calculated but was in any case off-center, Mammoet used its specially developed COGAS winch with four-point rigging.

The winch acts as a center-of-gravity balancing system. The operator controls the winch via a remote control and can change the length of the individual rope strands so that the crane hook exactly matches the component's center of gravity.

By offering everything from a single source, from engineering to crawler crane delivery with rigging to execution with its own personnel and special equipment, the team reduced the number of interfaces and contributed to safe project execution while the plant was in operation.

### Early completion

The mobilization and preparation of the crawler crane took place over the New Year. Despite the holidays, the team's high level of dedication meant that the crane was ready to lift on time.

First, the old reactor and the old sub-reactor were removed one by one, transported by the crawler crane to the laydown area about 200m away, and stored there. Special demolition chains were used for rigging. The heavy-duty rigging was then modified, and the new components were lifted into place with the LR 1750.

The new sub-reactor, weighing 120t, was already stored upright at the pre-assembly area. It was attached, lifted, moved around 200m to the plant on the hook of the crawler crane and pivoted into place. The new reactor, weighing 140t, followed in the same way.

Finally, the steel construction module, weighing 100t, was lifted and moved safely into position using the Mammoet COGAS winch.

## BARRYROE OFFSHORE ENERGY TO WIND DOWN BUSINESS



# Barryroe Offshore Energy to wind down business

**Barryroe Offshore Energy has announced its intention to wind down the business and has suspended trading in its shares. The company said it will initiate an 'orderly' wind down of the business, through a Creditors Voluntary Liquidation (CVL). It said an EGM will be held next month to seek shareholder approval for the appointment of a liquidator to the company.**

"The company's ordinary shares will remain suspended until such time as its funding situation is resolved or until the CVL process is complete, in which case the admission of the Company's shares will be cancelled," a spokesman of Barroe said.

**He said discussions with major shareholders as regards possible renewed funding for the company are continuing and will be pursued up to the date of the EGM.**

"There can be no guarantee that these discussions will be successful such that additional funding will be secured," he added.

Earlier this month, the energy exploration company said it was engaging with its largest shareholders regarding potentially providing future funding to the company.

**The move followed the recent 'surprising and extremely disappointing decision' by the Minister for the Environment to refuse to grant a lease undertaking to allow it continue work on its main prospect off the south coast of Ireland.**

"If funding is not secured in the short term one of the options being considered by the Board is an orderly wind down of the Company in a process of Creditor Voluntary Liquidation," the company said at the time.

In a statement mid-June, the Chairman of Barryroe Offshore Energy Peter Newman said it has been a 'disappointing' and 'deeply frustrating' time for shareholders, management and the board.

"The funding solution put in place in November 2022 secured €40 million held on deposit in escrow, ready to drawdown as needed, sufficient to fully cover the costs of the proposed appraisal programme. Notwithstanding that secured funding, in assessing the company's financial capability to deliver this commitment, the Minister has seen fit to apply his discretion, relying on reference to one, non-mandatory, 'financial capability guideline', arguably inconsistent with the limited scope of the work, thereby denying all efforts to progress appraisal of the Barryroe oil and gas field," he said.

"In consequence the country has lost an opportunity to improve Ireland's energy security, to reduce the emissions associated with importing oil and gas, to provide employment and future tax revenues and to diversify the country's sources of primary energy supply. All at no cost to the public purse," Newman added.

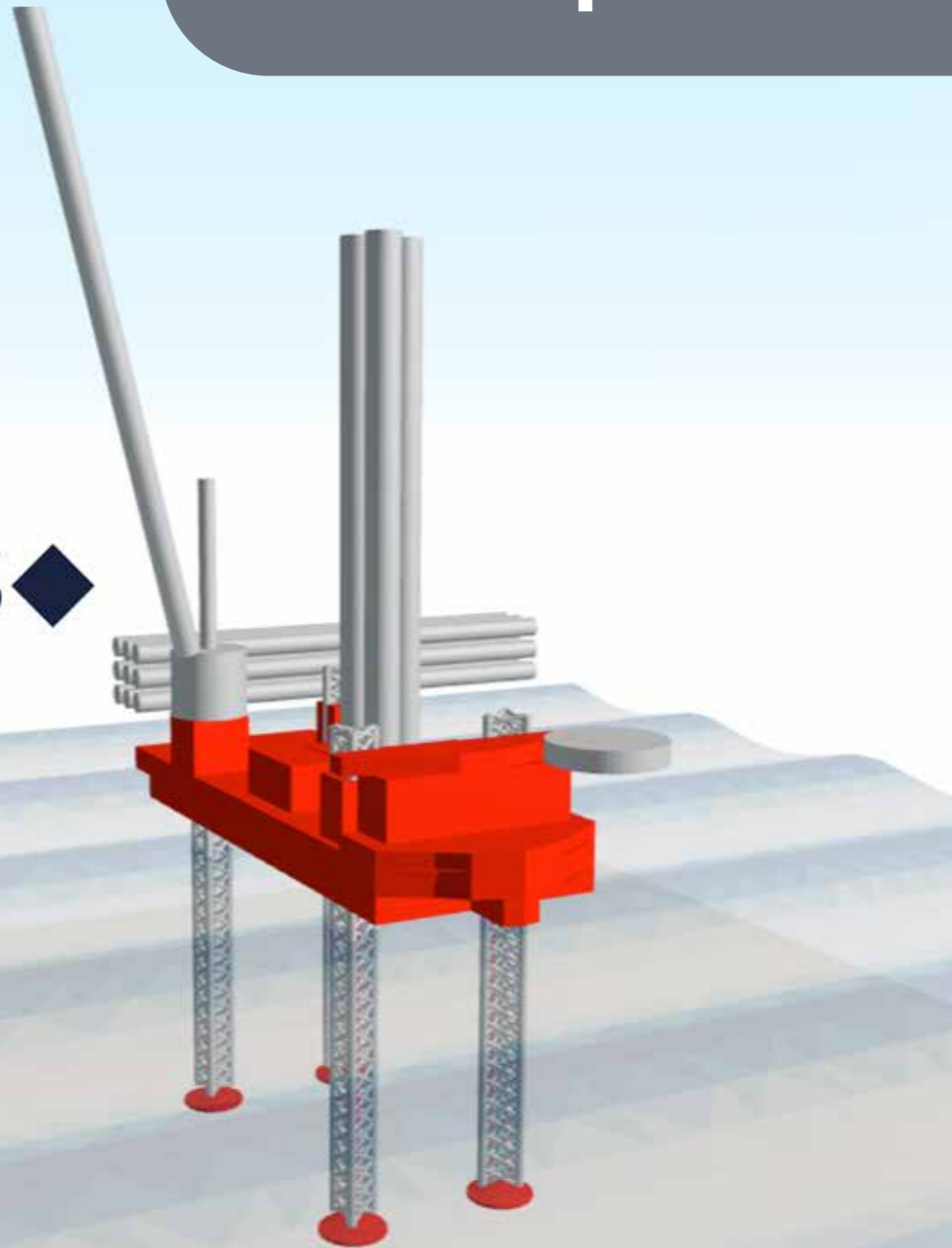


WHAT CAN GO WRONG?

# Monitoring of offshore operations

Most engineers active in the offshore energy business have, at some point in their career, sat in on a HAZID meeting where a critical risk had to be mitigated. One of the attendees (typically a manager) suggests that a monitoring campaign should be carried out. A wonderful idea!

