

ACTIVITY REPORT

2018





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INTRODUCTION





COMPANY PROFILE

A global solutions provider

DEME is a world leader in the highly specialised fields of dredging, marine engineering and environmental remediation. We can build on more than 140 years of know-how and experience and have fostered a pioneering approach throughout our history, being a front runner in innovation and new technologies.

While our company roots are in Belgium, we have built a strong presence in all of the world's seas and continents, operating in more than 90 countries worldwide. We can rely on 5,200 highly skilled professionals across the globe. With a versatile fleet of over 100 vessels, backed by a broad range of auxiliary equipment, we can provide solutions for even the most complex projects.

Solutions for global challenges

Our vision is to work towards a sustainable future by offering solutions for global, worldwide challenges: rising sea levels, a growing population, reduction of emissions, polluted rivers and soils and the scarcity of natural resources.

Although our activities originated with our core dredging business, our portfolio has diversified substantially over the decades. Our offering includes dredging and land reclamation, solutions for the offshore energy market, infra marine solutions and environmental solutions. Our multidisciplinary capabilities, the synergies in many projects and our integrated corporate structure have made us into a global solutions provider.

Exploring new horizons

We also strongly believe in turning challenges into opportunities. That's why we are continuously looking for ways to deploy our knowledge and expertise in other activities, exploring new horizons and expanding our solutions portfolio.

We are developing technologies for the sustainable deep-sea harvesting of minerals on the ocean floor. As a leader in environmental remediation we are looking into solutions to tackle marine litter in our rivers and oceans. We are building on our experience in coastal protection to develop nature-based solutions to tackle the rising sea level. Our continued investments in new technologies and activities underline just how important innovation is to our company.

Shareholder structure

DEME's shareholder is the Brussels-based civil engineering contractor CFE, which is controlled by the Belgian investment Group Ackermans & van Haaren – both publicly listed companies on Euronext Brussels. 🌱

DEME IS TAKING THE LEAD WITH TRULY PIONEERING VESSELS.

2018 was an extraordinary year for DEME in many ways. We achieved a 13% increase in turnover, which climbed to 2.65 billion EUR, and an EBITDA of 476.8 million EUR.

The activities of our subsidiaries GeoSea, Tideway, A2Sea and EverSea, which are now grouped into the new DEME Offshore organisation, made a substantial contribution to this result. With a high level of project execution and several new contracts, we also had a strong performance in the dredging market. The start of the works at three mega infrastructure projects in the Netherlands has led to an exceptionally busy year for our infra marine subsidiary DIMCO. Additionally, our environmental specialists are involved in several major remediation projects across Europe.

Given the successful growth of our activities and our continued ambition to expand, the year was marked by a massive recruitment drive that is unprecedented in our history. More than 600 new employees joined our company, both staff and crew, expanding our existing workforce by more than 10%.

The long-term success of DEME depends on our ability to continuously make the safety and well-being of our employees a top priority in all our operations. There is nothing more important to us than ensuring our employees, contractors and partners remain safe, whether on board our vessels or ashore. We continuously challenge ourselves to raise the bar with our safety performance and do not accept compromises in this area. All employees

—
The long-term success of DEME depends on our ability to continuously make the safety and well-being of our employees a top priority.
—

share the responsibility for ensuring a safe working environment and are encouraged to report potential hazards. Zero harm is our ultimate target on every project, site and vessel.

As a global solutions provider, we can contribute significantly to the United Nations Agenda 2030 for Sustainable Development. With our technology expertise we can play a leading role in addressing global challenges, including the rising sea level, the increasing world population, the reduction of CO₂ emissions, the scarcity of mineral resources and polluted rivers and soil. We also manage our operations in a sustainable manner, further reducing our environmental impact and developing technological innovations that will help address the climate challenges that lie ahead.

Our innovative new and existing dredging vessels have been executing a variety of challenging projects across the globe. In one of the largest land reclamation projects DEME has ever worked on, we completed more than 80% of the Tuas Terminal Phase 1 (TTP1) project by the end of the year. We are well on track to finish the project in Singapore by the end of 2020. In a joint venture, we were also awarded a major contract for the modernisation of the Świnoujście - Szczecin fairway in Poland. The deepening and civil works will take about three years.

In the offshore energy market we had an exceptional year with several challenging offshore wind projects successfully completed in Europe. Our offshore installation vessels were fully occupied on projects such as Rentel, Merkur and Hornsea Project One.

MESSAGE FROM THE BOARD OF DIRECTORS



Luc Vandenbulcke (left) & Luc Bertrand (right)

We had a strong performance in all of our activities.

In our ambition to provide the most comprehensive offering of solutions, services and equipment to oil, gas and renewable energy customers, our subsidiaries GeoSea, Tideway, A2Sea and EverSea are now operating as the DEME Offshore activity line. By integrating our expertise and capabilities into a more agile organisation, we will be able to fulfil the future requirements of our customers even more rigorously.

The year was also truly exceptional for our infra marine specialist subsidiary DIMCO. Works kicked off at three major infrastructure projects in the Netherlands, including the RijnlandRoute, the New Lock Terneuzen and the Blankenburg Connection. The projects are an opportunity to showcase our joint expertise, from dredging and infra marine know-how to the supply of marine aggregates.

DEME Environmental Contractors (DEC), our specialist environmental company, started works on a major contract in Italy to remediate the site of a former steel plant. Closer to home, we are the main contractor at the Antwerp Blue Gate project, where a 66 ha blackfield site is being transformed into a sustainable business park.

Our marine harvesting specialist, Global Sea Mineral Resources (GSR) unveiled the nodule collector 'Patania II'. The pre-prototype is the successor of the tracked soil testing device 'Patania I', which was successfully tested during a 2017 expedition in the Central Pacific Ocean. The 'Patania II' integrates the track design of the first 'Patania' prototype with a suction head to collect polymetallic nodules from the seabed and will be tested during a future expedition.

DEME Concessions has made quite a mark in the industry, both offshore and on land. Financial close was achieved for the SeaMade offshore wind farm in Belgium and for the Blankenburg Connection in the Netherlands.

DEME is taking the lead with truly pioneering vessels.

With our ambitious fleet investment programme we are taking the lead with some truly pioneering vessels. The DP3 vessel 'Living Stone', the most advanced cable installation vessel in the world, joined the fleet in 2018. The vessel has a unique, dual-lane cable installation system on board, making it possible to install subsea cables faster and more efficiently. DEME's new self-propelled DP2 jack-up vessel 'Apollo' entered the fleet in spectacular

style when she carried out a platform decommissioning project in the Dutch sector of the North Sea. The installation vessel has extremely long lattice legs and will serve the offshore energy industry. Several new vessels are under construction, such as the powerful cutter suction dredger 'Spartacus', the next generation offshore installation vessel 'Orion' and two trailing suction hopper dredgers.

Looking ahead, we are well-positioned for continued success. Major projects kicked off this year in our dredging and offshore activity lines. Our order book and tender pipeline continues to be strong. We will soon welcome the state-of-the-art trailing suction hopper dredger 'Bonny River' in our fleet, another high-tech vessel demonstrating our relentless innovation drive. We keep exploring new opportunities to deploy our knowledge and expertise in dredging, offshore energy, infra marine works and environmental remediation.

Over the last decade, the growth in offshore wind energy has mainly been concentrated in Europe. A growing number of Asian countries have set ambitious targets to increase the development of offshore wind projects in the next few years. Technological innovations helped to reduce costs of wind farm installation and electricity output, making wind power an attractive alternative to meet the increasing energy demand while reducing carbon emissions. European companies, including DEME, have played a pioneering role in the development of offshore wind

energy. We strongly believe in the further growth of the offshore energy sector and we continuously and strategically invest in new technologies to stay ahead in this fast-evolving industry.

We would like to thank our customers, partners and shareholders for their continued confidence. We would also like to sincerely thank all our employees for their hard work and dedication to DEME. The success is first and foremost the achievement of our employees worldwide. We are confident that we are well-positioned for the next growth phase.

We would also like to sincerely thank Alain Bernard for his years of leadership, commitment and drive as a CEO to make DEME a world leader in the dredging, marine engineering and environmental industries. Thanks to his vision and leadership the company successfully diversified its activity portfolio, and Alain's pioneering and inventive approach has been a key driver for the growth of DEME over the past decade. We are very grateful for Alain's many accomplishments and we look forward to continue working with him, benefiting from his expertise and insights in the fields of DEME Concessions and deep sea harvesting. Together with our employees we will continue to build upon his success. 💚

Luc Vandenbulcke | CEO DEME Group
Luc Bertrand | Chairman DEME

OUR MANAGEMENT TEAM



LOWER ROW, FROM LEFT TO RIGHT

Eric Tancré | Area Director Europe, Managing Director Infra
Lucas Bols | General Manager DEME Offshore
Tom Lenaerts | Chief Legal Officer
Els Verbraecken | Chief Financial Officer
Luc Vandenbulcke | Chief Executive Officer
Pierre Potvliege | Area Director Indian Subcontinent
Christine Cuyt | Assistant to the Management Team
Bart Verboomen | Manager Technical Department, General Manager Baggerwerken Decloedt & Zoon
Theo Van De Kerckhove | Chief Operating Officer
Steven Poppe | Area Director Africa

UPPER ROW, FROM LEFT TO RIGHT

Wim Biesemans | Managing Director DEME Concessions
Hugo Bouvy | Managing Director DEME Offshore
Hans Casier | Chief Human Resources Officer
Pierre Catteau | Area Director Mediterranean, South and Middle Americas
Bernard Paquot | Area Director Middle East
Philip Hermans | Area Director Asia, Oceania and North-America, General Manager Dredging International
Dirk Poppe | Area Director Eastern Europe and Russia, Managing Director Ecoterres Holding
Bart De Poorter | General Manager DEME Offshore

OUR EXECUTIVE COMMITTEE



FROM LEFT TO RIGHT

Philip Hermans | Manager Dredging, Rest of World
Theo Van De Kerckhove | Chief Operating Officer
Eric Tancré | Manager Dredging, Europe
Els Verbraecken | Chief Financial Officer
Luc Vandenbulcke | Chief Executive Officer
Hugo Bouvy | Managing Director DEME Offshore

FINANCIAL HIGHLIGHTS

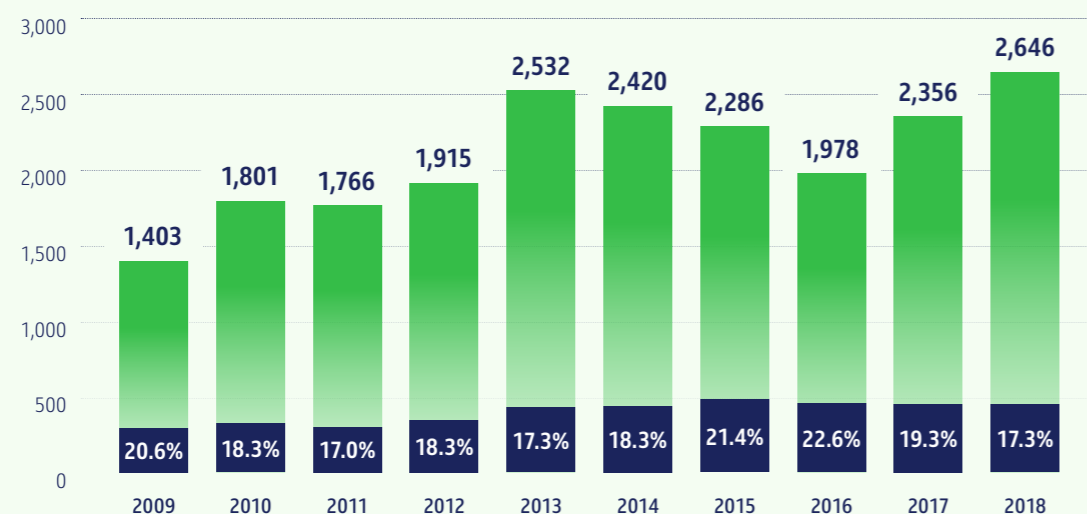
DEME GROUP KEY FIGURES

As of December 31, according to IFRS (*)
(in millions of EUR)

	2018	2017	DELTA
Turnover	2,645.8	2,356.0	289.8
EBITDA	458.9	455.5	3.4
EBIT	196.0	230.5	-34.5
Net result share of the group	155.6	155.1	0.5
Order book	4,010.0	3,520.0	490.0
Average # personnel (in FTE)	4,937	4,440	497
Shareholders' equity (excl. minority interests)	1,401.4	1,321.8	79.6
Net financial debt	-555.8	-285.7	-270.1
Balance sheet total	3,820.7	3,521.2	299.5
Total investments	410.2	622.9	-212.7
Dividend of the year	55.0	55.0	0.0

DEME GROUP EVOLUTION OF CONSOLIDATED TURNOVER AND EBITDA

As of December 31, according to IFRS (*)
(in millions of EUR)



Definitions:

EBITDA is the sum of operating result (EBIT), depreciation, amortisation expenses and impairment of goodwill.

EBIT is the operating result or earnings before interest and taxes.

Order book is the contract value of assignments that are acquired as of December 31 but that is not yet accounted for as turnover because of non-completion.

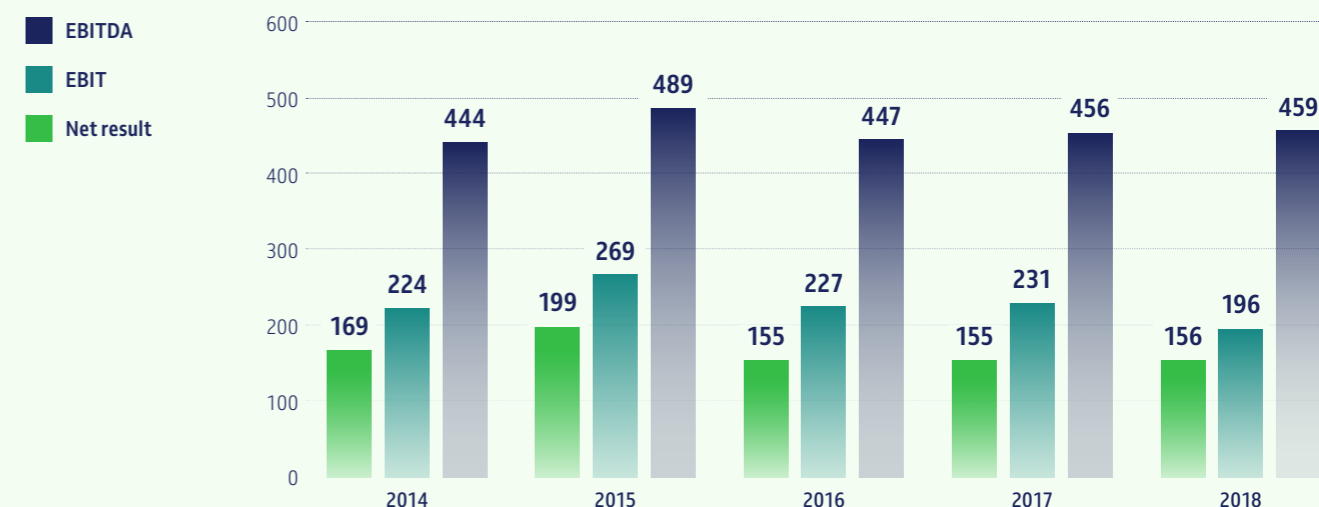
Net financial debt is the sum of current and non-current financial liabilities decreased with cash and cash equivalents.

Total investments is the amount paid for the acquisition of intangible, tangible and financial fixed assets, which equals or is the total investment amount of the consolidated cash flow from investing activities.

(*) Following the introduction of the accounting standards IFRS 10 and IFRS 11, group companies jointly controlled by DEME are accounted for using the equity method with effective date as from January 1, 2014.

DEME GROUP EVOLUTION OF NET RESULT, EBIT AND EBITDA

As of December 31, according to IFRS (*)
(in millions of EUR)

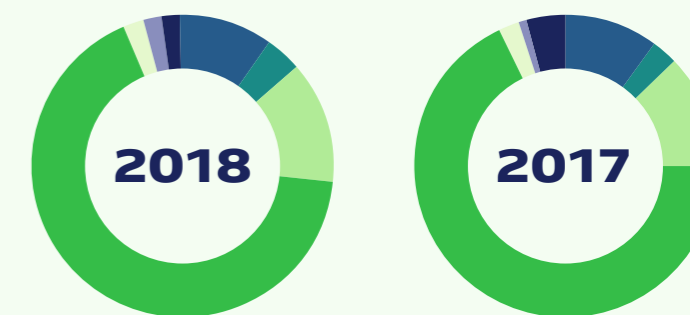


DEME GROUP TURNOVER BY REGION, BY ACTIVITY AND BY CUSTOMER

As of December 31, according to IFRS (*)

BY REGION

	2018	2017
Europe - EU	67%	68%
Asia & Oceania	13%	12%
Africa	10%	10%
America	4%	3%
Indian subcontinent	2%	4%
Middle East	2%	1%
Europe - non EU	2%	2%



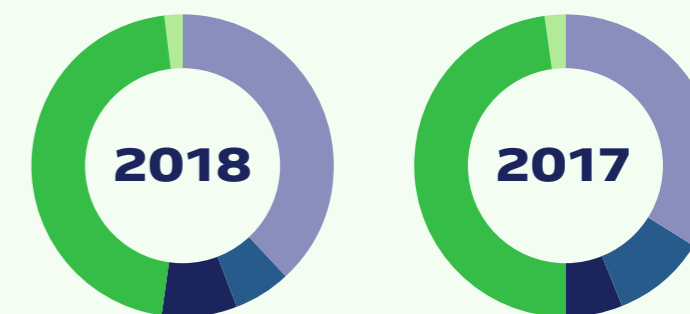
BY ACTIVITY

	2018	2017
Marine works	37%	47%
Capital dredging	23%	21%
Fallpipe & landfalls	17%	8%
Maintenance dredging	11%	14%
Environmental	6%	7%
Civil works	6%	3%



BY CUSTOMER

	2018	2017
Renewables	46%	48%
Government	38%	34%
Oil & Gas	8%	6%
Others	6%	10%
Mining	2%	2%



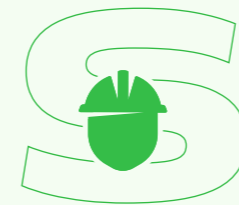
(*) Following the introduction of the accounting standards IFRS 10 and IFRS 11, group companies jointly controlled by DEME are accounted for using the equity method with effective date as from January 1, 2014.



The core values at the very foundation of our company are summarised by the acronym STRIVE

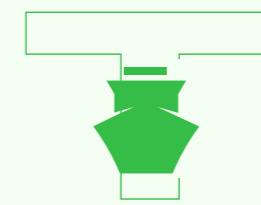
DEME'S CORE VALUES

We have established a set of standards applicable to our business units and subsidiaries worldwide. They are the centre of our commitment to consistently deliver excellence to our customers and value to our company. We also expect suppliers, subcontractors and partners to adhere to these standards.



SAFETY

The **personal safety and health** of employees and stakeholders is our greatest responsibility. Everyone has the right to work in a safe and **risk-free** environment at all times.



TECHNICAL LEADERSHIP

With an open mind and the **right team spirit**, we continue to improve all aspects of our work process and develop **trail-blazing solutions** to the needs and challenges of our customers.



RESPECT & INTEGRITY

Our employees are trained and motivated to meet the challenges ahead. **Individuality and diversity** are valued and performance is recognised. Our relationships with suppliers, subcontractors and partners reflect **respect, understanding and sound business practice**. We observe all applicable laws and regulations of the countries in which we are active. We respect **human rights** and prohibit unlawful discrimination.



INNOVATION

Innovation is the cornerstone of our achievements. We continuously **push our boundaries** by developing new, value-adding services and solutions.



VALUE CREATION

We make **result-driven** decisions in order to ensure **long-term growth** for the benefit of employees, customers and shareholders, including financial discipline to keep our company healthy.



ENVIRONMENT

We **protect the environment** and avoid any negative impact on the communities in which we do business.

COMPANY OVERVIEW



SUSTAINABLE DEVELOPMENT

The United Nations Sustainable Development Goals (SDGs) provide an important roadmap for addressing the world's most pressing challenges in order to achieve a more sustainable future for all.

As a global solutions provider, we are in a unique position to be able to significantly contribute to the SDGs and create a positive impact on society and the environment. We focus on the SDGs where our activities can have the greatest impact.



CLIMATE & ENERGY



NATURAL CAPITAL



SUSTAINABLE INNOVATION



WASTE & RESOURCE MANAGEMENT

EXPLORE SUSTAINABLE BUSINESS SOLUTIONS

"What business do we want to be in?"