CALYPS 



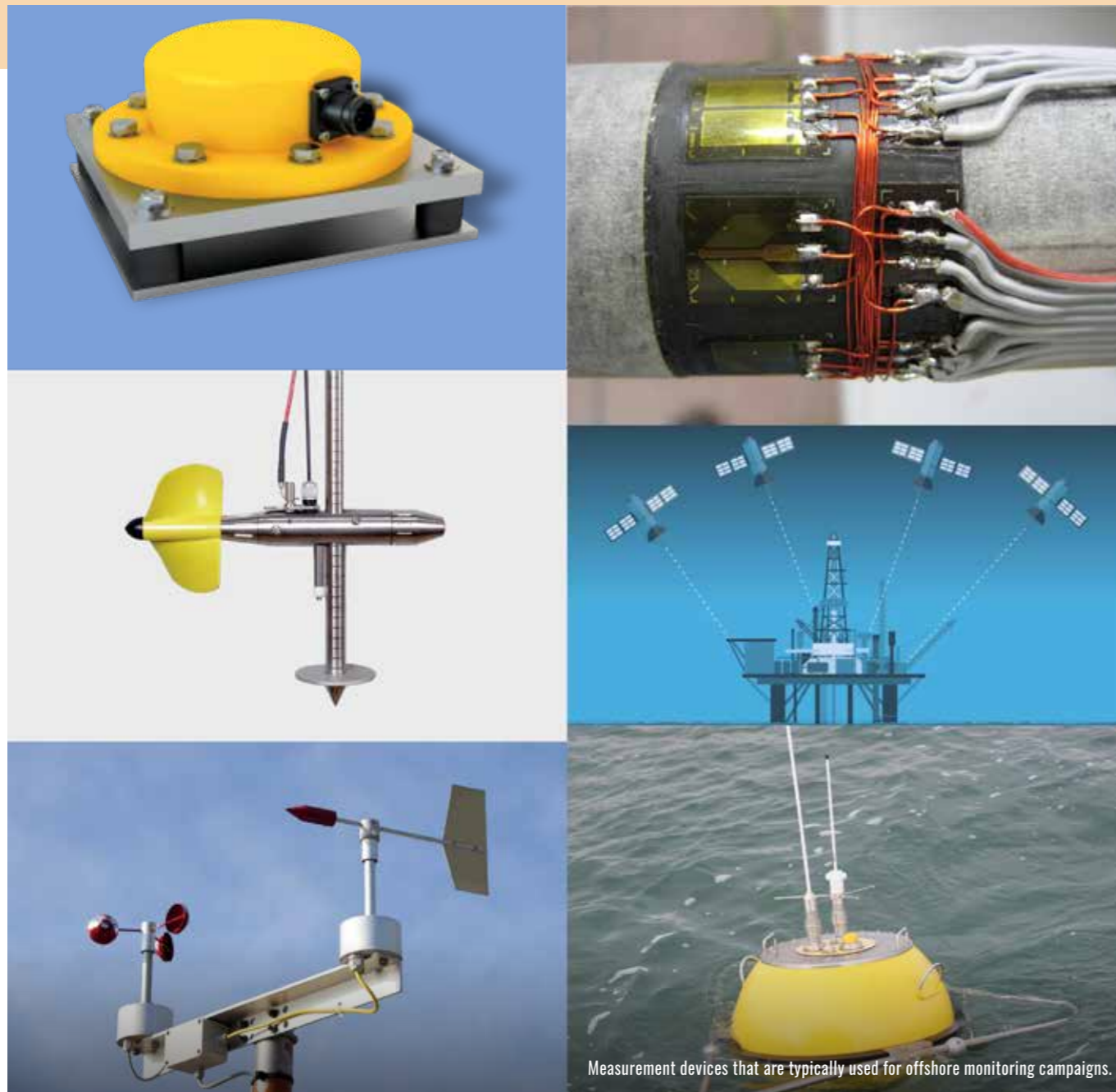
Case study model.

Most stakeholders tend to agree, because they see only benefits. Monitoring does not affect operations, costs are limited as compared to typical day rates (let alone the consequences of the risk it intends to mitigate) and everybody looks like they are taking responsibility.

A monitoring campaign is devised to measure and check an offshore operation, for instance a complex heavy lift. It could include the following:

- Motion Reference Units (MRU) for measuring quickly varying motions in six degrees of freedom of the offshore unit and the load. MRUs measure accelerations in translation and velocities in rotation. These can be converted to position by integration over time, minding drift. Since gravity is an acceleration, MRUs know where is up and where is down. Every smartphone has an MRU and to many it is somewhat preposterous that not every object offshore is equipped with one.
- High-precision GPS for measuring longer term motions in the horizontal plane (position and orientation). These systems are typically used for positioning of mobile offshore units. They are relatively expensive and are continuously operated by a specialist and his back-to-back.

- Wave rider buoy or downward looking wave radar. These frequently used systems measure the instantaneous water surface level at great accuracy at a specific location. Processing to identify the wave energy density distribution over distinct frequencies is commonplace, but over distinct directions is hard and often impossible.
- Wind sensor / anemometer. Simple and cheap measurement device for wind speed at a specific location. Measurement quality is highly dependent upon location and vulnerable to shielding effects.
- Current measurement device (either propeller or acoustic based). These devices measure current at a specific location either at a specific depth or for the entire water column. When hung of from a vessel, the vessel presence will severely influence the measurement.
- Strain gauges. Contrary to popular belief, these devices do not measure stress (let alone force) but accurately measure local strains. Many strain gauges, at often hard to reach places, in addition to detailed knowledge and assumptions about a structure are required to translate strain measurements to cross-sectional stress and force.



Measurement devices that are typically used for offshore monitoring campaigns.

One often overlooked form of measurement is a calibrated environmental now-cast. Now-cast is similar to environmental forecast and provides detailed wind, wave and current information. The now-cast is based on a detailed model of the sea and weather and is continuously calibrated based upon real-time (mostly satellite-based) measurement. The now-cast, more than any measurement, aligns greatly with the desktop engineering reality as well as the on-board engineering reality due to the similarity with the environmental forecast. Much more about this in an upcoming article.

Now, back to how most offshore monitoring campaigns come into existence.

Engineers enjoy performing monitoring campaigns because something is to be learned about the on-board reality, which is greatly different from

the desktop reality. HSE officers like them because they provide a sense of control over risks. Managers like them because they provide big data and a sense of ownership. Offshore unit owners like them, because they feel that somehow the acquired data can be capitalized upon for future projects.

And thus, during already stressful mobilization, an uncoordinated pack of measurement specialists boards the offshore unit and starts planting devices, pulling wires and fighting with the chief electrician over whether the right ports are opened on the firewall or not.

The offshore operations commence, and measurement starts interfering ('Can we perform this lift if we don't receive signal from our wave rider buoy?', 'The measurements and forecast disagree, should we use the



What people outside our industry think HAZID meetings look like.

most onerous?', or, more existentially: 'If my current position cannot be accurately measured, am I really here?').

Usable measurement results are expected once the operation is done and over. Reports are provided from the various parties performing measurements. Desk studies trying to tie all the data together into firm, usable conclusions tend to struggle because some crucial element is unclear ('Why is there a sudden list occurring here?', 'Why do the motion measurements seem to conflict?', 'The MRU knows where is up, by why did no one report whether the x-axis aligns with forward or starboard?'). Engineers may be pressed to declare that, based on the measurements, the operation was even more safe than anticipated.