HEALTH, SAFETY & WELL-BEING



DIVERSITY & OPPORTUNITY



ETHICAL BUSINESS



LOCAL COMMUNITIES



CLIMATE & ENERGY



NATURAL CAPITAL



SUSTAINABLE INNOVATION



WASTE & RESOURCE MANAGEMENT



EXCEL IN OUR OPERATIONS

"How can we perform in the most sustainable way?"



HEALTH, SAFETY & WELL-BEING



DIVERSITY & OPPORTUNITY



ETHICAL BUSINESS



LOCAL COMMUNITIES

To gain further insight and to take responsible decisions when selecting new project opportunities, we have developed an SDG assessment tool in collaboration with an external sustainability expert.

The tool focuses on the positive or negative impact of the overall project on the SDGs, the climate mitigation and adaptation potential and the level of innovation. It also assesses the main business risks and opportunities related to our involvement in the project. The assessment output is based on interviews with key project and tender managers, and on internal and publicly disclosed information about the project. In 2018,

the tool was applied to ten medium to large projects and tender opportunities. This year, additional projects and opportunities will be included in the assessment to obtain a comprehensive sustainability overview of our project portfolio.

We also embed sustainability in our daily operations, minimising our impact on the environment and respecting the people and communities in which we operate. This is,

for example, reflected in our fleet investment programme, which equips our vessels with dual fuel engines, solar panels and heat recuperation systems to reduce our carbon footprint. We also look for ways to deploy innovative techniques at our project sites to reduce our impact, and we have several community engagement initiatives in the main locations where we operate.

Our strategic framework for sustainability establishes consistent direction and guidance, defining what business we want to be in and how we can.

Our first sustainability report will be introduced in 2019, offering a comprehensive overview of DEMA's initiatives, key focus areas and milestones on our journey to sustainable growth.



Attracting international and diverse talent

The strong reputation of our brand was highlighted during this recruitment campaign as we managed to fill all of the vacancies, even in today's highly competitive labour market. This shows that we have a creative and entrepreneurial brand, which offers employees the chance to work on ground-breaking projects and this reputation has certainly helped attract new employees to the company.

But it was not only a matter of sourcing new recruits – they had to be the right 'DEME people'. We want to make sure that our company is future-proof and we have the right talent and expertise on board.

Given the global recruitment campaign and future trends in demand, our company is becoming more international than ever before. English is increasingly the main spoken language throughout the company. Additionally, the workforce is becoming more diverse.

Another major achievement was the integration of leading offshore wind installation company A2Sea and its 170 employees.

In 2018 we also launched an employee referral scheme where employees are encouraged to recommend friends for open positions at DEME. This led to 50 new recruits joining the company.

Career management

Given the pace of growth, we want to make sure our employees can optimise their career management so they can enjoy a definite career path with us and have a solid understanding of the opportunities available to them.

In 2018, the 'Talent Management' and the 'Basics for Starters' programmes were reviewed and improved. Mandatory training, recommended training and 'courses of interest' are all provided, and the system to manage employee training and development choices was modernised to include increased interactivity. 'DEME 2030', our senior management development programme, is also being further developed.

Mobility and flexi-work

The mobility and flexi-work plan was further implemented in 2018 to mitigate the impact of the traffic congestions around Antwerp. We opened a seventh satellite office in November and employees are given the possibility to work flexi-time - come in early and leave early, etc. - to avoid the traffic, or they can choose to work two days at the head office, two days at a satellite office and one day at home, for example. Satellite offices have also been established in the Netherlands.



**More than 600
new employees
joined DEME
in 2018**

Additionally, we are putting a lot of effort into promoting a modal transport shift by encouraging and supporting the use of bicycles and a Waterbus service, which operates from the centre of Antwerp and stops directly in front of the DEME head office. 🚲

PEOPLE @DEME

2018 was marked by a massive recruitment drive unprecedented in our history.

A surge in our offshore energy projects, as well as in our dredging, infra marine and environmental activities, meant that we faced the considerable challenge of recruiting more than 600 new employees, including 150 crew members, expanding our existing workforce by more than 10%.



2018 WAS A KEY YEAR IN OUR QHSE-S PERFORMANCE



Multiple campaigns were successfully launched worldwide, based on the outcome of thorough high potential analysis of incidents

Based on the results of our comprehensive high potential (HIPO) analysis of incidents, multiple campaigns were successfully launched.

The QHSE-S DEME worldwide performance dashboard was significantly updated. We are proud to be part of a limited number of companies that obtained the highest level on the CO₂ Performance Ladder.

Finally, we took a big step forward with the group's centralised and integrated QHSE management system, which is now based on one overall scope for all of the activities of the DEME Group.

Focus on High Potential Incidents

As strident efforts continue to improve our quality, health, safety and environmental performance, 2018 was marked by an increasing emphasis on High Potential (HIPO) Incidents. A HIPO is an incident that could have had severe consequences for people, assets, quality, environment or reputation. Instead of focusing on what actually went wrong, we focus on the potential consequences and the severity of incidents. This results in a more proactive and preventative approach, which encourages our employees to constantly look out for possible risks in their working environment.

The HIPO analysis was introduced in 2017 and is now carried out on a quarterly basis for the entire DEME Group. All types of incidents are included in the HIPO analysis, for example incidents with damage, near-misses or dangerous situations. By including third-party incidents in this analysis, we also learn from our subcontractors, suppliers and clients.

The result of the analysis is an overview of our current major risks. Potential issues are flagged and the management and QHSE-S teams use this information to develop a targeted action plan. Our employees – whether onshore or at sea – are then asked to take the appropriate measures.

Key Performance Indicators

In 2018 we introduced our renewed QHSE-S DEME Worldwide Performance Dashboard. The new dashboard allows us to more easily compare our QHSE performance with our competitors worldwide, in a global context.

New elements include the HIPO overview and the Green Initiatives KPI. A Green Initiative is any change to a process, equipment or setup that reduces environmental impact. The intention of this new KPI is to increase the environmental awareness of all of our employees, and to encourage project teams to review their processes and identify their environmental impact. All of our projects should implement at least one Green Initiative a year. Finally, we implemented one target line for the remaining QHSE KPIs to allow us to quickly see which KPIs are on target.

CHILDS

Throughout 2018, our Safety Programme CHILDS (Colleagues Help Injuries to Leave DEME) continued its safety awareness sessions, which address leadership, communication, collaboration and engagement.

One specific campaign under the CHILDS umbrella was the Safety Moment Day on fire safety and prevention. This campaign was organised in November 2018 all over the world. More than 600 employees at headquarters were evacuated as if in a real emergency. People also got the chance to



The annual Safety Moment Day focused on fire safety and prevention

participate in practical workshops on fire prevention and firefighting. The group-wide campaign included posters outlining the five golden rules for fire safety and identified hazards when carrying out hot works. Hazard Hunts were organised on the vessels, project sites and offices where employees were asked to identify and control fire risks in their working environment.

Safety Week – Standard Lifts

Following the HIPO analysis, we continued with campaigns related to lifting. The theme of the 2018 Safety Week was “Standard Lifts”, which covered items that employees lift on a day-to-day basis. A new toolbox movie was released to employees worldwide every day of the Safety Week. The movies show the main risks connected to a selection of Standard Lifts. Furthermore, all of our activity lines promoted their “Manual of Standard Lifts”, related to their own specific lifting activities.

CO₂ Performance Ladder

We continue our robust efforts to reduce emissions. The reduction of greenhouse gases is part of our integrated QHSE management system. We were again rewarded with an Awareness Certificate Level 5 from the CO₂ Performance Ladder in 2018. We are proud that our Benelux activities have maintained the highest possible level.

Accreditation

In 2018 we launched a uniform management system structure and scope for all our companies. The management system covers every operational activity of the DEME Group. 59 DEME companies worldwide have achieved full certification according to the latest QHSE standards, including ISO 14001 (Environmental Management Systems), ISO 9001 (Quality Management Systems) and ISO 45001 (Occupational Health & Safety Management Systems) accreditation.

We urge our employees to continuously improve their daily activities and processes, by keeping an eye on the risks, discussing possible solutions in teams and taking SMART actions together. 🌱

INNOVATION AT THE HEART OF DEME'S SUSTAINABLE GROWTH



Pushing the boundaries of innovation continues to be at the heart of DEME - it is actually one of our core values. We understand that innovation gives us an edge in this increasingly competitive environment.

Our investments in new technology prove just how important innovation is to us. Employees across the globe collaborate on technological developments with the goal of introducing sustainable solutions in the markets where we operate. We consider the close cooperation between sites, vessels, project management teams and technical and engineering departments to be the key element in delivering innovative solutions for our customers.

We have several programmes designed to seek out and support innovative initiatives. In 2018 the so-called 'DEMEx' campaign focused on breakthrough innovation. We asked our younger employees, who may be leading the company in 2035, to examine "10 future worlds" that could be seen as ambitious

"what-if" scenarios. Topics up for discussion included: Artificial Intelligence (AI) being applied to monitor offshore wind farms, becoming a coastal defence farmer and using nature to clean plastics from the seas, floating cities, autonomous sailing, subsea metro transport, and creating value from waste.



Employees across the globe collaborate on technological developments

Over a period of three months, teams were created and more than 100 new ventures were submitted to the digital platform. The top 50 ventures were examined and scored by the 'Innovation Board' based on their strategic fit, feasibility and market potential.

Subsequently the best 20 ideas were pitched at the DEMEx Summit held in December.



Every other year we organise the 'Innovation Diver'. This initiative targets all our employees worldwide. During the most recent campaign, employees were asked to submit solutions to 13 different challenges. Eventually more than 300 new ideas were submitted, of which a number were selected for further development. The successful teams were invited to the DEME Innovation Diver awards ceremony.

Exoskeletons

One pioneering idea resulting from the Innovation Diver is the use of exoskeletons on board of our dredgers. In 2018, tests took place examining several exoskeletons, which use a spring-based system rather than being battery powered. For instance, the suit would reduce tension on the wearer's back while performing manual lifting tasks. This would be useful on cutter suction dredgers where the cutter teeth can weigh 25 kg each, so the exoskeleton could be of valuable assistance. We are working with the University of Brussels, which is carrying out a monitoring and measuring campaign.

DEME Talks

In another simple but clever idea, the Innovation Diver has led to the 'DEME Talks' initiative. Approximately every two months, we invite our employees to give a presentation about what they are working on, or an external speaker is invited. This is a popular gathering and topics have ranged from augmented reality to blockchain developments.

AVISO

This stands for Alternatives, Value, Innovation, Smarts and Optimisations. This will become our process tool for project tenders, especially for large and complicated works.

Alongside our key partners, we are using some innovative, nature-based solutions to tackle some of the world's environmental and economic challenges.



Edulis - First mussels harvested at offshore wind farm

Edulis – Cultivating mussels at offshore wind farms

Edulis, a pioneering trial project, is examining if mussels can be cultivated at wind farms off the coast of Belgium and is already seeing some positive results. We are participating in the project, alongside the Belgian Institute for Agriculture and Fisheries Research (ILVO), Ghent University, C-Power, Belwind, OD Nature, Colruyt and Brevisco.

In 2018, the first mussels were harvested and an official tasting took place in September. The number and quality of the mussels exceeded all expectations.

The first breeding lines were installed at the C-Power and Belwind offshore wind farms in Belgium. At C-Power, a 'bio-line' was installed to capture mussel seed and monitor mussel growth, while at Belwind a 'force line' was installed where the forces, exerted by the sea on the longline are measured by means of integrated force meters. The team wants to determine the requirements for a whole offshore mussel culture system.

We are keen to play a role in this project, recognising that sustainability is an important issue when it comes to fish consumption and a growing world population. The project considers what is economically viable and also what is technically possible. Multiuse applications, i.e. a wind farm which could provide wind/current energy and potentially be a source of sustainable food, are being considered.

Technicians that maintain the wind farms could also be responsible for the aquaculture etc. This initiative highlights our mindset and the continuous drive to invest in innovation.


The number and quality of the mussels exceeded all expectations.

Coastbusters – Protection against coastal erosion and sustainable aquaculture

In another initiative using nature-based techniques, we are working together with other private companies and ILVO on a pilot project to test whether biogenic reefs (shellfish/marine flora/sand mason worm reefs) have the capacity to reduce erosion and even storm waves, and can keep up with sea level rises by natural accretion. The reefs have been installed near the Belgian coastal town of De Panne.

This project recognises the increasing need for coastal flood defences as sea levels rise due to global warming. Additionally, the deeper the water, the more energy waves generate. Until recently, coastal defence was usually carried out by building hard structures such as dykes and banks, but these traditional coastal engineering techniques are increasingly challenged worldwide for their unwanted ecological

side effects and need for continuous maintenance. Along with the project team, we want to explore sustainable systems that strengthen the ecosystem and are in harmony with the natural processes.

We believe that the creation of healthy ecosystems and restoration can provide a more sustainable, effective, cheaper solution that is ecologically sound. A healthy beach ecosystem for example, is capable of withstanding severe storms and can recover naturally. Natural reefs help to attenuate storm waves and surges, and can limit or stop the erosion of beaches, adding to the efficiency of sand nourishments and dune sedimentation (as in the case of Flanders).

The creation of ecosystems that have the natural capacity to reduce erosion, storm waves and storm surges, also known as 'biobuilders', can even keep up with rising sea levels by the natural accretion of the mineral and biogenic sediments. Ecosystem-based flood defences have

several additional benefits (compared to conventional engineering approaches) including the improvement of water quality, carbon sequestration, the production of fisheries, stimulation of biodiversity, nature conservation and the creation of recreational space. Examples of such ecosystems are tidal marshes, mangroves, dunes, coral reefs and also, as in the case of Coastbusters, shellfish reefs, flora reefs and sand mason worm reefs.

Coastbusters tests have never been done before, so teething problems were not a surprise. Several biodegradable substrates for the 'grass matting' are currently being tested and these are being monitored in the winter North Sea environment. Tests with the tube building worms are being performed in the laboratory and on site.


Coastbusters is a three-year project that concludes in 2020. 🌱

COASTBUSTERS


Is a test project to develop nature-based coastal defence solutions.

BIOBUILDERS EXAMPLES:


tidal marshes, mangroves, dunes, coral reefs and also, as in the case of Coastbusters: shellfish reefs, flora reefs and sand mason worm reefs.



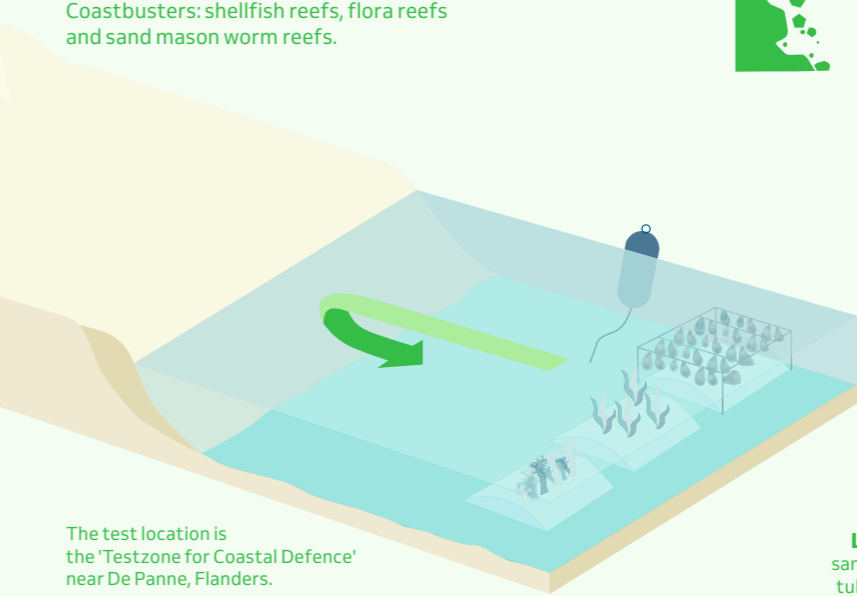
A sea level rise of 0.65m is expected to raise coastal defence costs by as much as **US\$9.6 trillion**




The worldwide market for ecosystem-based flood solutions is expected to grow to **€17.5 billion/year** by 2030




25% of the world's sandy beaches are eroding at rates exceeding 0.5m/year.




The test location is the 'Testzone for Coastal Defence' near De Panne, Flanders.



BIVALVE REEF
shellfish type mussels and oysters



LANICE REEF
sand mason worms or tube building worms



FLORA REEF
seaweed grass and seaweeds (algae)

FLEET INVESTMENT PROGRAMME

TAKING THE LEAD WITH PIONEERING VESSELS

In 2018 our ambitious, multi-year fleet investment programme continued, with the arrival of some truly pioneering vessels. We always aim to make continuous improvements in terms of productivity and environmental performance so we can serve our clients more efficiently and in a more sustainable way, and this is demonstrated by the new fleet additions.

We are taking the lead in the industry with vessels featuring innovative and green technologies. We want to make sure

that our fleet is futureproof and exceeds the current environmental regulations. Most of our new vessels are equipped with dual fuel engines, which are capable of running on liquefied natural gas (LNG).

As well as the 2018 additions, several new vessels are being built, such as 'Spartacus', the most powerful CSD in the world, and the giant, DP3 offshore installation vessel 'Orion'. These are just a few of our pioneering vessels that will be making a difference in the coming years.



Multipurpose vessel 'Living Stone'

Multipurpose vessel 'Living Stone'

Our DP3 vessel 'Living Stone', one of the most advanced multipurpose vessels in the world, entered service in 2018, and her innovative cable-laying capabilities exceeded all expectations. At the huge wind farm Hornsea Project One, this powerful new vessel enabled us to finish the cable laying time months ahead of schedule.

'Living Stone' has a unique cable installation system on board with two 5,000-tonne cable turntables located below the main deck. The new and innovative cable installation system can install one cable while fully preparing a second one on deck. This minimises the time needed to prepare the cables, minimising the risk of damaging the cable, which increases the vessel's workability, improving production rates and reducing costs for the offshore wind industry.

The vessel also features more than 3,000 m² of unobstructed deck space. This is coupled with a substantial rock dumping ability of 12,000 tonnes. Built as a dual fuel vessel, 'Living Stone' also has a relatively limited draught. It is a truly flexible vessel with its ability to lay cables, provide trenching support and perform rock placement works with a vertical fallpipe system that can reach large water depths. 'Living Stone' is already being heralded as a real game-changer in the industry.



DP2 jack-up vessel 'Apollo'

DP2 jack-up vessel 'Apollo'

DEME's new self-propelled, DP2 jack-up vessel 'Apollo' entered the fleet in spectacular style when she carried out the only platform decommissioning project in the Dutch sector of the North Sea in 2018.

The installation vessel has extremely long lattice legs which allow the vessel to jack-up in up to 65 m water depth. She has a leg encircling crane capacity of 800 tonnes and a spacious deck of 2,000 m². 'Apollo' will serve the offshore energy industry, mainly being deployed to provide services to the oil & gas industry, with a particular focus

on the installation and decommissioning of platform facilities.

The first decommissioning project we undertook was the removal of the Halfweg offshore platform in the North Sea and this project showed the versatility of the 'Apollo', which could easily handle both the topside and four large piles in one transfer.

DEME'S NEWEST, SELF-PROPELLED DP2 JACK-UP VESSEL 'APOLLO' WAS OFFICIALLY NAMED IN THE PORT OF ZEEBRUGGE, BELGIUM IN FEBRUARY 2019.

We are truly honoured to have Olympic, World and European champion heptathlon Nafi Thiam as the godmother of our newest vessel. The seven disciplines of the heptathlon are a real test of strength, endurance and versatility. These are features we also recognise in the vessel and crew of 'Apollo'.

Heptathlon champion Nafi Thiam with the captains of 'Apollo', Michiel Visser and Dirk Pauwels, and CEO Luc Vandenbulcke



Cutter suction dredger 'Spartacus'

'Spartacus' is the most powerful CSD ever built and the first to run on LNG. This powerhouse, built at the Royal IHC shipyard in the Netherlands, has a total installed capacity of 44,180 kW. It marks a milestone for us because it is twice as powerful as our existing CSDs, which are already renowned giants.

Equipped with an energy-saving flywheel driving, 'Spartacus' can cut through hard rock more easily and at production rates that were not possible before. The cutter dredger effectively replaces the use of dynamite and blasting. Furthermore 'Spartacus' can dredge up to an exceptional -45 m and will have unprecedented autonomy and pumping distance.

Although it is able to operate fully on LNG, we recognise that the dredging process fluctuates and is often performed in remote locations. Therefore, 'Spartacus' can be powered by any type of fuel, enabling the operator to choose the cleanest fuel available. Additionally, she has a waste heat recovery system that converts heat from the exhaust gases into electrical power which can generate fuel savings of up to 10%.