None of the expensively acquired data can be used to capitalize upon for a next similar operation, because without a firm understanding of underlying physics, minor differences cannot be accounted for. The operation was successful, so everyone will be happy at the end, but the success of the monitoring campaign was nothing more than a very expensive ticking the box.

**What went wrong? Are monitoring campaigns worthless exercises? What can be done to improve this? Did it occur to you, reader, that at the start of this article, the contents of a monitoring campaign were introduced as a mere list of measurement devices?**

Measurements alone will lead to data only. A measurement campaign should start with questioning which engineering uncertainties are to be minimized through measurement. The answer to that question allows an experienced engineer, with a strong basis in both desktop reality and on-board reality, to devise a scope of work for analysis to be performed. One of the inputs into the analysis is well-specified measurement data. The analysis should lead to a firm grasp on the physics behind the actual behavior of the offshore spread. The monitoring campaign should bridge the gap between the on-board engineering reality and the desktop engineering reality.



### About Maas Hoogeveen

Maas is a seasoned professional in the offshore industry, with 12 years of experience focused on jack-ups. He has been involved in many rig moves and heavy lifts, both at his desk and on board. He managed several monitoring campaigns on jack-ups and heavy-lift vessels. As the founder and director of Calypso, a leading jack-up engineering and consultancy firm, Maas leads a team of experts dedicated to support clients to elevate their jack-up operations. With his extensive knowledge and passion for the field, he consistently contributes to safety, efficiency, and innovation in offshore operations.

ECOWENDE ANNOUNCES SET OF MEASURES

# HKW: most nature-friendly wind farm



Ecowende is going to build the Hollandse Kust West-alfa wind farm in harmony with nature, with minimal impact on birds, bats and marine mammals, and with a thriving underwater world. The aim is to enable offshore wind farms to have a net positive impact in the near future. This is a key condition for eventually achieving the ambition of 70 GW of offshore wind energy by 2050 without exceeding the ecological limits of the North Sea.

The joint venture of Shell and Eneco is going to implement various innovations, large-scale mitigating and stimulating ecological measures, and an extensive above and under water monitoring and research programme.

"When putting together our set of measures in consultation with a broad group of experts, we have taken into account the measures that are already being implemented in the wind farms around us as well as the latest scientific findings. Some of the measures will have an immediate impact, while many other are intended to try out new methods and fill knowledge gaps. The knowledge that we possess on the effects of wind farms on nature is not yet complete. This knowledge is indispensable if we want to expand offshore wind energy in the Netherlands in a responsible manner," explained Folkert Visser, CEO and project director of Ecowende.

### Better situation

Ecowende aims to reduce the negative effects of its offshore wind farm through various innovations. These include increasing the height of the lowest tip of the rotor blades, creating a corridor to Natura 2000 area the Brown Bank by placing the turbines extra far apart, and an option to bring the turbines to a standstill that adapts to the flight movements of birds in the wind farm. This way, Ecowende expects to minimise the number of bird and bat collisions. Ecowende will be using different technologies to monitor, investigate and adjust the effectiveness of this approach.

### Underwater world

Besides reducing the negative impact of its offshore wind farm, Ecowende also aims to implement ecological measures that could contribute to the development of wind farms that have a net positive impact. Ecowende is going to apply several innovative techniques that will help the underwater world to reflowerish. Biodegradable reef structures are being constructed using fruit trees sourced from Dutch fruit farms. These tree reefs offer a place for fish to shelter and reproduce. Ecowende will also install various forms of eco-friendly erosion protection and the oyster larvae network will be expanded to spread the native flat oyster population. "Our wind farm will develop into a diverse living environment that functions as a habitat and nursery for

many species, including hopefully even sharks and rays," says Hermione van Zutphen, ecology programme manager at Ecowende.

### Holistic

Ecowende applies a holistic approach to the construction and operation of the wind farm, and the selection of ecological measures. Visser explains: "The North Sea is an ecosystem, in which everything is interconnected. Measures can therefore not be seen in isolation. Although the effects of measures differ per species and we therefore adapt the measures for each species, we expect synergy to emerge between different measures." Van Zutphen adds: "For example, the North Sea is an important feeding area for seabirds and they too benefit from a flourishing underwater world."

### Field lab

Gathering and sharing knowledge are key spearheads of Ecowende. Visser: "We link more than 50 years of North Sea experience of our shareholders and partners with the knowledge of leading ecological experts and the innovative capabilities of science. Our wind farm will be one of the largest offshore field labs in the world, where we will experiment with new techniques. In this field lab, we will also give other researchers and startups room to test their innovations in an offshore environment."

In order to make a real impact and a significant contribution to the roll-out of offshore wind energy in harmony with nature, both in and outside the Netherlands, Ecowende ensures that the knowledge and experience gained on ecology and offshore wind energy will be shared widely. Not only with scientists, policymakers, nature organisations and the general public, but also with other stakeholders, such as wind farm developers.

### Location

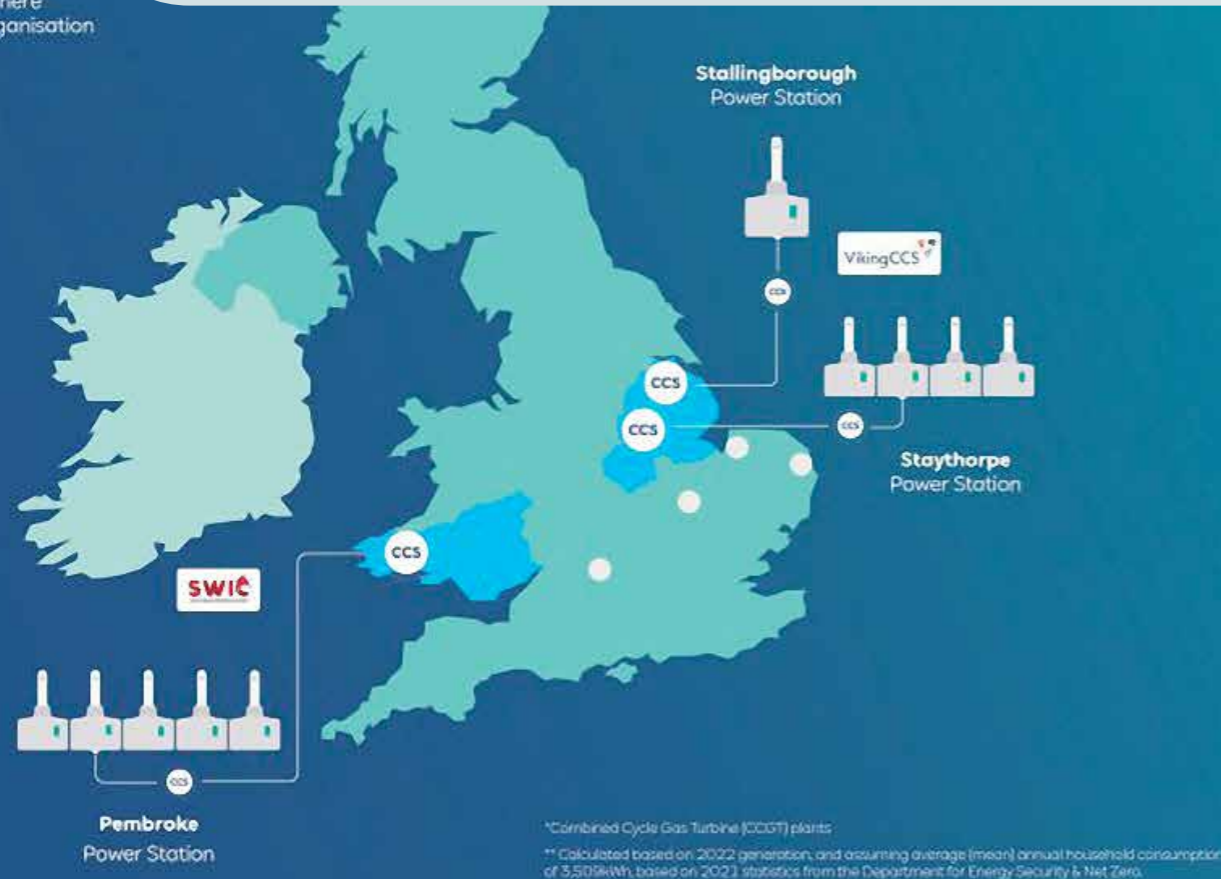
Ecowende's wind farm at Hollandse Kust (west) lot VI will be located some 53 kilometres off the Dutch coast at IJmuiden. With an installed capacity of about 760 MW, Ecowende can 'green' about 3% of the current Dutch electricity demand. The wind farm is planned to be commissioned in 2026. [Click here for more information about Ecowende, including the full overview of innovations and ecological measures.](#)

ACHIEVING CLIMATE PROTECTION TARGETS

# Another important building block is carbon capture

Key

- RWE's initial three carbon capture projects
- Other RWE gas plants\*
- Industrial clusters where RWE is a partner organisation



Mid-May RWE announced plans to carrying out feasibility studies, preparatory work and investigating options for carbon capture technology at three of its sites across the UK.

At the gas-fired power stations Pembroke and Staythorpe RWE is testing the feasibility to retrofit carbon capture technology. The company is also developing proposals for a new carbon-capture, gas fired power station at Stallingborough in North East Lincolnshire. These projects would secure up to 4.7 GW of generation while capturing a staggering 11 million tonnes of CO2 per year. To put that into perspective, this equals the removal of about 2.2 million petrol cars from the road.

All three projects are close to proposed CO2 networks or will have access to shipping facilities, which would enable the CO2 to be safely transported and stored by third parties. For that RWE has developed partnerships with industrial clusters South Wales Industrial Cluster (SWIC) and Viking CCS in order to develop these transportation and storage options.

Where possible, utilisation options for the captured CO2 will be targeted.

Decarbonising the power sector is a daunting task. Not only is it necessary to massively expand renewable energy capacities and ramp-up storage facilities - RWE also needs to focus on technologies such as carbon capture and storage (CCS). The IPCC report from 2022 for example points this technology out as an integral part to reduce carbon emissions and slow down climate change.

Gas-fired power stations, equipped with CCS technology, could provide energy security by backing up solar and wind capacities when the wind is low or there is no sun. In the race to net zero, these projects would be a viable solution and an essential tool.

GLOBAL RENEWABLES ALLIANCE AND IRENA



## MoU for global commitment ahead of COP28

The Global Renewables Alliance and the IRENA signed an MoU to create a unified vision for a rapid, sustainable, affordable and inclusive energy transition.

The partnership will have a laser-targeted focus on ensuring the delivery of renewable energy around the world, and ensure policymakers work to remove the bottlenecks that could hinder the rapid growth in renewable capacity that the world needs to stay on the 1.5°C pathway.

COP28 represents the last major chance for the world to get back on track to meet climate goals.

The organisations will collaborate on a series of position papers, policy recommendations and events, culminating in activities and crucial, action-oriented discussions at a dedicated hub that puts renewable energy at the very centre of discussions in COP28, Dubai. The work carried out at this hub will deliver leadership and decision making to ensure genuine implementation.

Bringing collaboration between governments, industry and other key stakeholders from all parts of the world to the heart of COP28 will ensure no one is left behind and holistic, clean energy solutions can deliver a path to sustainable development for the whole world.

The two organisations are also collaborating on raising awareness and accelerating high impact corporate sourcing of renewable energy, specifically hourly matching (24/7 CFE).

International Renewable Energy Agency director general Francesco La Camera said: "Now more than ever we must redesign international cooperation and enhance closer collaborations with major players to accelerate and scale up the energy transition. It is a pleasure to take this significant step with the alliance, as some of its founding members have been an active part of IRENA Coalition for Action's family. I am convinced that this new partnership with leading voices of renewables will catalyse tangible commitments at COP28 and beyond, further amplifying our joint efforts to get the transition back on track."

EUROPE'S BIGGEST GAS SUPPLIER EQUINOR



Jannicke Nilsson, executive vice president for Safety, Security & Sustainability  
 (photo: Arne Reidar Mortensen / Equinor)

All clear from pipeline security checks

*'It's not gone. What happened with Nord Stream 1 and Nord Stream 2 is a very clear reminder of how far some people are willing to go'*

Jannicke Nilsson, executive vice president for Safety, Security & Sustainability.

**Inspections of Norway's offshore gas pipelines after the Nord Stream blasts found nothing suspicious, an executive at energy major Equinor (EQNR.OL) told Reuters, in the first official word on the security sweep.**

However, risks remain after last year's still-unexplained explosions at the Nord Stream pipelines built to carry Russian gas to Germany via the Baltic Sea, warned Jannicke Nilsson, who manages security for Equinor.

Europe's largest gas supplier after a drop in Russian flows last year, Equinor also acts as technical service provider for offshore pipelines operator Gassco. It launched the inspections shortly after the explosions on Sept. 26.

"We did find the things that we wanted to check, and when we checked it, it was OK," Jannicke Nilsson, Equinor's executive in charge of security, safety and sustainability, said in an interview with Reuters.

The company said inspections had been conducted to identify anything out of the ordinary, like damages, foreign objects or any changes to how the pipelines are covered on the seabed.

Nilsson, who rarely gives interviews, spoke about how the war in Ukraine and the Nord Stream explosions have changed the operations of Norway's largest oil and gas producer.

Despite underwater inspections not finding any suspicious objects along Norway's key pipelines, the threat of an attack was still present.

"It's not gone. What happened with Nord Stream 1 and Nord Stream 2 is a very clear reminder of how far some people are willing to go," she said.

**NATO help**

Equinor was working with authorities in Norway, the European Union, Britain and military alliance NATO on what the company can do to prevent such an attack, she added.

Norway is a member of NATO but not of the European Union. Last summer, Norway designated Equinor and Gassco as companies critical to national security, allowing security services to share relevant classified information.

**After the Feb. 24 invasion, some Equinor executives including Nilsson received security clearances from Norwegian authorities, allowing them to read intelligence reports.**

In January, Equinor CEO Anders Opedal went to NATO's headquarters in Brussels to speak about protection of the West's offshore infrastructure, such as pipelines and cables.

After the Nord Stream blasts, the Norwegian Navy and NATO allies patrolled around offshore oil and gas platforms. In February, NATO established a Critical Undersea Infrastructure Protection Cell to improve cooperation with the industry.