Cutter suction dredger 'Spartacus'

Trailing suction hopper dredger (TSHD) 'Bonny River'

The delivery of the 15,000 m³ 'Bonny River' in 2019 marks the introduction of a new generation of TSHDs. This unique vessel is able to dredge very hard soils and can work in deep waters of more than 100 m. The versatile new dredger combines a very long suction pipe, a large transport capacity with a limited draught and additionally a heavy-duty trail pipe with a rock draghead.

In an industry first, 'Bonny River' has a large jet pipe on her suction tube that uses extracted overflow water from the hopper that is pumped back to the seabed and integrated in the dredging process. This enables the vessel to achieve 'closed loop dredging' and realise higher trailing productions. Turbidity generated by the process water is therefore eliminated, which is particularly important in environmentally sensitive areas.

Moreover, the shape of the hull and two-speed propulsion gearbox reduce fuel consumption considerably. 'Bonny River' is a fully dynamic positioned DP2 TSHD - the first of its kind - which allows the vessel to manoeuvre with pinpoint precision.



Trailing suction hopper dredger 'Bonny River'

Offshore installation vessel 'Orion'

Construction of the next generation offshore installation vessel 'Orion' is progressing according to schedule. 'Orion' will feature an unrivalled combination of exceptionally high transport and load capacity, impressive lifting heights and green technology.

'Orion' will be deployed to construct the largest offshore wind farms, to service the oil & gas industry and to decommission offshore installations. With a total installed capacity of 44,180 kW, 'Orion' will be equipped with a high-tech Liebherr crane with a lifting capacity of 5,000 tonnes and can hoist heavy loads over an exceptional radius. The loads can be lifted to an unrivalled height of more than 170 m.

The deck space and deadweight have been maximised to provide an exceptionally high transport and load capacity. 'Orion' can take the heaviest monopiles, jackets, wind turbine components and structures in a single shipment, and can transport and install the next generation of multi-megawatt wind turbines.

Environmental considerations are also an important element of the vessel design. 'Orion' has dual fuel engines and can run on LNG. It has a Green Passport and Clean Design notation. This unique vessel also has other environmental innovations on board, such as a waste heat recovery system that converts heat from the exhaust gases and cooling water to electrical energy. The evaporation of LNG will cool the accommodation with a cold recovery system. At 216.5 metres long, 'Orion' features DP3 capability. The vessel is expected to join the fleet in early 2020.



Offshore installation vessel 'Orion'

Electrical CSD
'Blanew'



Electrical CSD 'Blanew'

Another very specialised vessel and in contrast to the giants mentioned before is the compact 'Blanew', an electrically-driven CSD specially designed for dredging works in marinas, canals and lakes.

'Blanew' is already hard at work in several Belgian marinas. The vessel is self-maneuvring and has a special shaped cutter ladder which allows it to dredge between jetties and under pontoons without removing them. In order to reduce exhaust gas emissions and to minimise noise when working in marinas, 'Blanew' is powered by means of an umbilical, floating electric cable, which is directly connected to the shore-based renewable electricity network.

The vessel is silent and does not produce emissions, making it ideal for these types of environments.

TSHD
'Meuse River'



TSHD 'Meuse River'

Steel cutting for the dual fuel TSHD 'Meuse River' took place at the end of 2018. The new vessel has the same innovative design as its dual fuel sister vessel 'Scheldt River', a dredger that has proven to be a champion. Since joining the fleet, 'Scheldt River' has operated non-stop in Europe. In line with this success, we are keen to provide clients with a versatile and highly efficient vessel identical to the 'Scheldt River' for a broad range of dredging activities.

The 8,400 m³ 'Meuse River' has a Green Passport and Clean Design notation. She has two-speed propulsion gearboxes and special thrust control, which results in at least 10% fuel savings during dredging operations. 'Meuse River' also has a Dynamic Position & Dynamic Tracking (DP/ DT) system, further enhancing manoeuvrability and position keeping. The dredge pump is driven by a hybrid drive - diesel direct and electric motor. 'Meuse River' will be delivered in the first quarter of 2020.

Sheerlegs vessel
'Gulliver'



TSHD 'River Thames'

As well as large TSHD, we are also building a vessel with a hopper capacity of 2,300 m³. Steel cutting started in December 2018 at Pax Ocean's shipyard in Batam Indonesia.

This vessel is expected to join the fleet in the first quarter of 2020. With a deadweight of circa 2,800 tonnes and a design draught of only 4.25 m, the compact design ensures high manoeuvrability and optimised dredging works in shallow waters. This shallow water dredger has a very robust design and is easy to operate and maintain.

Split barges 'Bengel' and 'Deugniet'

Two split barges, with a large capacity of 3,500 m³, are currently being constructed.

Steel cutting of the vessels got underway a few months ago and they will be delivered in the second half of 2020. The barges are much bigger than those in the existing fleet and are ideal to be deployed alongside the mighty CSD 'Spartacus' and our other cutters and backhoe dredgers.

Sheerlegs vessel 'Gulliver'

The 4,000-tonne, SWL crane vessel 'Gulliver', operated by Scaldis, was commissioned in April 2018. The vessel carries out activities including installing offshore infrastructures and decommissioning projects for the oil & gas industry and for offshore wind farms.

One of her first projects on entering the fleet was placing the offshore high-voltage substation on top of its monopile foundation at the Norther offshore wind farm. She also operated together with her experienced sister vessel 'Rambiz' in the salvage of a sunken vessel in Norway at the end of the year. The DP2 vessel will further carry out activities including installing offshore infrastructures and decommissioning projects for the oil & gas industry and for offshore wind farms. ♻️



'Spartacus' was given the award for its unique combination of power, size and innovation

We have won the Dredging and Port Construction (DPC) "Dredger of the Year" award for 'Spartacus', the world's most powerful CSD. The vessel was given the award for its unique combination of power, size and innovation.

The annual Dredging and Port Construction awards promote innovation, efficiency and sustainability in the dredging industry. The award ceremony took place on November 20 in Amsterdam. The accolade is a recognition for our innovative and green fleet investment programme focused on further increasing efficiency, both in terms of productivity and environmental performance.

DEME WINS DPC "DREDGER OF THE YEAR" AWARD FOR MEGA CUTTER 'SPARTACUS'

'SCHELDT RIVER' WINS PRESTIGIOUS INDUSTRY AWARD

TSHD 'Scheldt River' was the winner of the 2018 KNVTS Ship of the Year award. The most prestigious Dutch maritime award is granted to the most technologically innovative vessels for their superior design, economics and sustainability.

DEME and Royal IHC developed several innovations for 'Scheldt River', such as a hybrid dredge pump drive system in

combination with improved Wärtsilä engine management to reduce the effect of load variations and to stay within the critical limits of dual fuel LNG engines. For automation of the dredging process, Royal IHC developed the intelligent IHC ECO automation package, which results in high dredge performance. Additionally, fuel efficiency is achieved with two-speed propulsion, optimising fuel consumption in sailing and dredging conditions.

"All of these innovations made 'Scheldt River' the first of a new generation of dual fuel LNG hoppers, which positions our customer DEME at the forefront of the dredging industry," says Dave Vander Heyde, CEO of Royal IHC.

"We are extremely proud to receive this award, which recognises the efforts of both Royal IHC and DEME in improving the environmental performance and reducing the carbon footprint of dredgers."

— Dave Vander Heyde CEO Royal IHC



STRUCTURED FINANCE

A PROACTIVE FINANCING PARTNER

Our Structured Finance team assembles tailor-made financing packages and negotiates these packages with potential investors, financial institutions and authorities.



The aim is to offer financing possibilities to clients, in developed or emerging markets, who may not have the capability to arrange competitive financing solutions locally, especially with regard to credit costs, tenors or amounts.

Competitive and transparent solutions

By working with our Structured Finance team, clients know that they have a competitive, safe and transparent payment solution. Export finance projects are popular in Africa, but they also attract interest in several other regions around the globe such as South East Asia, the Middle East and Latin America.

Every financing arrangement is specifically tailored towards the requirements of each client and their individual projects. We can arrange straightforward buyer's credits, soft loans (if the client is eligible for concessional lending), project finance structures or a combination of all of these options.

OECD compliant

The financing packages are fully compliant with the recommendations and guidelines of the Organisation for Economic Co-operation and Development (OECD). Consequently, the inherent economic, environmental and social sustainability aspects of each project are duly analysed.

Attractive conditions

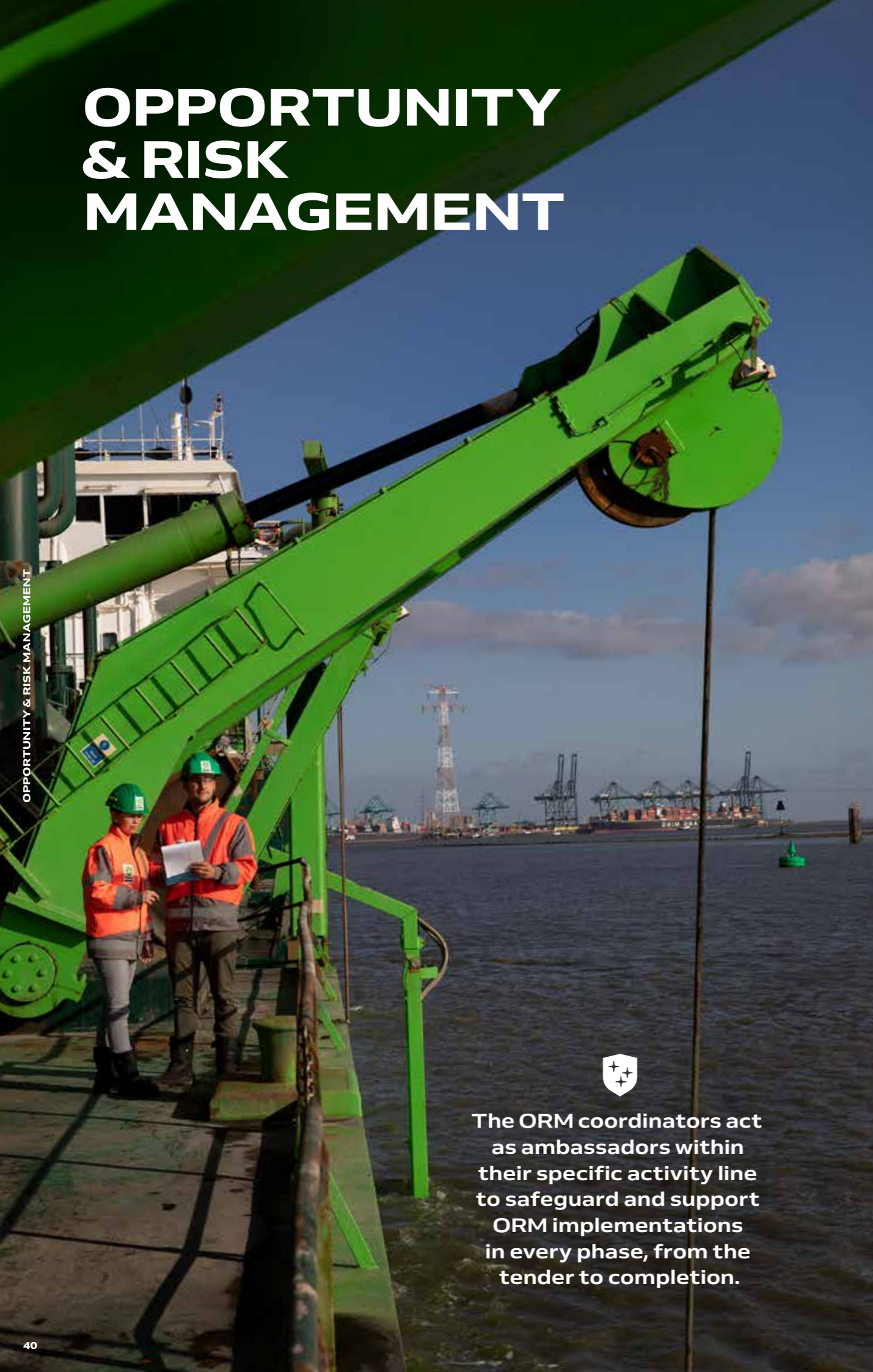
We have a long-standing relationship with Credendo, the Belgian Export Credit Agency (ECA) and Finexpo, the Inter-Ministerial Committee for Financial Support of Belgian Exports. We also work with a pool of international financial institutions to achieve the best solution for all of our clients. Low interest rates and attractive financing conditions in Europe often mean that we, as a contractor, have a very competitive offer for our many international clients.

More structured finance

In addition to arranging financing for our projects, the Structured Finance team supports us when we investigate M&A opportunities, work on international projects involving public private partnerships, maintain contacts with Development Finance Institutions and multilateral entities, and work closely with DEME Concessions. With respect to the latter, the team was actively involved in the financial close for the Blankenburgverbinding in the Netherlands. 🌱

OPPORTUNITY & RISK MANAGEMENT

OPPORTUNITY & RISK MANAGEMENT




The ORM coordinators act as ambassadors within their specific activity line to safeguard and support ORM implementations in every phase, from the tender to completion.

During 2018 the corporate Opportunity & Risk Management (ORM) department focused on the expansion of the embedded ORM system within our Dredging, Environment, Infra and Offshore activity lines.

Many of our departments, including Drive, Finance, Masterdesk, Newbuild, Procurement and Project Controls, worked together to support the growth of the ORM system. The system also integrated timely ORM reporting based on the principles of transparency, uniformity and consistency.

The year in review

The ORM system has evolved over the past year to improve our opportunity and risk management. Here are some of these evolutions.

We used the early detection mechanism for project opportunities and risks to swiftly identify major changes. Interactive and automated dashboards also helped to monitor the evolution of various risk profiles for different projects and activity lines. Management and the involved stakeholders receive regular reports about any identified contingencies.

We developed a user-friendly framework for Schedule Risk Analysis to capture and evaluate the effect of time during the execution of complex projects. The objective of the framework is to increase the assurance degree of time-related contingency drivers.

Together with DRIVE, we improved the feedback and knowledge management of operational opportunities and risks through the ongoing development of an enhanced lessons learned platform. Additionally, we fully integrated new features to monitor the mitigation actions on detected opportunities and risks into the ORM system.

We provided several internal stakeholders with guidance and advice regarding the effective and integrated implementation of ORM within complex and/or multi disciplinary projects. This approach promotes early opportunity and risk awareness and anticipates timely measures to safeguard our resources.

We mapped and analysed the various types of opportunities and risks, both from a corporate view and within each specific activity line. The same analysis was performed between the tender phase and the execution phase in order to report on our (evolving) risk profile. Every quarter the ORM status is reported, clarified and shared with the respective department heads.

External courses and workshops help us to stay ahead of the latest developments. As well as taking full advantage of these educational opportunities, we also assessed external ORM and refreshed our corporate ORM system where needed. Project and team members actively participated in a series of tailor-made ORM seminars for our dredging and offshore activity lines.

We refined our dynamic ORM tool for external partners into an ORM compass for projects where we are (partially) involved. The ORM compass has already been adopted by some major infrastructure projects.

All of our ORM coordinators collaborated intensively on structural improvements. The ORM coordinators act as ORM ambassadors within their specific activity line to safeguard and support ORM implementations at every phase, from tender to completion.

ORM compliance

At the end of 2018, the majority of tenders were compliant with the established ORM process. This successful compliance rate applies to small, medium and large tenders.

The average compliance rate for projects remained stable. During 2019, the ORM team, ORM coordinators and senior management will continue to focus on qualitative ORM implementation and timely ORM reporting.

Moving ahead

Our validated objectives for our ORM system in 2019 are based on transparent, uniform and consistent standards with the goal of providing reliable and unbiased assurance on opportunity and risk management on our projects. This applies to our dredging, environment, infra and offshore activity lines.

We are increasing focus on improved implementation of action management. This will be measured through quality KPIs.

We will continue to collaborate with other departments to develop the ORM procurement framework which will assist and support tender and project teams when managing opportunities and risks with regard to key supply chains.

Our senior management, ORM coordinators and ORM department will leverage qualitative and timely reporting on the evolving ORM situation.

We will refine our interactive dashboards to support the different hierarchical levels of ORM implementation, with a proactive focus on a dynamic knowledge sharing system.

We will advise and support recently acquired companies with their adherence to the ORM system.

We will use conclusions and lessons learned from materialised opportunities and risks to deepen our knowledge on future ORM assessments for upcoming tenders and projects.

We will endeavour to detect and valorise new opportunities through the corporate ORM and we will further stimulate our innovative efforts to uncover new perspectives. 🌱

OPPORTUNITY & RISK MANAGEMENT

DRIVE

DRIVE focuses on leveraging Big Data and turning DEME into a digital pioneer.

DRIVE is our continuous improvement programme, which is founded on three pillars:

1 DRIVE Operational and Technical provides a pragmatic approach to operational process improvements and bottom-up innovation.

2 DRIVE Cost focuses on sourcing improvement through the regular renegotiation of framework agreements for our main product families, as well as supplier consolidation across departments and business units.

3 DRIVE Transactional aims to realise savings, efficiency enhancements and cash out reductions through supporting process improvement.

DRIVE Operational and Technical

In 2018, our DRIVE team focused on advancing the company's digital capabilities to reinforce continuous production improvements. To that end, DRIVE has leveraged new digital possibilities such as Big Data and the Internet of things (IoT).

In collaboration with other departments, our DRIVE team is redefining the entire production reporting 'ecosystem' to allow all of our activities to be stored in one Cloud database - the DEME Reporting Engine (DRE). This allows visual representation of the progress of megaprojects, as well as the detailed analysis of the production of each individual vessel, resulting in better managerial and operational decisions.

The capabilities of IoT are deployed to use information from the sensors on production equipment to automate the reporting as much as possible and to allow qualitative production reporting. This not only enhances data quality but also enables the crew and operators to focus more on value added work and less on administration. These developments will continue in 2019.

"The focus of most DRIVE projects in DEME Building Materials is on consistent and significant small improvements that make a huge difference in the end. Even a few pennies per tonne are worth thousands of pounds when dealing with millions of tonnes."



— Tom Janssens, General Manager
DEME Building Materials

Big data helps to identify the best dredging equipment for each job

Big data collected by the vessels' sensors is being used to scientifically compare performance of e.g. different dredge drag heads and their settings. This makes it possible to determine the best choice for the job upfront and reduces the learning curve once the project has started.

Yellow and green jersey awards

Inspired by the Tour de France, each year the DRIVE yellow and green jerseys are awarded to areas or business units for exceptional DRIVE results. In 2018, the DRIVE Operational yellow jersey went to Asia and Oceania in recognition of the highest amount of savings that were realised with DRIVE projects and DEME Building Materials (DBM) received the green jersey for the largest number of successful DRIVE projects.

DBM realised this by drastically widening the scope of its DRIVE methodology to unearth new improvement levers in 2018. As well as continuing to address the dredging and shipping processes, two additional operational aspects of the marine aggregates business were examined - terminals and concessions (where the materials are dredged). In addition, a financial and commercial analysis was conducted to identify even more improvement potential. This resulted in more than 50 operational and commercial improvement opportunities.

Crew involvement programme - BOOST

The BOOST programme, which focuses prominently on the crew in the DRIVE continuous improvement process, was launched in 2018. Dedicated, project-specific training with our in-house simulators is provided, amongst other initiatives, to focus more intensively on technically optimising the vessels in advance of each project.



DRIVE Cost & Transactional

DRIVE supports the creation of multi-functional teams across the business units, which enables them all to benefit by achieving more synergies. As we continue to grow in the future this will become even more important.

Big data and IoT are also being used by DRIVE Cost & Transactional to leverage data in 'non-operational' ways.

The winners of the yellow and green dotted jerseys are good examples.

Our Purchase & Logistics Department, winner of the yellow dotted jersey, teamed up with DEME Offshore, boosting the purchasing power of both companies, for instance in buying steel for the spuds of the jack-up vessel 'Innovation'.

Purchase & Logistics also worked closely with the HR department concerning the renegotiation of the short-term car rentals framework contract. Additional savings were realised through changes in the HR car policy for new employees.

The IT Department won the green dotted jersey for its DRIVE initiatives concerning the integration of A2Sea, acquired in 2017. This allowed the company to benefit from economies of scale when it came to combining service contracts under one umbrella.

Further new cost savings were realised by the HR Training department through video and e-learning, idleness cost reduction by the COO Department, Technical Department Maintenance, Insurance and Mobdemob departments.

DEME4LIFE

Giving back to the community is embedded in our company culture. In 2018, in line with our core values, we supported a wide variety of social projects across the globe. Many of the DEME4Life initiatives are driven by our employees, who often spend years working locally, supporting and working with local charitable organisations in the communities where we live and operate.