"If we need assistance, the Norwegian military and NATO would provide resources... they would be here quickly," Nilsson said.

Reporting by Nerijus Adomaitis, Editing by Gwladys Fouche and Andrew Cawthorne

## ANNOUNCEMENT DANISH GOVERNMENT



# New policy framework wind auction

The Danish government has announced a new policy framework for upcoming offshore wind auction rounds, setting ambitious goals to reach the 2030 targets.

The update includes new guidelines for sustainability criteria, options for overplanting, focus on security of supply and the role of the state as a co-owner.

Key take aways from the announcement:

- 9 GW envisioned to put up for tender this year, with the latest operation date set for 2030.
- The capacities on offer are: Nordsøen I (3 GW), Kattegatt II (1 GW), Kriegers Flak II (1 GW), Hesselø (0.8-1.2 GW) and 3 GW of offshore wind around Bornholm Energy Island.
- Of the 6 GW offshore wind areas, The Danish state will be a co-owner of 20%.
- The option of free overplanting, i.e., freedom to set up more offshore wind farms than has been politically agreed. The option implies that the envisioned 9 GW to be awarded can reach 14 GW.
- Increased focus on sustainability in the tender, where among other things, prepare a third party verified life cycle analysis and that the developers must monitor their nature and environmental effects.

Denmark currently has 2.3 GW of offshore capacity, with a target set for 2030 at 12.9 GW.

## NORWEGIAN GOVERNMENT

# New ocean industry - seabed mineral activities

The Norwegian government proposes to open parts of the Norwegian continental shelf for commercial seabed mineral activities. In addition, the government presents a strategy demonstrating how Norway aims to be a global leader in a fact- and knowledge-based management of seabed mineral resources.

Environmental considerations will be safeguarded throughout the value chain, and extraction will only be permitted if the industry can demonstrate sustainability and responsible practices.

“We need minerals to succeed in the green transition. Currently, the resources are controlled by a few countries, which makes us vulnerable. Seabed minerals can become a source of access to essential metals, and no other country is better positioned to take the lead in managing such resources sustainably and responsibly. Success will be crucial for the world’s long-term energy transition,” says Minister of Petroleum and Energy, Terje Aasland.

Norway has significant anticipated mineral resources on the seabed. If proven to be profitable and extraction can be done sustainably, seabed mineral activities can contribute to value creation and employment in Norway while ensuring the supply of crucial metals for the global energy transition. Extraction of minerals could become a new and important industry for Norway.

“To acquire more knowledge, we need to gather expertise and open for commercial mapping, exploration and extraction of seabed minerals. Therefore, we are proposing to open an area on the Norwegian continental shelf for mineral activities,” says Aasland.

Seabed mineral extraction holds significant future potential for value creation, and the government aims to facilitate value creation and future job opportunities in the ocean industries. Norway has extensive experience in business operations and sustainable management of ocean areas, along with strong research and technology communities associated with the ocean and its resources. This provides a solid foundation for developing profitable seabed mineral activities.

Existing knowledge indicates that mapping, exploration, and closure have minimal environmental impact. Any extraction will only be approved if the rights holder’s recovery plan demonstrates that the extraction can occur in a sustainable and responsible manner.

Aasland: “Seabed mineral activities are a new industry, both globally and in Norway. Currently, we have limited knowledge about the deep-sea areas where the resources are located. I firmly believe that if the industry identifies resources that they consider economically viable to extract, it will be possible to extract these resources sustainably and responsibly. We will proceed step by step, continue building experience, and base our regulatory framework on facts and knowledge. Environmental considerations will weigh heavily throughout the value chain.”



Minister of Petroleum and Energy, Terje Aasland.

**DEZE PAGINA'S BEVATTEN NIEUWS VAN VAN IRO - BRANCHEVERENIGING VOOR DE NEDERLANDSE TOELEVERANCIERS IN DE OFFSHORE ENERGIE INDUSTRIE EN HAAR LEDEN.**

GENOEMDE ACTIVITEITEN ZULLEN ALLEEN DOORGANG VINDEN BIJ VOLDOENDE BELANGSTELLING VANUIT DE LEDEN.

HEEFT U INTERESSE IN DEELNAME OF VRAGEN OVER:

➤ **BEURZEN** NEM CONTACT OP MET JEROEN TRESFON, [J.TRESFON@IRO.NL](mailto:J.TRESFON@IRO.NL)

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➤ **OVERIGE ZAKEN** NEM CONTACT OP MET IRO, VIA [INFO@IRO.NL](mailto:INFO@IRO.NL) OF TELEFOONNUMMER 079-3411981.

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## TERUGBLIK GLOBAL OFFSHORE WIND



Woensdag 14 en donderdag 15 juni was Londen even het centrum van de offshore wind industrie. Global Offshore Wind is een compacte, zeer goedebeurs, waar de meeste belangrijke partijen acte de presence gaven, waaronder ook een aantal ontwikkelaars.

Vanuit Nederland was een flink aantal bedrijven aanwezig, waarvan tien op het Nederlandse Paviljoen, namens Wind & Water Works door IRO georganiseerd. Voorafgaand aan de beurs werden wij zeer gastvrij ontvangen op de Nederlandse Ambassade voor een receptie, zodat meteen met het netwerken kon worden begonnen. Al met al een succesvolle beurs met een goede vibe!

Bekijk [hier](#) de foto's.

## INTERESSANTE OFFSHORE ENERGY UPDATE MEI 2023

Deze 'Offshore Energy Update' van Richard Brakenhoff is de tweede release als onafhankelijk analist. In deze update komen een groot aantal onderwerpen aan bod:

- Van de vraag naar olie tot benodigde investeringen in hernieuwbare energie
- Van de ontwikkeling van de wereldwijde uitstoot van broeikasgassen tot de beschikbaarheid van mineralen die cruciaal zijn voor de energietransitie



Offshore Energy Update:

By Richard Brakenhoff (independent analyst)

Download de update [hier](#).

## ENERGIE HUBS ZIJN NODIG VOOR ENERGIE TRANSITIE



'Energy hubs' was het thema tijdens de jaarlijkse gezamenlijke bijeenkomst van CEDA-NL & IRO. Een onderwerp dat momenteel actueel is in de energietransitie en waar al veel onderzoek naar is gedaan.

Vragen als 'zijn energy hubs een toegevoegde waarde voor de torenhoge ambities voor schone energie?', 'waar staan we nu', 'welke mogelijkheden zijn er' en 'wat moet er nog gebeuren' kwamen

aan de orde. Chris Westra (Chris Westra Consulting), René Peters (Business Director Gas Technology TNO & IRO bestuurslid), Luuk Feenstra (Manager Business Development Hydrogen and Offshore Energyhubs, Nederlandse Gasunie) en Martijn Duvoort (Director Energy Transition, Arcadis) gaven hun vakkundige kijk op het onderwerp.

Een duidelijke conclusie is dat energie hubs nodig zijn voor de energietransitie. Daarnaast werd duidelijk dat waterstof niet alleen nodig is voor mobiliteit en industrie, maar ook voor de energietransitie, bijvoorbeeld als optie voor energieopslag. De productie van schone waterstof neemt veel ruimte in en dan is productie op zee een goed en veilig alternatief. En dan komen de energie hubs weer in beeld.

Lees [hier](#) de terugblik en bekijk de presentaties.