In India we have a partnership with the Namma Beach-Namma Chennai beach cleaning programme



Many of our local DEME4Life initiatives are driven by our employees



In **Belgium** we continued our partnership with **Ondernemer voor Ondernemers** with a sustainable dredging project on the Congo River and focused on an educational programme that offers Congolese youngsters a four-year study programme at the Antwerp Maritime Academy. Our employees also volunteered at the **Special Olympics**, where thousands of athletes with intellectual disabilities competed in different sports disciplines. We also provided financial support for the necessary equipment and logistics. Over the past few years, we have also supported **De Steenschuit**, a Belgian organisation that helps unemployed youngsters gain skills and experience that will help them find employment or continue their education.

In **India**, DEME4Life continued our partnership with Sister Jeanne Devos and the **JAAN Foundation**. The foundation promotes a safe childhood for child domestic workers and other vulnerable people by offering shelter, education and skills development. Also in India, our cooperation continued with the **Namma Beach-Namma Chennai** beach cleaning programme. The project aims to raise local awareness about plastic pollution and mobilises the local community to participate in beach cleaning initiatives. Namma Beach-Namma Chennai goes much further than caring for the environment alone. The many volunteers, brought together by the wife of one of our employees who lives and works in India, also support projects in local schools and several community initiatives in Chennai.

For the past few years we have partnered with **The Red Pencil**. The NGO offers both creative and clinical arts therapy services to various organisations including hospitals, family centres, shelters and schools, as well as humanitarian missions. In Indonesia we supported The Red Pencil partnership with YPKAI Rumah Singgah (the Indonesian Child Cancer Care Foundation). Arts therapy sessions were organised to enhance psychological support of sick children staying temporarily at YPKAI. Following the devastating earthquake in Lombok, The Red Pencil offered assistance to local art therapists so that they could provide support to children and their families impacted by the earthquake.

In **Vietnam**, DEME4Life supported various initiatives driven by local employees, including the oncology centre in **Hanoi's National Children's Hospital**.

MERCY SHIPS

We have been active in dredging and land reclamation projects in Africa for more than 50 years. Therefore, it was a logical step for DEME to support a large humanitarian project on the continent through a long-term partnership with Mercy Ships.

Mercy Ships' hospital ship 'Africa Mercy' sails along the African coastline to offer free local operations, medical treatment and medical training. With the support of DEME4Life, Mercy Ships will be able to deploy a second hospital ship at a later stage.

Mercy Ships is mainly active in Africa because that's where the need is highest. 18.6 million people die every year because they have no access to proper medical care. 91% of those people live in sub-Saharan Africa. Our financial contribution will go towards funding maritime training and medical programmes, purchasing a new X-ray installation and installing new infrastructure.



'Global Mercy' will be the largest private hospital ship with 199 hospital beds and six surgery rooms.

Following the success of the current ship, a second one is under construction in China. This is both an absolute highlight for us and a huge milestone for Mercy Ships. The new ship, 'Global Mercy', will be the largest private hospital ship with 199 hospital beds and six surgery rooms.

In addition to financial support, Mercy Ships relies on volunteers in all possible functions: medical staff and surgeons, captains and sailors, but also kitchen staff, cleaners, deckhands, etc. With Mercy Ships continuously looking for skilled maritime people, we plan to organise a call for volunteers within our company to further strengthen our partnership with the organisation.





Over 200 employees participated in the "Climbing for Life" event in France



Bootcamp fun in Russia



DEME runners ready for the Antwerp 10 Miles in Belgium



Rowing in the Dragon Boat Race in Antwerp, Belgium, has become a yearly tradition



DEME runners in Singapore

ENERGY @DEME

This year we proudly celebrate the 15th anniversary of our Energy@DEME sports and well-being programme. Promoting and embedding a healthy and sports-minded culture is part of our DNA and our employees can participate in plenty of sports and well-being activities.

Across the globe we come together to run, cycle, play soccer, row, climb or do yoga. It is a great opportunity for our growing number of employees to meet new faces outside the workplace, have fun together and foster a healthy team spirit.

The year was packed with sporting events ranging from cycling and running in France to rowing dragon boats in Belgium and playing soccer in a tournament in Singapore. In some countries our people even come together on a weekly basis for a healthy workout.

In 2018 we once again participated in the Climbing for Life event in France, which provides challenges for cyclists, runners and walkers. Almost 200 employees from across the globe took part in the annual event, which is also an excellent way to meet and do sports with colleagues. DEME also sponsored the event and the accompanying diabetes awareness campaign.

The event was also the crowning glory of the work done by the 2018 selection of DEME Heroes. Every year we select a group of DEME Heroes to get more employees on board the Energy@DEME programme. The Heroes took up the challenge and undertook a life-changing journey. They received medical and nutritional coaching throughout the year to climb the summits in the French Vosges.

At the legendary Dragon Boat Race in Antwerp, Belgium two DEME teams proudly took home the trophies for first and second place.

Plenty of running events took place, with many employees participating in runs like the Antwerp 10 Miles in Belgium, the Standard Chartered Marathon in Singapore, the Chennai Sketchers Marathon in India, the Singelloop in the Netherlands and the Bristol 10K in the UK.



ETHICS & BUSINESS INTEGRITY

Our commitment to responsible business practices is absolute. The DEME Code of Ethics and Business Integrity puts our core values into practice and provides guidance to all our employees worldwide in making sound ethical business decisions by inspiring dialogues about ethics and compliance issues.

The principles of our Code of Ethics and Business Integrity are both simple and clear: comply at all times with the applicable laws and regulations, act with integrity and honesty, and avoid inappropriate behaviour or even the appearance thereof. It is the personal responsibility and obligation of every employee to adhere to these principles. Moreover, we expect every third party we do business with to respect and act according to our core values and ethical principles.

The DEME Code of Ethics and Business Integrity covers important areas, such as protecting people and company assets, anti-bribery and anti-corruption, antitrust and competition, compliance with international trade laws, accounting standards and records.

Protecting people

We are committed to providing a workplace free of discrimination where all employees are treated fairly. We value the diverse backgrounds and talents of employees. As an international player we ensure everyone has equal access to opportunities, using the same criteria for employment and promotion for our worldwide activities.

We never compromise on health and safety. To maintain our carefully built-up and valuable reputation in this respect, compliance with our quality processes and safety requirements is key for every individual working for us, both directly and indirectly. Our Health and Safety Policy further guides employees in maintaining a safe and healthy workplace for themselves and others by complying with health and safety procedures, by reporting incidents, injuries and unsafe equipment, practices and conditions.

Protecting company assets

Employees are required to take care of our assets responsibly and protect them from theft, loss and misuse. This includes both physical assets and intellectual property.

Anti-bribery and anti-corruption

Our anti-bribery and anti-corruption policy ensures business throughout the world is conducted in an ethical and legal manner. Rigorous procedures and controls have been put in place to detect and prevent any form of bribery and corruption. These procedures and controls are periodically reviewed to ensure compliance at all times. There is a zero tolerance for any breach of the policy by our employees or anyone acting on our behalf.

Antitrust and competition

We comply with the applicable antitrust and competition laws and strive to do fair business with our stakeholders. We will not enter into any understanding, agreement, plan or scheme, express or implied, formal or informal, with any competitor with regards to prices, terms and conditions of sale or service, production, distribution, territories or customers.

International trade laws

We are committed to complying with the applicable laws and regulations in the countries where we operate. Also, we ensure compliance with applicable national and international sanction regulations.

Accounting standards and records

In order to guarantee the accuracy of our financial records, employees are responsible for providing complete, reliable and accurate data. We work according to accounting standards and procedures that are key in meeting our obligation to provide full and transparent disclosure to stakeholders and regulatory authorities.

The complete DEME Code of Ethics and Business Integrity can be found on our website.

**DEME
CONCESSIONS
& GSR**

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A photograph of several flagpoles, each with a red and white striped pattern, extending diagonally across the frame from the bottom left towards the top right. The background is a clear blue sky with some light, wispy clouds. The flagpoles are arranged in a slightly overlapping, parallel fashion.

DEME CONCESSIONS

DEME Concessions brings together all our concessions in the fields of infrastructure (dredging and marine infrastructure), renewables (wind, wave and tidal) and marine resources. DEME Concessions provides equity, project finance and specific knowledge to support the various activities of our Group and aims to develop projects on the basis of a true partnering philosophy.

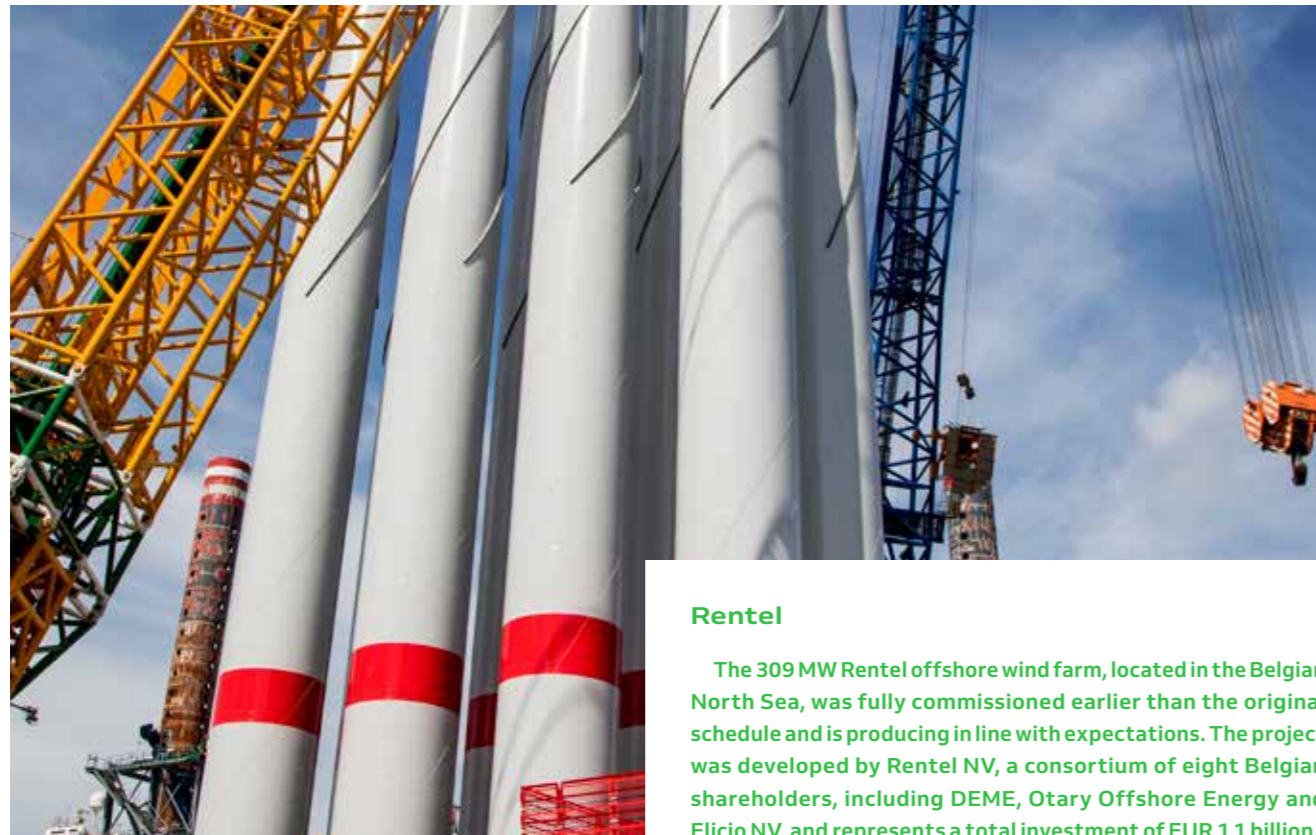
RENEWABLES

Merkur

We have a 12.5% share in the 396 MW Merkur offshore wind farm in Germany. Close to EUR 500 million in equity was provided by a consortium of five partners, including us. The 66-turbine wind farm is already supplying its energy to the grid. In an industry first we also refinanced this project before it was completed.

Dunkerque offshore wind farm

The French energy regulator, Commission de Régulation de l'Energie (CRE), preselected us and our consortium partners to potentially develop a 5-600 MW offshore wind farm off Dunkerque. An announcement about the tender is expected in 2019. We are partnering with energy giant Shell and French marine renewable technology specialist Quadran Energies Marines in this project. The partnership, called 'Moulins de Flandre', aims to make the Dunkerque wind farm a competitive project serving the local area. The 'Moulins de Flandre' partners share a strong complementary expertise and successes in the construction of more than 50 offshore wind farm projects across Europe.



Rentel

The 309 MW Rentel offshore wind farm, located in the Belgian North Sea, was fully commissioned earlier than the original schedule and is producing in line with expectations. The project was developed by Rentel NV, a consortium of eight Belgian shareholders, including DEME, Otary Offshore Energy and Elicio NV, and represents a total investment of EUR 1.1 billion.

SeaMade

DEME holds a participation in the concessions for the Seastar (246 MW) and Mermaid (266 MW) offshore wind farms in Belgium. In summer 2018 these two wind farm projects merged into the 'SeaMade' project. SeaMade NV is responsible for the simultaneous development of both Mermaid and Seastar, resulting in the single largest wind farm financed and built in Belgium. Financial close was reached on schedule in December 2018, only two years after the financial close of the Rentel offshore wind project. SeaMade will start construction in the summer of 2019. Besides Rentel and SeaMade, we also hold a 6.46% share in the C-Power wind farm in the Belgian North Sea.

Wave and Tidal

We acquired a minority interest in the Scottish development company Tidal Power Scotland Limited (TPSL), which controls the MeyGen project, Pentland Firth, Scotland - the world's first commercial-scale grid-connected tidal stream array. Phase 1A (6 MW) was installed in 2017 and generated over 10 GWh by the end of 2018.

Besides the participation in TPSL, we are involved in DEME Blue Energy, together with ParticipatieMaatschappij Vlaanderen, and in cooperation with Nuhma, we are also an equal partner in Bluepower, another tidal energy development company which is developing the West Islay Tidal Energy Park in Scotland (30 MW).

The MeyGen project has performed better than expected, generating over 10 GWh by the end of 2018. Together with its successful installation and operation, it is considered the reference project for the global blue energy industry.

The MeyGen development adopts a staged build-out approach with a planned expansion of Phase 1A with two more 2 MW turbines in 2019. This will be followed by the first of the commercial build-out stages, representing a capacity of up to 82 MW. If all the proposed phases, including Phase 2 and 3, come to fruition MeyGen will have a capacity of up to 398 MW.

Despite delays in decisions regarding vital revenue support for emerging blue energy technologies, there are still global opportunities (e.g. the UK, France, Canada, Asia) in which we continue to play a key role. 2019 is a pivotal year for the future of the industry.



INFRA STRUCTURE

Blankenburg Connection

Rijkswaterstaat (The Directorate-General for Public Works and Water Management of the Netherlands) awarded the EUR 1 billion, Public-private partnership (PPP) project 'A24 Blankenburg Connection' to the BAAK Consortium, which consists of Deme Concessions, Ballast Nedam and Macquarie Capital. The project includes the design, build, finance and maintenance for a period of 20 years using existing and new infrastructure. In October the project reached financial close.

The A24 Blankenburg Connection connects the A20 and the A15 and will improve

access to Rotterdam. Preparations are in full swing with a team of some 300 Deme people involved in the project.

We are pleased to be working with strong and complementary partners and look forward to the successful execution of this major project. Our participation on both the financial side and the marine and infrastructure side for the construction are a key success factor in our strategy to deliver comprehensive solutions in developing infrastructure projects. This project is an opportunity to employ our expertise in our Benelux home market, optimally exploiting the synergies in our activities within the group.



MINERAL CONCESSIONS

GSR

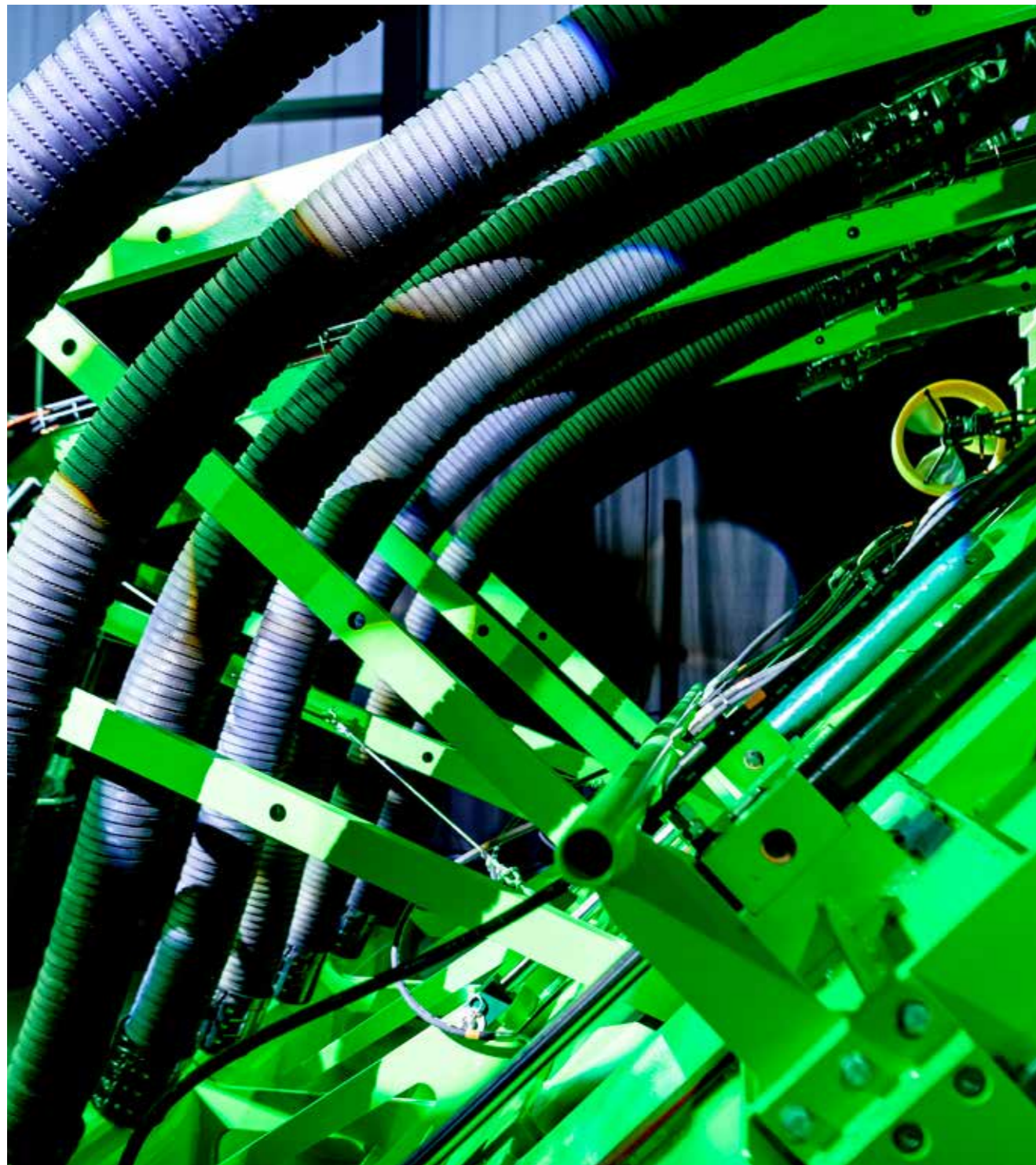
Global Sea Mineral Resources (GSR), one of our specialist subsidiaries, focuses on the development of a sustainable marine harvesting industry. In 2013 we signed a 15-year contract with the International Seabed Authority to prospect and explore polymetallic nodules.

2018 marked the completion of another major milestone within our ProCat project, which aims to design and build a pre-prototype nodule harvesting vehicle. In December 2018, the pre-prototype vehicle, PPV Patania II, was shipped from Belgium to Denmark where it was installed on board a vessel that was chartered for our

offshore campaign in 2019. In an earlier phase, the Patania I was tested in-situ, in the harsh environment of the deep sea, 4,500 m below the ocean surface.

We also submitted our prior Environmental Impact Statement to the International Seabed Authority and to the Belgian Government in March 2018. Moreover, we went beyond the legal requirements and made the document public, so it is accessible to all stakeholders. 🌱

GLOBAL SEA MINERAL RESOURCES



Our deep sea specialist, Global Sea Mineral Resources NV (GSR), had a breakthrough year in 2018 when it completed another major milestone within its ProCat project, which aims to design and build a pre-prototype, nodule harvesting vehicle.

In 2013, we signed a 15-year contract for the exploration of poly-metallic nodules with the International Seabed Authority (ISA). Under the contract, we have the exclusive rights for the exploration of 76,728 square km of seabed in the North Equatorial Pacific Ocean, between Hawaii and Mexico. This type of seabed mineral contains nickel, cobalt, copper, manganese and molybdenum and is found on the surface of the seabed at a depth of 4,500 m.

The first phase of the ProCat project started in 2016 with two parallel R&D programmes focusing on the in-situ trafficability of tracked vehicles (TSTD Patania I, successfully tested in 2017) and the validation and optimisation of an innovative nodule collection head tested in a custom-built laboratory tank. ProCat's second phase merged these two programmes into the design and build of a pre-prototype vehicle, PPV Patania II.

Gearing up for offshore campaign

In 2019, the Patania II will be tested in-situ, in the harsh environment of the deep sea, 4,500 m below the ocean surface. In collaboration with the Massachusetts Institute of Technology (MIT), the size, concentration and behaviour of the turbidity plume created by the Patania II will be measured across different operational scenarios. From an environmental perspective, these trials will be a major opportunity to improve the understanding of the impact of future seabed exploitation activities. The results will lead to an optimised design of a nodule collection vehicle with minimal environmental impact. These are essential developments in order to proceed with the next step in our overall de-risking strategy.

To simulate future seabed exploitation activities, an area of 0.1 km² will need to be cleared of nodules to enable scientists to monitor the recovery of the eco-system afterwards. As there will not be a rise or pumping system yet, a temporary nodule storage bin has been fitted on the PPV Patania II to facilitate this research. As well as the plume generation and dispersion experiments, another key environmental objective will be understanding the integrated effects of mining-related

disturbance on the associated ecosystems and their functions. GSR submitted its prior Environmental Impact Statement to the International Seabed Authority and to the Belgian Government in March 2018. Moreover, we went beyond the legal requirements and made the document public so it is accessible to all stakeholders.

JPI OCEANS – MiningImpact 2

In the spirit of this pioneering expedition, we have teamed up with an international consortium of scientists through the “Joint Programming Initiative Healthy and Productive Seas and Oceans” (JPI Oceans) programme, which involves 31 partners from nine European countries. The JPI Oceans project, called MiningImpact 2, will independently study the environmental impact of these scaled seabed exploitation activities before and after the Patania II trials. State-of-the-art monitoring and research equipment such as an AUV, ROV and several types of lander systems will be deployed.

A crucial part of the expedition will be to define the spatial scale of the environmental impact on the seabed. The independent validation and transparency are considered vital to the success of the project and to get all the stakeholders ‘on board’ for the development of this new industry.

The MiningImpact 2 project runs until 2022 and follows the first phase of the MiningImpact project (2015 - 2017) that focused on experimental and rather small-scale disturbances on the sea floor over decadal timescales.

This unique collaboration also means that we will perform the experiment with the PPV Patania II in the BGR licence area (Bundesanstalt für Geowissenschaften und Rohstoffe – the German licence holder), which is around 1,000 km away from our contract area. The results at the two sites can then be compared.

We are also taking part in ‘Blue Nodules’, a four-year project that runs into 2019. Here, the European Commission-led project focuses on ‘Breakthrough Solutions for the Sustainable Harvesting and Processing of Deep-Sea Polymetallic Nodules’.

From an environmental perspective, these trials will be a major opportunity to improve the understanding of the impact of future seabed exploitation activities.



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In September 2018
the innovative pre-
prototype nodule
collector 'Patania II'
was unveiled.
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1

DREDGING & LAND RECLAMATION

Dredging and land reclamation are more than just our core activities. They are at the very foundation of our company.

We are involved in dredging and land reclamation projects worldwide, offering customers innovative solutions for even the most complex projects and challenging environments. We operate the most technologically advanced fleet, including the world's first dual fuel dredging vessels. Over the past few decades, we have executed major marine engineering infrastructure works such as the development of new ports, waterways, airports, artificial islands, residential and recreational areas, industrial areas, roads and bridges, on all continents.

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EUROPE

BELGIUM
Maintenance dredging on the main waterways and the North Sea



BELGIUM

Antwerp, Ghent and the Belgian coast

In Belgium we carried out a number of long-term maintenance dredging contracts on the main waterways and the North Sea. On the Scheldt River and the access channels to the port of Antwerp locks, TSHD 'Pallietter' executed several maintenance dredging campaigns. A large volume of dredged sediments from the port of Antwerp is being treated at AMORAS, Europe's largest mechanical dewatering plant for dredged materials and this is set to continue until the end of 2019. Maintenance dredging also continued on North Sea access channels at the port of Zeebrugge and in the marinas of Ostend, Zeebrugge and Blankenberge. This is also ongoing and will continue until end 2019.

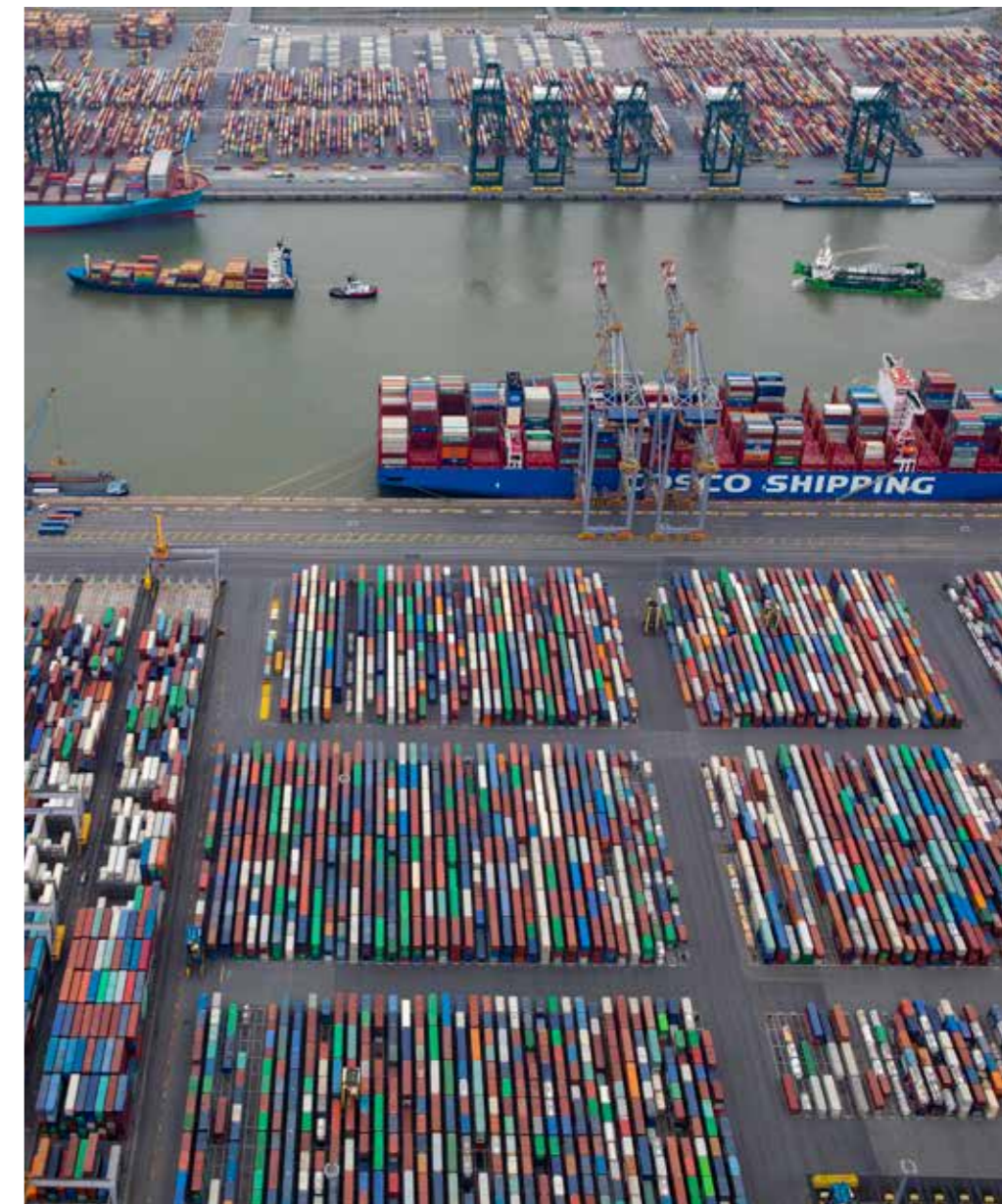
In 2018 maintenance dredging works and the treatment of contaminated sediments were performed as part of a four-year contract which was awarded to us in 2017. The contaminated sediments are treated by DEC, our environmental specialist, in its sediment recycling centres.

Beach replenishment in Ostend

We performed a two-month beach replenishment project in Ostend, Belgium. The TSHD 'Uilenspiegel' carried out the work which represented around 300,000 m³.

Zeebrugge port

We were awarded a three-year 'sweep' contract for Zeebrugge port, involving levelling out the high spots underwater with a deep-water plough. During the year, the work was mainly performed near the quay walls to maintain the depth to accommodate the new generation of larger vessels.

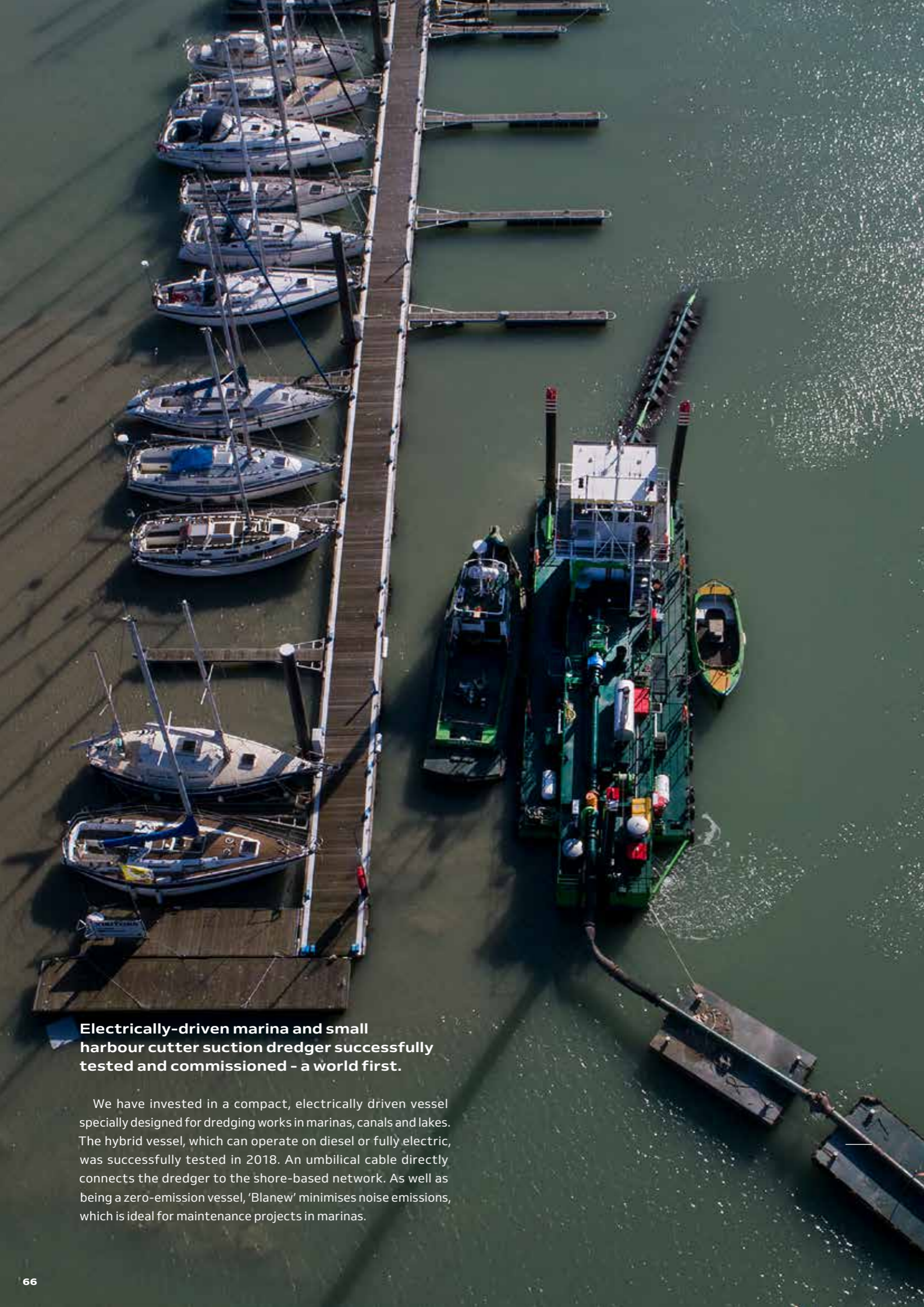


Soil investigation in front of Belgian coast

A soil investigation was executed off the Belgian coast on behalf of the Flemish government.

Antwerp port

Dredging works were executed at a renovated quay wall in the port of Antwerp. The renovation was carried out by DIMCO, our infra marine specialist. Dredging was completed in October and the sediment was sent to the AMORAS facility in Antwerp for treatment.



Electrically-driven marina and small harbour cutter suction dredger successfully tested and commissioned - a world first.

We have invested in a compact, electrically driven vessel specially designed for dredging works in marinas, canals and lakes. The hybrid vessel, which can operate on diesel or fully electric, was successfully tested in 2018. An umbilical cable directly connects the dredger to the shore-based network. As well as being a zero-emission vessel, 'Blanew' minimises noise emissions, which is ideal for maintenance projects in marinas.

Nieuwpoort Marina

As part of a consortium, we have been awarded a contract by the Flemish government to perform dredging works for the construction of a new marina in Nieuwpoort starting in 2019.

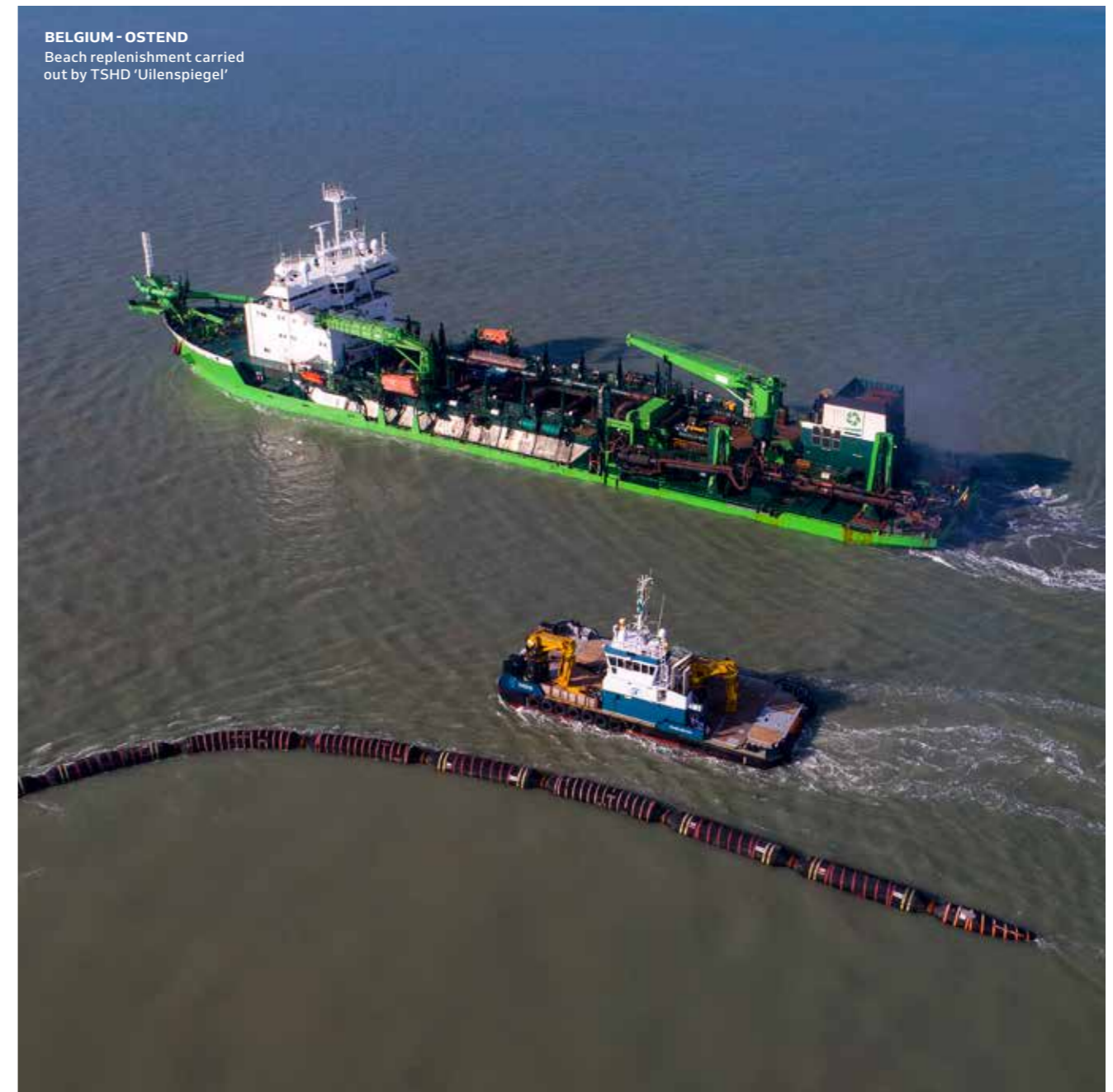
The marina of Nieuwpoort, with 2,000 berths, is already one of the largest in northern Europe, but there is a demand for moorings for boats in excess of 15 m. This meant an additional dock with an adapted draught was required. The development will eventually lead to a new district with 1,000 accommodation units and 500 extra berths.

Modular Offshore Grid

Preparatory works have started for submarine power cable installation for the Modular Offshore Grid in the North Sea. In 2017 the contract was secured from Belgian transmission system operator Elia. The installation scope includes the supply, installation and maintenance of the submarine power cables. For seabed preparation, we will deploy our dual fuel hoppers 'Minerva' and 'Scheldt River', the world's first liquefied natural gas (LNG) powered dredgers. Cables will be installed by the innovative multipurpose and cable installation vessel 'Living Stone'.

Knokke

In early 2019 a major beach reclamation project of 1.5 million m³ in Knokke was awarded to a consortium of which we are a member.



BELGIUM - OSTEND
Beach replenishment carried out by TSHD 'Uilenspiegel'

GERMANY

2018 was an exceptional year for our German subsidiary Nordsee Nassbagger- und Tiefbau (Nordsee) on many fronts.

The company celebrated its 50th anniversary and has been extremely busy with simultaneous maintenance dredging contracts on two of Germany's major rivers. Over the decades Nordsee has always been a pioneer and they consolidated that reputation by becoming the first company to operate a fully LNG-powered dredger along the River Elbe during this year's maintenance campaign.

Elbe and Weser

Originally, we acquired a two-year maintenance dredging contract for the River Elbe in a joint venture in 2017, but this was extended for another year and will now run into 2020. We have to maintain the entire 116 km fairway of the Elbe between the North Sea and Hamburg. In 2018, our vessels put in a strong performance and carried out the work safely and efficiently. The TSHDs 'Breydel', 'Marieke' and 'Scheldt River' handled most of the volume.

Simultaneously, we executed a two-year maintenance dredging contract on the River Weser, ensuring the navigational depth to the port of Bremerhaven. Working on both the Elbe and Weser, we maintained the fairways to the two biggest container ports in Germany in 2018.

Cuxhaven

In the summer of 2018, we successfully completed the final stages of the dry earthmoving works, rock revetment and scour protection for the expansion of the Europakai in Cuxhaven. The expansion included the addition of Berth 4 to accommodate increasing roll-on/roll-off cargo, as well as the growing demand from the offshore wind industry. By working in a strong partnership with local contractors, we were able to deliver the best possible solution to the client, Niedersachsen Ports.

Bremen

In November 2018, we were awarded an interesting reclamation project almost right on Nordsee's doorstep in its home port of Bremen. The scope involves dredging 500,000 m³ of material for the reclamation of an area which is being transformed into an industrial area. The new land has to be delivered in July 2019. After the successful completion of the River Weser maintenance project, we are delighted to be back on the banks of the River Weser.

POLAND

Świnoujście - Szczecin fairway

As the leading contractor of a joint venture, Dredging International will design and execute the construction and dredging works for the modernisation of the Świnoujście - Szczecin fairway. The fairway provides access from the Baltic Sea, starting at the city of Świnoujście up to the Port of Szczecin located some 66 km further inland. The fairway currently has a depth of 10.5 m and will be deepened to 12.5 m enabling the port of Szczecin to handle larger draught vessels and maintain its competitive position in the Baltic Sea.