## IRO LID IN DE SCHIJNWERPERS: ORGA



Door middel van een kort interview zetten wij graag onze zeer gewaardeerde IRO leden in de schijnwerpers. Deze keer maken we kennis met Orga in een persoonlijk gesprek met Marko Nieuwenhuize, Strategic Business Development Manager.

### Waar blinken jullie in uit?

Dit jaar (2023) viert Orga haar 50-jarig bestaan. In deze tijd is Orga uitgegroeid tot de vertrouwde partner bij uitstek als het gaat om de bescherming van mensen, constructies en het milieu. Wij doen dit door het leveren van hoogwaardige en efficiënte oplossingen voor het markeren van obstakels en landingsplaatsen om veilige operaties zoals helikopter landingen en marine verkeer te garanderen. Orga ontwikkelt en produceert slimme offshore en onshore obstakelmarkering zoals verlichting voor windturbines en hoogbouw, Circle-H helikopterdekverlichting, navigatiehulpmiddelen zoals verlichting, misthoorns en radarbakens en explosie veilig gecertificeerde stroomvoorzieningssysteem. Daarnaast bieden wij natuurlijk ook een uitgebreid scala aan diensten en ondersteuningsmogelijkheden.

### Wat trok jullie over de streep om lid te worden?

IRO is voor ons een hulpmiddel welke wij misschien niet dagelijks gebruiken. Echter biedt IRO bij uitstek mogelijkheden wanneer het gaat om het bezoeken van beurzen en initiële contacten te leggen met buitenlandse missies. Daarnaast biedt het de mogelijkheid om gebruik te maken van diverse netwerken en events om marktkennis te delen met andere IRO leden en mogelijke samenwerkingen op te zetten.

### Wat hebben jullie de andere leden te bieden?

Met een land als Nederland waar zowel de maritieme, offshore olie & gas en renewable werelden krachtige pijlers zijn van onze economie, draagt Orga bij aan de veiligheid voor deze markten, zeker met de uitbreiding van de windparken, zonneparken in combinatie met scheepvaartveiligheid op zee en luchtvaartveiligheid in de lucht.

Voor deze markten gelden niet alleen internationale regelgevingen maar vaak ook lokale. Hier is dan ook specifieke kennis nodig over het gebruik van deze producten in de diverse markten. Met ons tweede merk, Tideland Signal hebben wij een gecombineerde marktervaring van 120 jaar, dat wij graag met de IRO leden willen delen.

### Hoe draagt Orga bij aan de energietransitie?

Al met al speelt Orga BV een belangrijke rol in de energietransitie door de ontwikkeling van Renewable energiebronnen en duurzame praktijken in de offshore- en onshore-industrie te helpen ondersteunen. Door betrouwbare en efficiënte veiligheidsoplossingen te bieden, helpt Orga ervoor te zorgen dat deze industrieën veilig en duurzaam kunnen opereren terwijl ze blijven evolueren en groeien. Ook draagt Orga bij aan een verminderde uitstoot van CO2 door middel van het aanbieden van explosie veilig gecertificeerde zonnepanelen om stroomvoorziening te leveren aan de essentiële gebruikers op het platform zoals het navigatiesysteem en andere elektrische gebruikers op het platform.

## TERUGBLIK IRO LEDENBIJENKOMST NSECURE, 22 JUNI

De rode loper lag uit voor een warm ontvangst bij gastheer Nsecure voor de IRO LOL bijeenkomst waarbij 'Digitalisering van security' centraal stond. Na de aftrap met de pitches van bestaande en nieuwe IRO leden, namen Nsecure en Allseas de leden mee in hoe integrale security oplossingen passen bij het unieke karakter van de offshore. Hoe de aanpak van NSecure werkt in de praktijk en welke vele voordelen een bedrijf of organisatie er van kan hebben werd aan de hand van veel voorbeelden gepresenteerd door Allseas. Een interessante eye opener! Dank aan Nsecure voor deze inspiratieve LOL bijeenkomst!

Bekijk [hier](#) de foto's en presentaties.



## TERUGBLIK SEOGS

Van 19-22 juni was IRO gastheer van het Nederlands Paviljoen op SEOGS in Paramaribo. Vergeleken met vorig jaar is de beurs flink gegroeid met meer conferentiestromen, meer exposanten en meer bezoekers. Het was druk, de sfeer was geweldig en er was van alles te doen.

Naast de officiële opening door president Santokhi en zijn bezoek aan de beurs, was een ander hoogtepunt de ondertekening van een MoU tussen Port of Nickerie en twee IRO leden Van Oord en Van Aalst. Alles vond plaats op de mooie locatie van Torarica Resort en Royal Torarica met geweldige faciliteiten en gastvrijheid.

We hebben positieve feedback van onze deelnemers ontvangen. Voor volgend jaar hebben we dezelfde goede plek op de beursvloer weer veiliggesteld.

Mocht je in 2024 (24-27 juni) ook willen deelnemen, meld je dan aan bij Jeroen via [j.tresfon@iro.nl](mailto:j.tresfon@iro.nl).

Bekijk [hier](#) de foto's.

## OFFSHORE ENERGY EXHIBITION & CONFERENCE 2023

Op 28 en 29 november komt onze sector samen tijdens Offshore Energy Exhibition & Conference (OEEC) in RAI Amsterdam. OEEC is het event voor bedrijven die



zich richten op toekomstbestendige zakelijke kansen voor de offshore energie-industrie. Het conferentieprogramma biedt unieke inzichten in de nieuwste ontwikkelingen in een snel veranderende wereld.

Daarnaast wordt het event gesteund door de Nederlandse Overheid, die OEEC beschouwt als hét flagship evenement voor de energiesector. Dit jaar zal de Rijksdienst voor Ondernemend Nederland een sterke aanwezigheid hebben tijdens het evenement. IRO zal aanwezig zijn met een stand.

DEZE PAGINA'S BEVATTEN NIEUWS VAN VAN IRO - BRANCHEVERENIGING VOOR DE NEDERLANDSE TOELEVERANCIERS IN DE OFFSHORE ENERGIE INDUSTRIE EN HAAR LEDEN.

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## IRO LID IN DE SCHIJNWERPERS: SRC NETHERLANDS

IRO heeft recentelijk SRC Netherlands als nieuw lid mogen verwelkomen. In een persoonlijk interview met Arthur de Boer, Commercial Director, maken wij kennis met SRC Netherlands.

### Waar blinken jullie in uit?

SRC Netherlands is onderdeel van de SRC Group AS uit Estland, een bedrijf gespecialiseerd in scheepsreparaties en conversies voor de wereldwijde maritieme, wind- en offshore sector. Wij voeren onze projecten uit daar waar onze klanten ons nodig hebben. Dit kan zijn ergens in een haven, bij een werf maar vaak ook gewoon wanneer het schip in de vaart is. Wanneer noodzakelijk proberen wij altijd met innovatieve en efficiënte oplossingen de operaties van onze klanten niet of zo min mogelijk te verstoren tijdens het uitvoeren van onze werkzaamheden aan boord.