The main scope of the project includes design works, the survey and removal of ferromagnetic objects and unexploded ordnances (UXOs), capital dredging of more than 20 million m³ and the relocation of the dredged soil to create two artificial islands in the Szczeciński Lagoon. The civil works also include the revetment and the construction of several quay walls and river banks in order to cope with the design of the new fairway. The execution of this modernisation programme is financed under the Polish National Programme for infrastructure and environment, which is largely financed by European funds.

The UXO survey and soil investigation works started in November 2018. The total project has to be finalised in 42 months and we will need to mobilise medium and large-sized TSHDs, a CSD and a backhoe dredger for this challenging project.



Milestone with first LNG bunkering of our dual fuel dredger 'Scheldt River'

We are proud to be the operator of the first LNG-fuelled dredger to operate along the River Elbe. We carried out several successful trials along the river with the new, dual fuel hopper 'Scheldt River', including the largest LNG bunkering operation in Germany and the first bunkering of a hopper dredger as well. This move was warmly welcomed by the port authorities and other stakeholders in the region. In fact, the innovative 'Scheldt River' has proved the ideal vessel for the River Elbe, in terms of draught, speed, and its 8,400 m³ hopper size, as well as it being able to radically reduce CO₂ emissions. Deploying dual fuel vessels shows our leading position in the industry and sets the next milestone for new environmental standards for the whole dredging industry.

GERMANY - BRUNSBÜTTEL
LNG bunker operation for 'Scheldt River' sets new milestone for using LNG as fuel for dredging vessels

THE NETHERLANDS

We are executing three major infrastructure contracts in the Netherlands: the RijnlandRoute, the New Lock Terneuzen and the Blankenburg Connection. Besides the infra marine works, a major dredging and ground works component is involved. Several of our companies are working shoulder to shoulder on these mega projects and they highlight the diverse capabilities and synergies within the group.

RijnlandRoute

For the RijnlandRoute, which is a new road connection from Katwijk to Leiden in the Netherlands, more than 1 million m³ of sand was transported and supplied for the project throughout the year. This represented more than 2,000 ship movements. A total of 1.4 million m³ were eventually delivered, with the final shipments taking place in early 2019. The project includes a 2.2 km bored tunnel and this year, we will transport the sludge and mud that comes out of the new tunnel to the dumping area situated next to the project, which is known as the Meeslouwer plas. This is a former sand mining area and a nature and leisure area today, so strict rules and regulations have to be taken into consideration.

New Lock Terneuzen

The 427-metre-long New Lock Terneuzen is being constructed on the existing Terneuzen locks complex and is designed to provide better access to the ports of Ghent and Terneuzen.

We are responsible for the dredging and dry earthmoving works of the New Lock. A staggering 9 million m³ of material has to be dredged and works got underway in November 2018. The design and build project is due for delivery in 2022.

Our Dutch subsidiary de Vries & van de Wiel performed remediation and reclamation works in 2018 under Phase 1 and 2 of the project at the Schependijk near the New Lock. Some 25,000 m³ of material was removed from the Schependijk and then transported to sister company DEME Environmental Contractors' (DEC) sediment treatment centre. The material will be completely cleaned and returned to the market. At the end of 2018, the company tackled the remediation of more heavily polluted spots.

Blankenburg Connection

Financial close for the prestigious A24 Blankenburg Connection was achieved in October 2018. Dredging International is responsible for dredging and dry earthmoving works. Preparations have started. Dredging and backfilling represent approximately 1 million m³ and dry earthmoving works around 2 million m³.

Rijkswaterstaat awarded the EUR 1 billion, Public-Private Partnership project 'A24 Blankenburg Connection' to the BAAK Consortium, consists of our firm, Ballast Nedam and Macquarie Capital. The project comprises the design, build, finance and maintenance for a period of 20 years.

Rivers Nederrijn and Lek - Renovation of three weir complexes

De Vries & van de Wiel also worked alongside DIMCO, in a major renovation project involving three weir complexes on the rivers Nederrijn and Lek. In 2018, this was the largest project in the company's portfolio.

As part of a consortium DIMCO and Siemens Netherlands are carrying out the project on behalf of Rijkswaterstaat, which is responsible for the management and maintenance of Dutch waterways. De Vries & van de Wiel executed the dredging and stone dumping works for DIMCO. The project management went smoothly and dredging works – involving approximately 140,000 m³ of sand and clay – were successfully completed in 2018.



THE NETHERLANDS - VENLO
Deepening and widening of a 7 km stretch of the River Maas

River Maas deepening

In another Rijkswaterstaat project, we deepened and widened the River Maas near Venlo, in the south of the Netherlands. We were responsible for dredging a 7 km stretch of river and handled 150,000 m³ of material.

Good risk management was essential. There were some problems because of the high water levels in the River Maas in the winter. Part of the company's scope was to monitor two bridges (a rail and road bridge) on the river and also detect and remove bombs and munitions left over from World War II. After carefully performing the initial UXO removal, the exercise had to be repeated again because the high water swept fresh sedimentation along

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Good risk management was essential
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and, potentially, new UXO. A staggering 25,000 individual munition pieces were found, including an intact 500 lb bomb.

Gorinchem-Waardenburg dyke reinforcement

Together with our partners, we won a prestigious tender to carry out a major dyke reinforcement project on the River Waal. The 'Dyke reinforcement Gorinchem-Waardenburg' (GoWa) project also introduced a new contract form, known as an alliance. It is believed to be the first time this contract form has been used in the Netherlands in a dyke reinforcement project and the first time the parties in the alliance work together from the very beginning of the project.

The Rivierenland Water Board (Waterschap Rivierenland) awarded the contract to the 'Waalensemble' consortium (Heijmans, GMB and us). The contract includes the surveys, design, planning and the realisation of the dyke reinforcement.

The 23-km dyke reinforcement is part of the Netherlands Flood Protection Programme. In 2018, the alliance team prepared the pre-design. The dyke reinforcement operations are due to start up in 2020.

Rivers in the west of the Netherlands

We are conducting a maintenance dredging programme for rivers in the west of the Netherlands, near Dordrecht and Rotterdam. The hopper dredger 'Zeeland' is being deployed for the five-year contract.



THE NETHERLANDS - RIJNLANDROUTE
1 million m³ of sand was transported and supplied

Two important projects in Amsterdam got underway in 2018, for which we established a joint venture.

Uburg – ‘Strandeiland’ (Beach island)

Together with our joint venture partners, we are carrying out a 145-hectare land reclamation project to create a new island, which will be a new residential area in Amsterdam. Under phase 1, and in the second half of the year, we delivered more than 1 million m³ of sand for the project. In total 12 million m³ will be delivered when all the phases are realised. The company is deploying five vessels on the project, including its specialist spray pontoon ‘Omega’.

Environmental precautions include protecting mussel banks with a curtain.

Environmental precautions include protecting mussel banks with a curtain. Additionally, the joint venture has to make a new beach to replace an existing one used by residents and this is being done in a very short time frame as it has to open for the spring season.

The ‘Sluishuis’

Again, in IJburg, we are also working on a dredging project which will prepare the contours of an iconic new building in Amsterdam – the ‘Sluishuis’ (Lock House). Work started in Q4 and will be completed in 2020.



THE NETHERLANDS - AMSTERDAM
Land reclamation for Strandeiland IJburg

UK

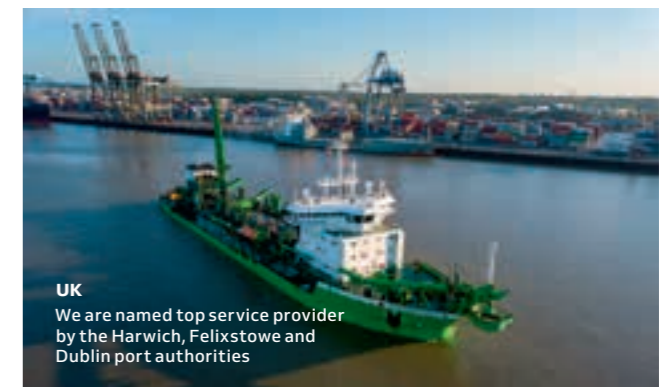
NewWaves Solutions is DEME’s British subsidiary, which is active throughout the UK and Ireland. Located in Canary Wharf, London, NewWaves Solutions is a single point of contact for UK-based projects and can provide integrated solutions, combining the strengths of DEME’s Group operating companies, from dredging or offshore renewables to infra marine expertise.

Able Seaton Port

We successfully completed the deepening of the access channel at Able Seaton Port in the early months of the year. This port is a major hub for the offshore wind industry, being the loadout port for the huge Hornsea One offshore wind farm project in which we are involved. The TSHD ‘Reynaert’ and ‘Scheldt River’ and backhoe dredger ‘Peter the Great’ were deployed on the project and eventually 711,000 m³ of materials were dredged.

Dublin Port

Capital dredging works along the access channel to the port of Dublin were finalised to the full satisfaction of the client in mid-March 2018. Just over 1 million m³ of material was dredged by our TSHD ‘Reynaert’ and the dual fuel TSHD ‘Minerva’, one of the first hopper dredgers in the world to have the capability to operate on LNG. Four separate campaigns were carried out.



Harwich and Felixstowe

The maintenance dredging contract for the ports of Harwich and Felixstowe was completed in June 2018, with 1.7 million m³ of material dredged. Several of our vessels were deployed in four campaigns over a six-month period. Operations began in January with the hopper ‘Reynaert’ and were completed by the hopper ‘Uilenspiegel’ in June. The TSHD ‘Victor Horta’ also worked on the project.

NewWaves Solutions is proud that its performance in 2018 at both Harwich and Felixstowe and Dublin has led both port authorities to name the company as one of their top service providers for their ‘Maintenance Dredging Framework’ contracts in the coming years.

FRANCE

We have had a presence in France since the early 20th century, working as a marine contractor for the development of major marine infrastructures in Le Havre, Marseille and Dunkerque amongst other locations.

Many long-term relationships with ports and river authorities in France and in the French territories overseas are at the heart of the work undertaken by Société de Dragage International (SDI), our French subsidiary. At the same time, building on these historical roots, we are extending our horizons by supporting the development of the offshore blue industry in the country.

Boulogne-sur-Mer, Calais and Gravelines

Highlighting its presence in the north of France, we carried out the contracts for the maintenance dredging at the ports of Boulogne-sur-Mer and Calais for the region 'Hauts de France' mobilising the TSHD 'Minverva' amongst other

vessels. Additionally, it performed the maintenance of the port of Gravelines for the 'Département du Nord'.

Le Havre

A new maintenance contract to perform water injection dredging was awarded to the 'Dhamra' water injection dredger. This campaign started in November 2018 in the port of Le Havre.

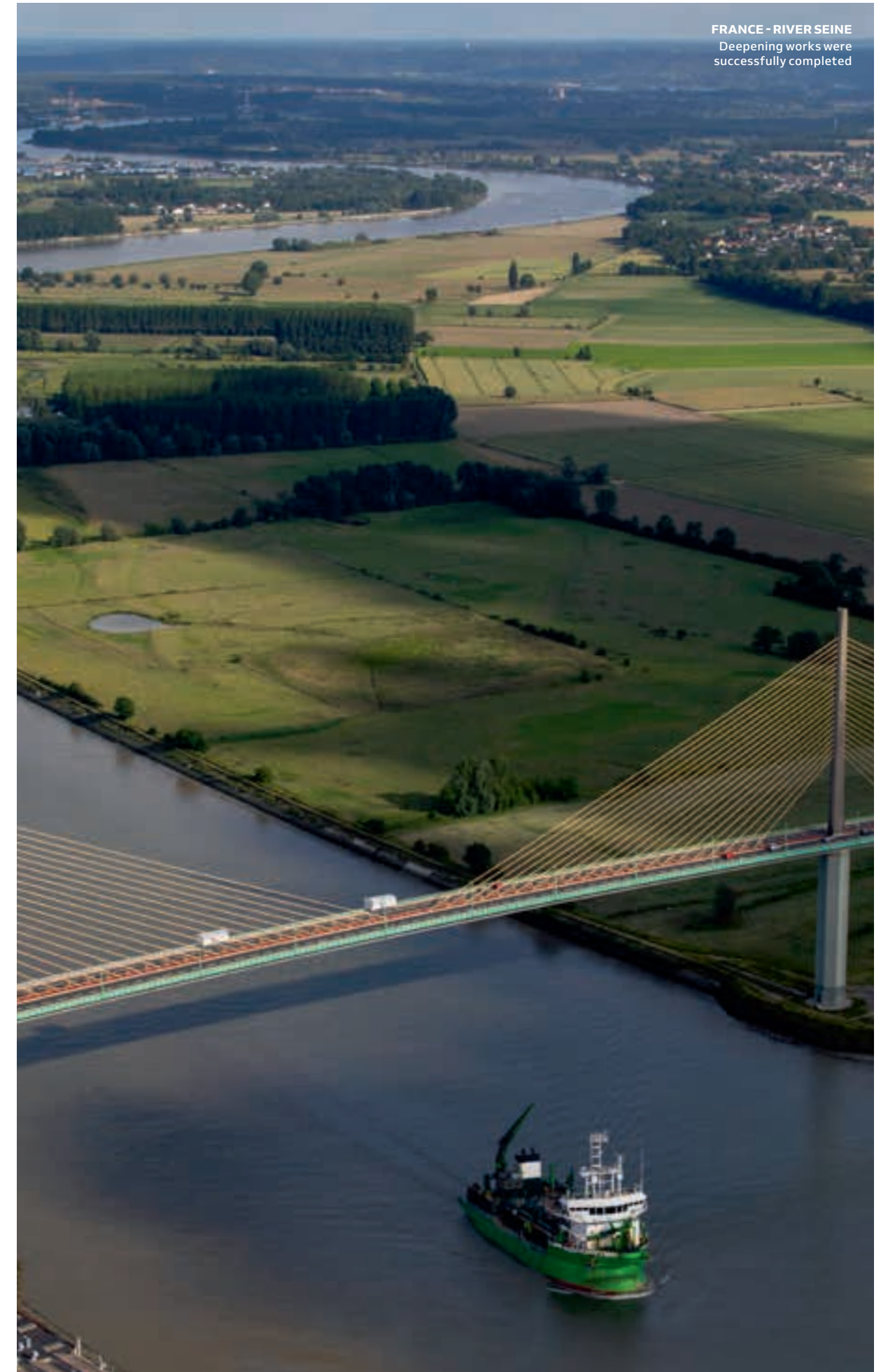
Le Havre, Rouen and Saint-Nazaire

The French waterways' public dredging company 'Dragages Ports' has been using our TSHD 'Breydel' as a replacement for the Authority's own vessel, which is currently

undergoing a conversion. 'Breydel' started maintenance work in October 2018 in several ports including Le Havre, Rouen and Saint-Nazaire.

Dunkerque

Alongside our sister company Ecoterres, we performed a dredging campaign in 2018, which totalled around 60,000 m³. This project is part of an ongoing dredging operation concentrating on historical sediment pollution in the port. The material is taken to a dedicated area in the port by Ecoterres, which then carries out the dewatering and drying process. The client reuses the dried and dredged material for a variety of projects.



FRANCE - RIVER SEINE
Deepening works were
successfully completed

FRANCE

We have had a presence in France since the early 20th century, working as a marine contractor for the development of major marine infrastructures in Le Havre, Marseille and Dunkerque amongst other locations.

Many long-term relationships with ports and river authorities in France and in the French territories overseas are at the heart of the work undertaken by Société de Dragage International (SDI), our French subsidiary. At the same time, building on these historical roots, we are extending our horizons by supporting the development of the offshore blue industry in the country.

Boulogne-sur-Mer, Calais and Gravelines

Highlighting its presence in the north of France, we carried out the contracts for the maintenance dredging at the ports of Boulogne-sur-Mer and Calais for the region 'Hauts de France' mobilising the TSHD 'Minverva' amongst other

vessels. Additionally, it performed the maintenance of the port of Gravelines for the 'Département du Nord'.

Le Havre

A new maintenance contract to perform water injection dredging was awarded to the 'Dhamra' water injection dredger. This campaign started in November 2018 in the port of Le Havre.

Le Havre, Rouen and Saint-Nazaire

The French waterways' public dredging company 'Dragages Ports' has been using our TSHD 'Breydel' as a replacement for the Authority's own vessel, which is currently

undergoing a conversion. 'Breydel' started maintenance work in October 2018 in several ports including Le Havre, Rouen and Saint-Nazaire.

Dunkerque

Alongside our sister company Ecoterres, we performed a dredging campaign in 2018, which totalled around 60,000 m³. This project is part of an ongoing dredging operation concentrating on historical sediment pollution in the port. The material is taken to a dedicated area in the port by Ecoterres, which then carries out the dewatering and drying process. The client reuses the dried and dredged material for a variety of projects.



River Seine and Le Havre

After the successful execution of deepening works in the Courval-Duclair section of the River Seine, we focused on the last phase of this project. We have actually been working on the Seine deepening since 2012 and have realised the four major phases of this challenging project, which is carried out on behalf of the Grand Port Maritime de Rouen (GPMR).

The company has handled approximately 800,000 m³ of material in the latest phase. Despite the dredged material often being sharp gravel, we have successfully managed to dredge materials and reclaim them so they can be reused by the port authority. TSHD 'Reynaert' and CSD 'Amazone' were busy dredging from March until the end of August 2018. The high spots in the River Seine were pre-cut with the 'Amazone' and later dredged by the hopper which reclaimed the material for refilling ancient quarry areas. ♻️

MEDITERRANEAN



ALGERIA

Mostaganem

Trenching works for an HDPE pipeline for a new power plant close to the port of Mostaganem began in April with a grab dredger and continued in July 2018 with the 'Minerva'. Backfilling started in Q4 with a small grab dredger but this is currently on hold due to a delay with the HDPE pipe installation. It is currently anticipated that two grab dredgers will do the backfilling during summer 2019.



ALGERIA - MOSTAGANEM
Trenching and backfilling works for a HDPE pipeline for the new power plant

EGYPT

Alexandria, Ras Al Teen

In January 2018, we were awarded a major new contract by the Suez Canal Authority on behalf of the Egyptian Navy, following the completion of a 1.3 million m³ dredging project in 2017.

The project in Alexandria consists of dredging the basin and access channel for the new navy base and will eventually involve 6 million m³. Originally the project started off with the TSHDs 'Uilenspiegel' and 'Breughel', which carried out the reclamation work. In the second phase, which got underway in September, the CSD 'D'Artagnan' was deployed to dredge the basin and channel. The final phase started in January 2019 and will be performed by the CSD 'Al Jarraf' and TSHD 'Marieke'.



EGYPT - ALEXANDRIA
Dredging the basin and access channel for the new navy base

ITALY

Naples

A maintenance dredging campaign in the Port of Naples including the access channel and all the basins is in full swing. We will dredge volumes of 1.3 million m³ over the course of the project. Additionally, we have installed a water treatment facility. This project, commissioned by the Port Authority of Naples, is expected to be completed by mid-2019 and requires three grab dredgers. Execution was suspended by the client between April and July but then got back on track.

MOROCCO

Laayoune

We have been awarded a capital dredging contract in a joint venture for a new facility in the Port of Laayoune, Morocco. Work is expected to start mid-2019.

TURKEY

Büyükceli, Mersin

Approximately 40,000 m³ of rock will be dredged at the site of Turkey's first nuclear power plant in Akkuyu. The preliminary dredging works will be performed by the 'Al Jarraf'.

Dardanelles Straits suspension bridge

We concluded a prestigious contract to dredge the foundation pits for the new Canakkale Bridge, which will be the largest suspension bridge in the world. This project was completed in early 2018 to the full satisfaction of the client. 🌱

TURKEY, DARDANELLES STRAITS

We successfully completed the dredging works for the largest suspension bridge in the world



EASTERN EUROPE

2018 was a quiet year in Russia and Eastern Europe overall, but there are definite signs that 2019 will see a pick-up in activity.

RUSSIA

In a world first, our Russian subsidiary Mordraga successfully contributed to the construction of an LNG terminal some 5 km offshore of Kaliningrad. This project has been handed over to our client Gazprom.

The fallpipe vessels 'Flintstone' and 'Rollingstone' worked on the project. We had to place and fill caissons, each 22 m wide, to form the foundation of the offshore terminal. A 3-metre-deep rock bed was also part of the scope. We also had to dredge a trench for a pipeline that will bring the LNG ashore.



RUSSIA - KALININGRAD
Fallpipe works were carried out for a new LNG terminal in Kaliningrad

ASIA & OCEANIA

Our activities in Asia in 2018 have mainly been driven by three huge Singapore-based projects. But we have also worked in several other countries this year, including Vietnam, Taiwan and Australia. Work continues in Papua New Guinea too, as our longest continuous project enters its 22nd year of operation.



AUSTRALIA

Sunshine Coast Airport Expansion Project

We performed dredging and reclamation works to create the foundation for a new runway, approximately 2,450 m long, for the Sunshine Coast Airport Expansion Project (SCAEP). Works started in March 2018 with the installation of almost 5 km of shore pipeline along environmentally sensitive areas (marine park, frog breeding area, ...) and crossing a dune and main road to reach the project site. In July, we started dredging from the Spitfire Channel at Moreton Bay, 58 km from the airport site. The works were completed at the end of September 2018, well ahead of schedule and the turtle nesting season, with minimal disturbance to the surrounding communities and environment.

This was a challenging project as we had to work between a fully operational airport and a nature reserve with strict tailwater discharge requirements. The project was wrapped up ahead of schedule, within budget and LTI free. Overall, TSHD 'Nile River' dredged 1.2 million m³ of sand from the far offshore and pumped it ashore without the use of a booster station.

PAPUA NEW GUINEA

Lower Ok Tedi River

In 2018 we continued work on the Lower Ok Tedi River in Papua New Guinea. This is the most remote project that we are involved in, and the most long-standing, as the project now enters its 22nd year of operation.

The contract includes the removal of potential acid sulphate sediments, the result of mining activity upstream, from the Lower Ok Tedi River system.

Lower Ok Tedi is not only the most remote project in our portfolio, it is also in an area subject to seismic activity, heavy rainfall and significant river water level increases, as well as having very steep slopes. Despite this, we have an exemplary safety record, achieving a seven-year LTI-free milestone earlier this year.

AUSTRALIA - SUNSHINE COAST
1.2 million m³ of sand dredged by TSHD 'Nile River' for the Sunshine Coast Airport Expansion Project



TAIWAN

Kuantang – Third LNG receiving terminal, port construction and reclamation project

In a joint venture with Pan Asia Construction Corporation and Hwang Chang General Contractors Co Ltd., we have been awarded a major contract from the state-owned oil company CPC Corporation. This includes the dredging and land reclamation works for the creation of near- and offshore land platforms totalling 48 ha and the construction of breakwaters, an LNG berth and perimeter dykes - formed by large caissons - for a new greenfield industrial park and harbour development in the northern part of Taiwan. This ambitious project is a key part of the Taiwan Government's renewable energy transition scheme.

We are responsible for 15% of the scope, including the dredging and reclamation of an offshore artificial island, representing around 6 million m³ of various soil materials. All excavated and dredged soils will be reused as reclamation fill in the different reclamation areas, which will be compacted to meet CPC's requirements. Between now and the completion date in 2024, we plan to deploy a mega CSD, a TSHD and a backhoe dredger. We will execute all aspects of this project according to the provisions of the environmental impact assessment, the requirements of the environmental monitoring and management programme and the local navigation safety requirements.

VIETNAM

Dung Quat - Hoa Phat steel plant and port construction project

After receiving the Notice to Commence in December, we mobilised the TSHDs 'Brabo' and 'Congo River' in January 2019 to deepen the port waters, turning basin and channel of Hoa Phat's new port in Quang Ngai province, central Vietnam, and to improve access to the adjacent steel plant. The CSD 'Ambiorix' will also be deployed for the hard rock dredging. Due to be completed in 2019, some 4-6 million m³ of material is expected to be dredged in addition to 75,000 m³ of hard rock.



SINGAPORE - TTP1
The megaport taking shape with the 8.6 km quay wall



SINGAPORE - TTP1
TSHD 'Brabo' sailing in front of the caisson fabrication yard

SINGAPORE

Jurong Island Westward Extension (JIWE)

We successfully continued the four-year Jurong Island Westward Extension (JIWE) project in 2018 with an exemplary safety record. JIWE is the only reclamation ever to receive the WSH SHARP Safety Award from Singapore's Ministry of Manpower. Since the early 1990s, we have been involved in every stage of the reclamation projects that have led to the creation of Jurong Island from seven smaller islands. For this land reclamation project, 38 million m³ was reclaimed from Jurong Island, which is one of the world's largest oil refining and petrochemical hubs.

JIWE showcases our expertise in soft soil reclamation and the reuse of dredged materials for reclamation works. The use of soft dredged materials for reclamation fill requires extensive soil improvement techniques in order for the finished product to meet compaction, settlement and load bearing criteria.

Ayer Merbau Reclamation Phase 2

As part of a joint venture with Starhigh Asia Pacific Pte Ltd., we are currently working on a major design and build contract for JTC, including 35 ha of land reclamation that will further expand Jurong Island. JTC is the Singapore Government's lead agency for the development of industrial infrastructure.

The contract has an extensive scope which includes the design of the works, the hydraulic study of the reclamation channel, land side site clearance, bund construction with shore protection, dredging of the sand key, soil improvement works, sand supply, reuse of marine dredged material, sorted rock and land-based excavated material, drainage and the maintenance and diversion of the existing drainage system. The project is on track and is due for completion in 2020.

The Ayer Merbau Phase 2 reclamation is a complex and challenging project and subject to very strict environmental monitoring. Additionally, the work has to take place in a very busy maritime area and the site is located between the production facilities of two major hydrocarbon refining groups.

Tuas Terminal Phase 1

In another prestigious project in Singapore, together with our joint venture partner Daelim Industrial of South Korea, we completed more than 80% of the Tuas Terminal Phase 1 (TTP1) project by the end of 2018.

Construction of the last of 221 caissons, which will form the future quay wall, was completed four months ahead of schedule.

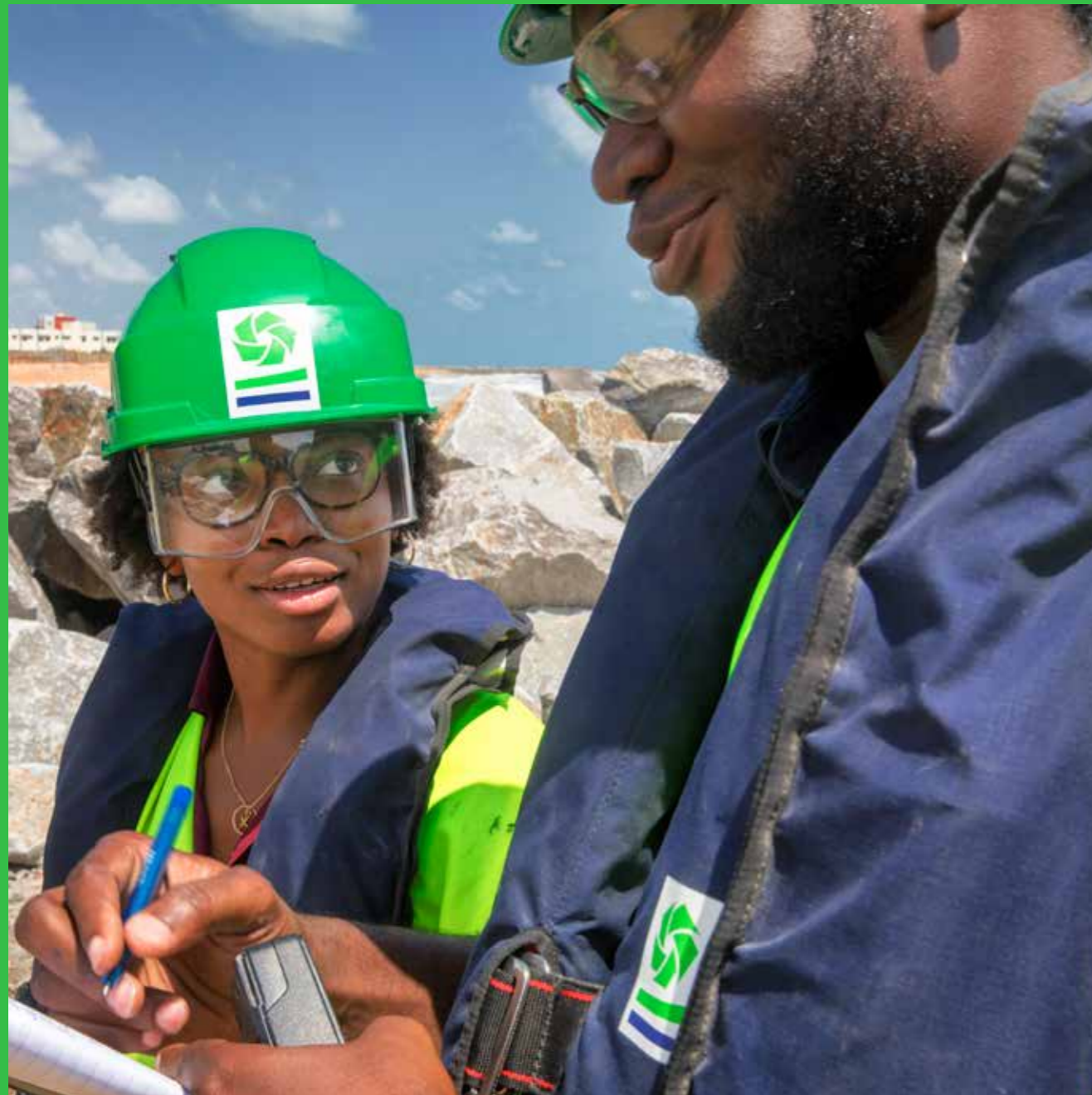
When the first phase is complete, 70 million m³ of land will have been reclaimed, with up to 2,500 people and 150 vessels working on the project at any one time. The project has also deployed a number of highly advanced, sustainable techniques.

In the staggering 30 million man-hours the joint venture has clocked up, the project has been awarded several LTI-free safety awards and the Silver Award for 'Workplace Safety & Health Innovation' from the Singapore Contractors' Association. 🌱

AFRICA

Africa has long been one of our core markets. We have decades of experience across the length and breadth of the continent. In 2018 we had a full schedule with deepening works, maintenance projects and land reclamation

in 10 countries. We were delighted to add The Gambia to the countries where we are active for the first time, and we returned to Gabon after a 15-year absence.



ANGOLA

Port of Soyo

We were awarded a five-year maintenance dredging contract by Angola LNG in 2017. As part of a joint venture, we have to maintain a safe and accessible navigation channel to the Port of Soyo. Our TSHD 'Breughel' spent two months in 2018 dredging 3 million m³ of material.

BENIN

Cotonou

In 2017 we were awarded a contract for coastal protection works along the Cotonou shoreline. Works continued throughout 2018 and will continue into 2019. The scope includes beach nourishment with a total volume of 1 million m³, revetment works and a groyne construction.

Additionally, we have just signed an extension contract to build an underwater dyke and dam to create a 'sea lake' to boost tourism in the area. The TSHD 'Breughel' is due to mobilise in 2019.

DR CONGO

Congo River

The TSHD 'Orwell' carried out its annual dredging maintenance on the Congo River,

handling 2 million m³ of dredged material. This is part of a 10-year Public Private Partnership (PPP) with La Congolaise des Voies Maritimes which guarantees a 26-foot draught and safe access to the ports of Boma and Matadi. Under the concession, users of the river pay a toll which, in turn, pays for the dredging work.

GABON

Owendo port

After an absence of 15 years we returned to Gabon when we were awarded a contract from the French group Bolloré Transport & Logistics to carry out maintenance dredging in Owendo port. Work kicked off in November 2018 with several planned interventions.

THE GAMBIA

Port of Banjul

In a highly symbolic project as The Gambia opens up to world trade opportunities, we were awarded a contract to perform emergency dredging work in the Port of Banjul, The Gambia's main port. The dredging work has enabled a ferry to operate freely across the river again after many years. This was our first assignment in The Gambia.

GHANA

Tema Port

In Ghana we were awarded a new contract for the Tema Port expansion project. Operated by Meridian Port Services (MPS), Ghana's main seaport is adapting to the next generation of container vessels and is aiming to improve its access and extend its capacity. Our project started in November 2018 and includes dredging 2 million m³ of material, most of which is rock. We mobilised our flagship CSD 'D'Artagnan' for the project.

GUINEA

Kamsar

TSHD 'Orwell' carried out a maintenance dredging campaign at the Kamsar Container Facilities for the Guinea Alumina Corporation.



BENIN - COTONOU
Coastal protection works are in full swing



NIGERIA - LAGOS
Land reclamation works Elegushi Island



NIGERIA - ESCRAVOS CHANNEL
Dredging works in the channel and port by TSHDs 'Marieke', 'Mellina' and 'Orwell'

SIERRA LEONE

Freetown Terminal

Our first project in Sierra Leone was successfully completed and handed over to the client in March 2018. We were part of a consortium that was working on the extension of the Freetown Terminal, which is operated by the French group Bolloré Transport & Logistics. The expansion project included

the construction of a new, 270 m-long quay wall to accommodate larger vessels.

We were responsible for soil improvement, reclamation and compaction works, as well as the deepening of the existing and future container berths. We deployed the TSHD 'Breydel' for the project.



SIERRA LEONE - FREETOWN TERMINAL
The newly constructed container terminal was inaugurated in November 2018

NIGERIA

Bonny and Onne

In 2018 we continued with maintenance dredging works as part of a long-term PPP with the Bonny Channel Company, a joint venture with the Nigerian Ports Authority. The TSHDs 'Breydel' and 'Orwell' dredged the channel to the LNG terminal in Bonny to ensure the ports of Onne and Port Harcourt remain accessible.

Bonny Island

We deployed the TSHD 'Marieke' and GBD 'Johanna' to conduct dredging works in front of the jetties at the LNG terminal on behalf of Nigeria LNG.

Elegushi Island

The dredging and land reclamation works that we started on Elegushi Island in the Lagos Lagoon at the end of 2017 continued in 2018. We deployed the CSD 'Rubens' to handle approximately 2 million m³ of material.

Notore Channel

We performed crucial deepening work in the Notore Channel for a new client in 2018. The channel had become heavily silted up, restricting a local fertiliser plant in the area, so the TSHDs 'Marieke' and 'Breughel' and CSD 'Seçkin' dredged the channel to a depth of 8 m, handling approximately 2 million m³ of material.

Escravos Channel

We performed dredging works in the Escravos Channel for the port of Warri. Between May and November 2018, our TSHDs, 'Marieke', 'Mellina' and 'Orwell', dredged almost 4 million m³ to restore the channel and port to a depth of 7.5 m.



CTOW

Combined Marine Terminal Operations Worldwide (CTOW) - a joint venture company owned by us, Herbosch-Kiere and Multiship - offers a full package of professional maritime services for the operation of dedicated maritime terminals.



In 2018, CTOW expanded its operations in Nigeria to five vessels, all of which are entirely crewed by Nigerian nationals and managed by mainly Nigerian staff. At the Nigeria LNG Ltd (NLNG) terminal on Bonny Island, CTOW has a long-term contract to operate two newly built 85-tonne bollard pull ASD tugs, 'CTOW Kathy' and 'CTOW An Sofie', which arrived in March.

Moreover, our 60-tonne bollard pull ASD tug, 'CTOW Lala' and a Stan Tender 1905 pilot launch, supported NLNG throughout the year. These vessels are all operated by CTOW's Nigerian subsidiary CMTON Ltd. Additionally, CTOW provides harbour towage services in the port of Onne with the 60-tonne bollard pull ASD tug 'CTOW Bieke'.

Towage assistance for the mammoth EGINA FPSO

In 2018, we undertook a challenging project in the port of Lagos as the Technical Partner of the Nigerian Ports Authority. We carried out towage support for the EGINA FPSO between March and June. As well as successfully performing multiple tows in the port and fairway, we sourced equipment and organised simulator training for the pilots, tug masters and tow masters. The simulator training culminated in safe and efficient tows of the FPSO, which had to be manoeuvred in a relatively confined space. For safety reasons, the port was closed during operations.

Total's EGINA FPSO, built by Samsung Heavy Industries Nigeria, is one of the largest FPSOs in the world. It arrived at LADOL Free Zone in Lagos for the final integration of topside modules. This mammoth facility is 330 m in length, 61 m in breadth, and 34 m in height and has a storage capacity of 2.3 million barrels. The FPSO is now installed at the Egina oil field, located some 130 kilometres off the coast of Nigeria. 🌱

MIDDLE EAST



OMAN
Sohar Port Development project

IRAQ

Umm Qasr Jetty Rehabilitation

In 2019 our TSH 'Antigoon' will carry out the dredging works related to the Basra Gas Terminal jetty rehabilitation, near the port of Umm Qasr. We will execute these works as a subcontractor for the Greek EPC contractor J&P-AVAX.

Umm Qasr Port Yard 5 Construction

ENKA, the Turkish EPC contractor, will be building a new quay wall for the Basra Multipurpose Terminal in the port of Umm Qasr. We have been contracted to execute the dredging works for the excavation of the foundation trench where the new quay wall will be constructed. Our CSD 'Al Mahaar' has been assigned for the works and was mobilised in December 2018.

OMAN

Sohar Port Development

We are working on reclamation works as part of the Sohar Southern Development Phase 1. From mid-2018 to April 2019 we are carrying out dry earthmoving works for this reclamation, including compaction of new industrial land in the southern part of the Sohar port, including the rock revetment works at the seafront. We were awarded the design and build contract in a joint venture with Earth Moving Works Worldwide.

QATAR

Old Doha Port Redevelopment

Following the successful completion of the New Port Project in Qatar where we carried out the dredging of the access channel, we have been awarded a contract for the Old Doha Port Redevelopment project in a joint venture. We will execute the dredging works for the realignment of the access channel and construct a new mooring dolphin structure to allow the Old Doha Port to accommodate the largest new generation cruise ships.

Gewan Island

We have been awarded a contract to develop Gewan Island, situated next to The Pearl, the artificial island that we built in 2004-2005. The project scope includes the dredging and pumping of around 1 million m³ of material, earthmoving, earthmoving works for reshaping the existing island and for creating new, so-called 'marina islands' at the tail of Gewan Island, rock revetment for shore protection, beach installation and the construction of 1,200 m of shallow quay walls. Works started in June 2018.

Musaimmer Pumping Station

MIC Construct WWI, BESIX's subsidiary in Qatar, contracted us to perform the dredging works for the construction of an outfall diffuser at the offshore end of an outfall pipeline. The works will be completed by mid 2019. 💰

LATIN AMERICA



BRAZIL

Port of Santos

Following a one-year contract extension we conducted a maintenance dredging campaign for the second year at the Port of Santos, Latin America's biggest port, when the contract was extended for another year. Work on the access channel and inner harbour took place between October 2017 and May 2018 and was performed by TSHD 'Pearl River'. Approximately 2 million m³ of material was dredged.

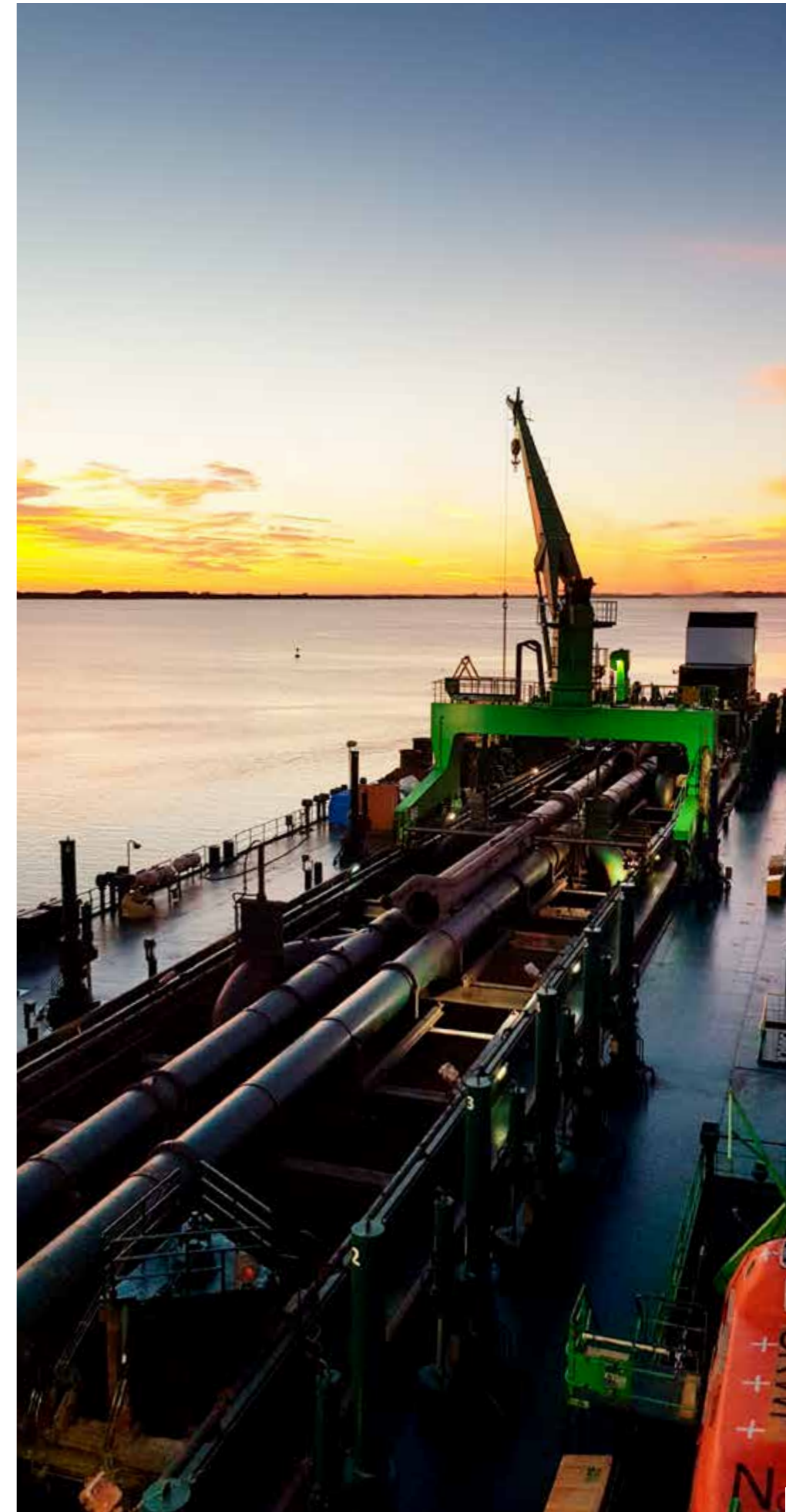
Sepetiba Bay

The TSHD 'Pearl River' performed maintenance contracts for VALE and CSN in the Sepetiba Bay area to the full satisfaction of our clients.