De diensten van SRC kun je onderverdelen in drie 'pijlers' bestaande uit Project Management, Engineering en Execution. Door deze 'pijlers' constant te combineren zijn we in staat om tegen marktconforme prijzen onze klanten steeds een optimale oplossing te bieden. Onze projecten zijn heel divers en bestaan onder andere uit het upgraden of vervangen van hutten en openbare ruimtes van schepen, project mobilisaties en/of demobilisaties, het installeren van ballast water behandeling systemen en scrubber systemen, wal stroom conversies, dek reparaties dmv SPS Technology etc. Kortom, het merendeel van onze diensten zijn werkzaamheden waar een scheepseigenaar veelal ook voor naar een scheepsreparatie werf kan gaan maar waarbij hij om operationele of planning technische redenen een voorkeur heeft om niet uit te wijken naar een werf en er voor kiest om de werkzaamheden ergens lokaal of tijdens de vaart uit te laten voeren. Onze klant zoekt zeg maar flexibiliteit en dat is precies waar SRC in uitblinkt, het bieden van flexibiliteit en het ontzorgen van onze klanten.

### Wat trok jullie over de streep om lid te worden?

We zijn al jaren bekend met IRO en haar activiteiten. Omdat ons klantenportfolio heel divers is: van cruise tot offshore en van naval tot wind industrie, moeten we keuzes maken hoe we onze tijd (en middelen) voor netwerken en relatiebeheer besteden.

Onze omzet komt momenteel voor +50 % uit de wind en offshore markt dus uiteindelijk was onze aanmelding een logische stap in deze.

### Wat hebben jullie de andere leden te bieden?

Allereerst hebben we uiteraard onze diensten te bieden die ik eerder al kort samenvatte maar uiteraard zoeken wij voor onze projecten ook altijd naar de juiste partners, leveranciers en subcontractors om ons te ondersteunen. In Nederland zijn wij een nog relatief nieuwe en groeiende organisatie maar met een tamelijk onbekende naam. Hier willen wij ons netwerk met toeleveranciers en dienstverleners nog verder uitbouwen om zowel nationaal als internationaal onze klanten nog beter te kunnen ondersteunen met dat stukje flexibiliteit. We willen altijd in staat zijn om snel te kunnen schakelen. Middels ons wereldwijde netwerk binnen verschillende sectoren willen wij ook andere partijen de mogelijkheid bieden om daarin een rol te kunnen spelen.

### Hoe draagt SRC Netherlands bij aan de energietransitie?

De afgelopen jaren hebben wij een sterke groei gezien in het aantal aanvragen dat wij krijgen gerelateerd aan de energietransitie. Wij voeren al jaren projecten uit voor onze klanten om hun schepen 'groener' te maken. Denk hierbij aan het installeren van scrubbers, emissie verlagende systemen maar ook walstroom conversies. Ook hebben we veel kennis in huis met betrekking tot hybridisatie van schepen. Momenteel werken wij aan een hybridisatie project waarbij het conventionele voorstuwingssysteem van een cruiseschip geschikt wordt gemaakt voor methanol. Hierbij is de leverancier van de hoofdmotoren verantwoordelijk voor de ombouw van de motoren en SRC verzorgt alles daar omheen zoals het leidingwerk en de methanol tanks. Dit alles onder het toezien oog en in nauw overleg met het classificatiebureau.

Wil je ook met jouw bedrijf in de schijnwerpers staan?

Stuur dan een mailtje aan Marloes Kraaijeveld via [m.kraaijeveld@iro.nl](mailto:m.kraaijeveld@iro.nl).



## EUROPORT 2023

7-10 Nov | Rotterdam Ahoy

### EUROPORT

Europort is al decennialang dé vakbeurs en ontmoetingsplaats waar de internationale maritieme industrie samenkomt om te netwerken,

Met een sterke focus op 'special purpose ships' is wereldhavenstad Rotterdam 4 dagen lang het trefpunt voor professionals werkzaam in de offshore, short sea, baggerij, binnenvaart, visserij, marine, superjachtbouw, cruise en ferries of workboats.

De volgende editie van Europort is van 7-10 november 2023 in Rotterdam Ahoy.

IRO zal aanwezig zijn met een stand.

### BEURSGENOTEERD

#### NETWERKEN OP DE BEURSVLOER - NETHERLANDS PAVILIONS

Klik op de links voor meer info over de beurzen, prijzen en aanmeldformulieren. Of neem contact op met Jeroen Tresfon via [j.tresfon@iro.nl](mailto:j.tresfon@iro.nl).

- [ADIPEC ABU DHABI, 2 - 5 OKTOBER](#)
- [OEEC AMSTERDAM, 28 - 29 NOVEMBER](#)
- [EUROPORT ROTTERDAM, 7 - 10 NOVEMBER](#)
- [OTC HOUSTON 2024, 6-9 MEI](#)
- [SEOGS PARAMARIBO 2024, 24-27 JUNI](#)
- [ONS STAVANGER 2024, 26-29 AUGUSTUS](#)

Naast de beurzen waar IRO een Nederlands paviljoen organiseert, hebben wij ook contacten met externe partijen omtrent de organisatie van diverse wereldwijde evenementen. Neemt u gerust contact op met IRO als u vragen heeft over internationale evenementen die niet in de beurskalender vermeld staan. Voor meer informatie, raadpleeg [www.iro.nl/calendar](http://www.iro.nl/calendar)

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### WELKOM NIEUWE YOUNG IRO BESTUURSLEDEN



Er waait een frisse wind bij Young IRO! Pieter Spruijt (Damen) en Vera Terlouw (Allseas) zijn toegetreden tot het Young IRO Bestuur. Hartelijk welkom!

Ook lid worden van Young IRO? Meld je [hier](#) aan!

### OFFSHORE EXPERIENCE - 12 SEPTEMBER



Op dinsdag 12 september vindt de Offshore Experience plaats in Den Helder. De kern van dit event is de verdere ontwikkeling van de duurzame blauwe economie, met dit jaar speciale aandacht voor het thema Secure@Sea.

Met een inspirerende keynote speech en paneldiscussie, diverse verdiepende masterclasses en verschillende experiences die je zelf kunt ervaren krijg jij als bezoeker van de Offshore Experience nieuwe inzichten in de uitdagingen en kansen rondom veiligheid. Kijk [hier](#) voor meer info.

### YOUNG MARITIME BOARD PLEIT VOOR INVESTERING IN JONGE PROFESSIONALS

'Alle hens aan dek!' Het aantrekken, behouden en ontwikkelen van talent is een van de grootste uitdagingen voor de regionale Rotterdamse maritieme sector.

Een van de vragen is hoe het bedrijfsleven ervoor kan zorgen dat de Young Professionals in de maritieme sector behouden blijven. Om deze vraag te beantwoorden heeft de YMB in samenwerking met Erasmus UPT een onderzoek uitgevoerd naar de behoeften en drijfveren van Young Professionals. "Er wordt veel over ons gesproken, maar niet veel met ons", aldus de Young Maritime Board-leden. Lees het hele artikel [hier](#).



### OCEAN ENERGY EUROPE CONFERENCE – 25 & 26 OKTOBER 2023

Tijdens dit evenement wordt het Nederlands paviljoen georganiseerd door Dutch Marine Energy Centre (DMEC), IRO, Gemeente Den Haag en de provincie Zuid-Holland.

In het paviljoen showcasen Nederlandse ocean energy technologie ontwikkelaars, research & test faciliteiten en offshore en supply chain bedrijven de toonaangevende positie van Nederland op het gebied van 'offshore renewable energy'. Neem voor meer info over deelname contact op met Uyen Phuong Le, DMEC.



DEZE PAGINA'S BEVATTEN NIEUWS VAN VAN IRO - BRANCHEVERENIGING VOOR DE NEDERLANDSE TOELEVERANCIERS IN DE OFFSHORE ENERGIE INDUSTRIE EN HAAR LEDEN.



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ARAMEX biedt internationale en binnenlandse expresbezorging, expeditie, logistiek en opslag, archief- en informatiebeheeroplossingen, e-businessoplossingen en online shoppingdiensten. Aramex heeft meer dan 12 jaar ervaring in de olie- en gasindustrie en heeft vier speciale distributiecentra in het Midden-Oosten, APAC en de VS, met de grootste centra in de VAE en Singapore.



**DEMCON UNMANNED SYSTEMS**  
[WWW.DEMCON-UNMANNED.NL](http://WWW.DEMCON-UNMANNED.NL)

DEMCON UNMANNED SYSTEMS ontwikkelt en levert onbemande autonome voertuigen voor klantspecifieke toepassingen. Dit verhoogt de veiligheid, optimaliseert de productie en maakt nieuwe bedrijfsmodellen mogelijk. Alle systeemontwerpen, ontwikkelingen, realisaties, integraties en service worden in-house uitgevoerd, waardoor volledige maatwerk mogelijkheden en een one-stop-shop gegarandeerd zijn.



**DIGITAALÉON**  
[WWW.DIGITAALÉON.COM](http://WWW.DIGITAALÉON.COM)

DIGITAALÉON biedt kostenbesparende oplossingen met Smart Maintenance op basis van AI, dashboards en rapporten voor inzichten, toekomstbestendige maatwerksoftware, systeemintegratie en procesautomatisering.



**DUC MARINE GROUP**  
[WWW.DUCMARINEGROUP.COM](http://WWW.DUCMARINEGROUP.COM)

DUC MARINE GROUP levert geavanceerde onderzeese diensten aan de offshore-, olie- en gas-, duurzame energie- en maritieme bouwsector.



**ELMA**  
[WWW.ELMATECHNOLOGY.COM](http://WWW.ELMATECHNOLOGY.COM)

ELMA biedt op maat gemaakte industriële automatiseringsoplossingen; systeemintegratie; inspectie en onderhoud van roterende apparatuur; advies en levering van gespecialiseerde componenten voor motion control voor de maritieme en offshore industrie.



**PUK BENELUX**  
[WWW.PUKBENELUX.COM](http://WWW.PUKBENELUX.COM)

PUK heeft meer dan 50 jaar ervaring in de ontwikkeling van hoog belastbare kabeldraagsystemen. Wij leveren een solide fundament voor de kabels die zorg dragen voor de doorvoer van energie en data, zodat processen niet onnodig stil komen te staan.



**1-DAAGSE CURSUS 'OFFSHORE ENERGIE: VAN FOSSIEL NAAR DUURZAME ENERGIE', INCLUSIEF BEZOEK AAN UNIEKE OFFSHORE EXPERIENCE**

**Inhoud cursus**

- Cursus voor niet-technische medewerkers of nieuwkomers in de olie- en gasindustrie
- De achtergrond van de exploratie, productie en distributie van olie & gas
- Een breed overzicht van het mondiale speelveld van olie & gas en haar actoren
- De steeds groeiende wereldwijde behoefte aan energie, en de manier om daarin te voorzien met oude en nieuwe vormen van energie
- Hoe ziet het huidige en toekomstige offshore energielandschap rond de Noordzee eruit
- De energietransitie: mogelijke offshore oplossingen, bijvoorbeeld offshore wind- en golfenergie
- Actieve deelname aan de Offshore Experience in het Maritiem Museum Rotterdam

Locatie: Maritiem Museum Rotterdam

Prijs: €625,- excl. BTW (Het cursusgeld is inclusief lesmateriaal en lunch)

Voertaal: Nederlands (Engels indien Engelstaligen in de cursus)

Tijd: 08.30 - 17.00 uur

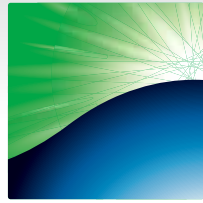
Beschikbare data 2022:  
• 20 september • 13 december

Check de online [IRO kalender](#) voor meer informatie en aanmelden.

**IRO KALENDER BEURZEN, MISSIES, CURSUSSEN EN BIJENKOMSTEN 2023- 2024**

5 JULI	INFOESSIE AFRIKA: NAMIBIË, TANZANIA EN SENEGAL ROTTERDAM
5 - 8 SEPTEMBER	OFFSHORE EUROPE (GEEN NL PAVILJOEN) ABERDEEN, SCHOTLAND
6 SEPTEMBER	GLOBAL ENERGY OUTLOOK N.T.B.
6 SEPTEMBER	RECHARGE EARTH ROTTERDAM
14 SEPTEMBER	INTERNATIONAL RELATIONS & COMMUNICATIONS COMMITTEE ROTTERDAM
13 - 15 SEPTEMBER	OGA (GEEN NL PAVILJOEN) KUALA LUMPUR, MALEISIË
20 SEPTEMBER	CURSUS OFFSHORE ENERGY: VAN FOSSIEL NAAR DUURZAME ENERGIE ROTTERDAM
21 SEPTEMBER	REGELGEVING: DE STAND VAN ZAKEN RONDOM VERPLICHTE DUURZAAMHEIDSINFORMATIE (CORPORATE SUSTAINABILITY REPORTING DIRECTIVE-CSRD) N.T.B.
22 SEPTEMBER	BESTUURSVERGADERING N.T.B.
24 - 28 SEPTEMBER	HANDELSMISSIE COLOMBIA MET MINISTER SCHREINEMACHER BOGOTÁ, COLOMBIA
27 SEPTEMBER	IRO LOL BIJENKOMST HGG PROFILING CONTRACTORS WIERINGERWERF
2- 5 OKTOBER	ADIPEC ABU DHABI
4 OKTOBER	WINDENERGY INDIA CHENNAI
19 OKTOBER	ALGEMENE LEDENVERGADERING BIJ HUISMAN SCHIEDAM
25 - 26 OKTOBER	OCEAN ENERGY EUROPE CONFERENCE & EXHIBITION (OEE2023) DEN HAAG
7 - 10 NOVEMBER	EUROPORT ROTTERDAM
28 - 29 NOVEMBER	OFFSHORE ENERGY AMSTERDAM
7 DECEMBER	BESTUURSVERGADERING N.T.B.
13 DECEMBER	CURSUS OFFSHORE ENERGY: VAN FOSSIEL NAAR DUURZAME ENERGIE ROTTERDAM
<b>2024</b>	
10 JANUARI	IRO NIEUWJAARSRECEPTIE DEN HAAG
6 - 9 MEI	OTC HOUSTON HOUSTON, VS
24 - 27 JUNI	SEOGS PARAMARIBO

VOOR DE MEEST ACTUELE INFORMATIE, CHECK DE ONLINE IRO CALENDAR BOVENSTAANDE ACTIVITEITEN ZULLEN ALLEEN DOORGANG VINDEN BIJ VOLDOENDE BELANGSTELLING VANUIT DE LEDEN.



# OFFSHORE ENERGY23

EXHIBITION & CONFERENCE  
**28 & 29 NOVEMBER 2023**  
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