'Pearl River' also went on to carry out a maintenance campaign in the Port of Tubarao on behalf of VALE.

Port of Rio Grande

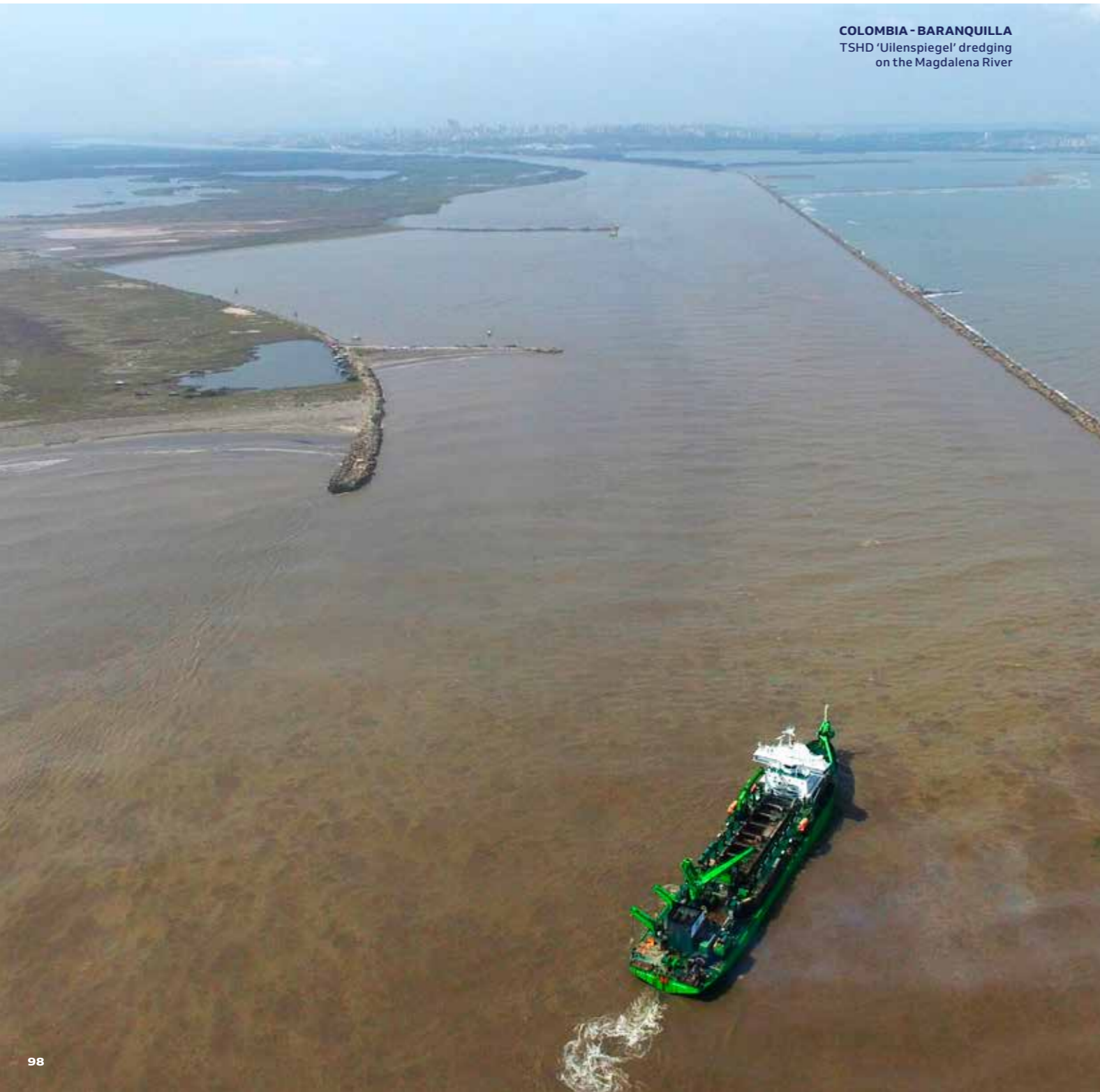
In November 2018 a new project began at the Port of Rio Grande, in the south of Brazil. In a joint venture, we will dredge the access channel on behalf of the port authority. This is expected to take around six months to complete.



COLOMBIA

We successfully performed two maintenance campaigns for Cormagdalena (the government agency responsible for navigation, ports and environmental protection) along the River Magdalena near the mouth of the River Magdalena.

Additionally, at the end of the year we signed a contract with INVIAS for the maintenance of the access channel of the port of Baranquilla. Works were carried out with the TSHD 'Uilenspiegel' in early 2019.



COLOMBIA - BARANQUILLA
TSHD 'Uilenspiegel' dredging
on the Magdalena River



PERU - PORT OF CALLAO
For the first time DEME
operated in Peru



PERU - SALAVERRY
Deepening of the Port of Salaverry

PERU

Callao and Salaverry

We were delighted to be awarded two contracts in Peru. This is the first time we have operated in the country. Maintenance dredging for the access channel to the Port of Callao took place at the end of the year.

Additionally, we were also contracted to deepen the Port of Salaverry, with the maintenance campaign kicking off in November 2018. The TSHD 'Uilenspiegel' has been working non-stop in the region and was also deployed for the projects in Peru.

URUGUAY & ARGENTINA

We were awarded a five-year contract in a joint venture for the deepening and maintenance of the Canal Martín García in December 2017. The Canal is located between Uruguay and Argentina in the northern part of the 50-km wide Rio de la Plata estuary. It is the main access channel to Uruguay's second largest port, Nueva Palmira, as well as to the Rio Uruguay, and is characterised by a high level of sedimentation, up to 4 million m³ per year.

The main objective of the dredging programme is to deepen the Canal and subsequently maintain a depth of 34 feet. In rocky areas this will be 38 feet. The capital phase began in April and was finished at the end of January 2019.

We deployed the TSHD 'Minerva'. Maintenance will start once the capital phase is completed. We participated in the original construction of the Canal Martín García in the early nineties.

PANAMA

With work completing last year on the historic Panama Canal project, we were awarded a new contract from the Panama Canal Authority to carry out a maintenance campaign at Gatun Lake, which was successfully carried out by the TSHD 'Uilenspiegel' over the summer months. 🌱



INDIAN SUBCONTINENT



International Seaport Dredging (ISD) is our local Indian subsidiary with its head office in Chennai. We have been performing project execution activities in India for almost 20 years and with a steadily growing economy we expect plenty of opportunities to arise there in the future. In 2018, the number of employees expanded once again, mainly with the addition of the digital services team, which provides valuable assistance to several of our head office supporting departments.

INDIA

Seabird Phase II

At the end of 2018, we were nearing completion of the dredging scope of the prestigious Seabird Phase II project. Eventually, around 10 million m³ of materials will have been dredged and, if suitable, reclaimed. The dredging, reclamation, soil improvement and revetment works for the project are being carried out in a joint venture with Larsen & Toubro. Around 150,000 m³ was hard rock and involved drilling and blasting techniques. A large backhoe dredger and two barges were used to remove the fragmented rock.

Additionally, in another joint venture with Larsen & Toubro, we have been awarded a contract on the east coast of India to execute the dredging of the inner harbour of a new naval base. Bush clearing and site preparations took place in 2018. The TSHD 'Antigoon' and 'Brabo', as well as the CSD 'Al Mahaar', will be mobilised for the project.

Karwar

We performed a maintenance campaign at the port of Karwar, where we dredged the approach channel, turning circle and berth basin. A shallow dredger and grab dredger were deployed, as well as the TSHD 'Antigoon' for the deeper sections.

Mumbai

Our largest hopper dredger 'Congo River' and the local dredger, 'Antigoon', successfully completed a final maintenance sweep of the JNPT 4th container terminal's berthing pockets and turning basin in Mumbai. We also carried out the capital dredging at the terminal in 2017.

Jaigarh

We executed a maintenance dredging campaign on the access channel, berth pockets and turning basin in Jaigarh, a private port on the west coast, commissioned by JSW Steel.



INDIA
DEME's largest TSHD 'Congo River' was active on several projects across India



INDIA
Indian flagged hopper 'Antigoon'

Gopalpur Port

We worked on a major contract for phase 1 of the development of Gopalpur Port between April and June 2018 and preparations for phase 2 were getting underway at the end of the year. With TSHD 'Congo River' we maintained depths of 12.5 to 13 m in the access channel, turning basin and berth pockets. Phase 2 includes capital dredging with CSD 'Ambiorix'.

Kakinada

At the end of 2018, we were awarded a contract for an emergency maintenance dredging campaign in the seaport of Kakinada which meant that the TSHD 'Congo River' returned to India for a brief period. 🌱



INDIA
Dredging projects were carried out in various locations across India

INDIAN OCEAN

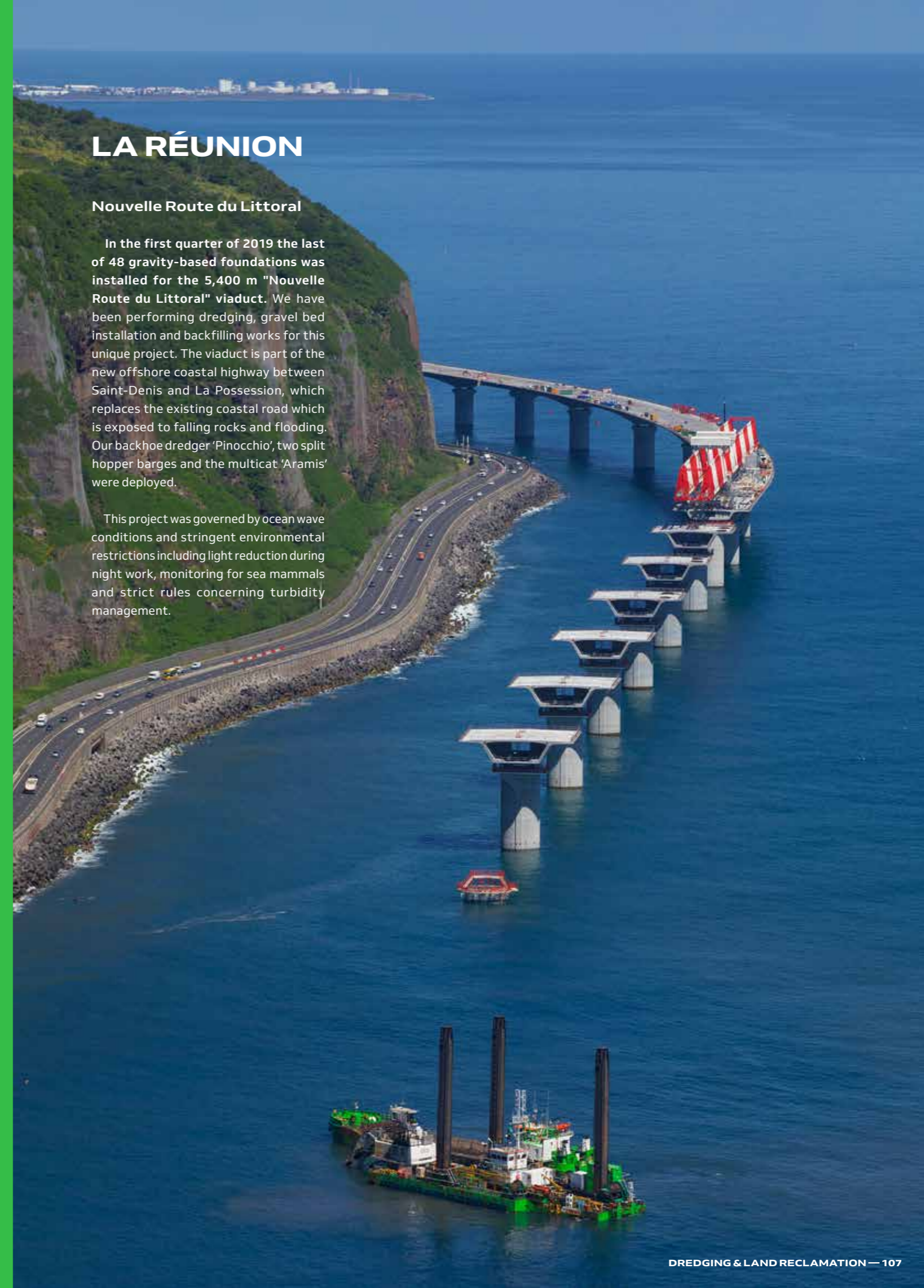


LA RÉUNION

Nouvelle Route du Littoral

In the first quarter of 2019 the last of 48 gravity-based foundations was installed for the 5,400 m "Nouvelle Route du Littoral" viaduct. We have been performing dredging, gravel bed installation and backfilling works for this unique project. The viaduct is part of the new offshore coastal highway between Saint-Denis and La Possession, which replaces the existing coastal road which is exposed to falling rocks and flooding. Our backhoe dredger 'Pinocchio', two split hopper barges and the multicat 'Aramis' were deployed.

This project was governed by ocean wave conditions and stringent environmental restrictions including light reduction during night work, monitoring for sea mammals and strict rules concerning turbidity management.





THE MALDIVES - RAHFALHU HURAA
Reclamation of four islands

THE MALDIVES

Rah Falhu Huraa

We completed the Rah Falhu Huraa island reclamation in The Maldives. The sand borrowing and reclamation campaign was executed by the TSHDs 'Nile River' and 'Congo River'. The scope also included revetment works.

Within the atolls we filled in sand up to a depth of 60 m to reclaim four islands, which are destined to become five-star resorts. 🌱

DEME BUILDING MATERIALS



DEME Building Materials (DBM) specialises in the extraction, transport, processing and supply of marine aggregates for the European construction industry.

2018 was undoubtedly a 'game of two halves' for DBM. The year got off to a rather slow start, but demand gradually picked up to reach a very high level in the second half.

The high demand for construction aggregates in the Benelux was mainly caused by the low availability of river dredged aggregates from Germany due to continuing strong local demand on the one hand, and extremely low water levels in the River Rhine, hindering transport by river barges on the other hand. Our production terminals in Vlissingen, Amsterdam and Ostend are free of these restrictions and provide a reliable alternative.

Strong demand in Vlissingen, Amsterdam & Ostend

Our terminal in Flushing (Vlissingen) produced over 1.1 million tonnes and volumes at Amsterdam also approached 1 million tonnes in 2018. The concrete aggregates being produced at these terminals are intended for the construction market in general, as well as for specific projects.

In the Benelux, DBM works alongside its sister companies Dredging International and DEME Infra Marine Contractors (DIMCO) and de Vries & van de Wiel, which are currently involved in three megaprojects in the Netherlands - the construction of the RijnlandRoute, the New Lock Terneuzen and the Blankenburg Connection.

In 2018, we provided some initial batches of sand and gravel to the New Lock Terneuzen project for testing purposes. The total project will require approximately 600,000 tonnes over an execution period of approximately three years, starting in 2019.

Supplies of gravel for the ongoing construction works of the IJmuiden Lock continued in 2018. With its dimensions of 500 m long, 70 m wide and 18 m deep it will be the world's largest sea lock, pushing the Kieldrecht Lock in Antwerp - another project of ours - down to second place.

We continue our ambition to encourage as much transport via the waterways as possible to reduce emissions and avoid traffic congestion. From this perspective, we greatly welcome the development of a mobile floating concrete plant, the 'Bonton', by our partner Gebr. De Rycke. Throughout 2018, the 'Bonton' was supplied with sand and gravel directly by river barges from the production terminal in Vlissingen. Moreover, the concrete produced by 'Bonton' was pumped directly into the works, thereby completely eliminating any further lorry movements.

High utilisation of DBM fleet

Outside of the Benelux, our specialist fleet was very busy with regular clients in the UK and France, especially in the areas around London and Paris. One French project this year saw us providing marine aggregates for an extension of a logistics site along the River Seine at the port of Radicatel. For this project, we dredged some 250,000 tonnes of marine aggregates from a licensed offshore area of the Seine Estuary. The aggregates were compacted into a solid sub-foundation for the port area and the project was successfully completed in June 2018. 📍

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OFFSHORE

We have a strong track record in providing services and solutions for the offshore energy market.

For our renewables customers we provide flexible solutions regarding foundation and turbine transport & installation, cable installation, operations & maintenance activities up to full Engineering, Procurement, Construction and Installation (EPCI) contracts. For oil & gas and other offshore customers, services include landfalls and offshore civil works, rock placement, heavy lift, subsea construction, umbilical laying and the installation and decommissioning of offshore platforms. We also provide the offshore energy industry with geoscience expertise to help our customers successfully realise their projects from start to finish.



RENEWABLE ENERGY



We had an exceptional year in the renewable energy market with the successful completion of many challenging offshore wind projects in Europe. A2Sea, the Danish wind turbine installation specialist that we acquired in 2017, is now firmly embedded in our offshore organisation. Throughout 2018, our offshore installation vessels were fully occupied on projects like Rentel, Merkur and Hornsea Project One. Outside of Europe, there were also several interesting offshore wind developments underway in Asia.

In a major milestone, one of our new flagships, the DP3 vessel 'Living Stone' entered service. This is the world's most advanced multipurpose vessel with highly innovative cable-laying capabilities, and she has exceeded all expectations, proving to be a real game changer in the industry.

2018 saw another strategic acquisition when we acquired Cathie Associates, a leading offshore geoscience and geotechnical engineering consultancy. Meanwhile, geotechnical investigation company G-tec, in which we took a majority share in late 2017, has brought added value to the company, with customers benefitting as these specialist services are now offered in-house.

BELGIUM

Rentel

The construction of the Rentel offshore wind farm in Belgium illustrates our multidisciplinary capabilities, providing renewable energy customers with a total solutions package. We smoothly completed the installation of 42 turbines in the summer. With a total capacity of 309 MW, Rentel will supply energy to some 300,000 Belgian households in Belgium. With a height of 183 m the turbines are the largest wind turbines thus far in the Belgian North Sea.

We also installed all of the inter-array cables and the export cable. Our vessel 'Flintstone' was deployed for the cable installation works, while the fallpipe vessel 'Rollingstone' executed post-trenching and rock placement works. With the goal to reduce cable installation time and costs, we ensure all of our cable laying and trenching equipment is deployed as efficiently as possible. For instance, the cable burial works at Rentel were optimised with the CBT 1100 trenching tool.

The 1,200 tonne substation for the Rentel wind farm sailed from the STX yard in Saint-Nazaire, France, in January 2018 and offshore installation was successfully completed later in the month with Scaldis' heavy lift vessel 'Rambiz'.

SeaMade

The offshore wind farms Seastar (246 MW) and Mermaid (266 MW) were combined into one project in 2018. SeaMade achieved financial close by the end of 2018. The project will include 58 wind turbines and will be located 40-50 km off the coast of Ostend.

Here, our ability to offer a full offshore wind farm package was highlighted when we were awarded three major contracts. We secured the Balance of Plant contract for the foundations, the EPC contract for the substations and the export cables contract. The export cables have a combined length of approximately 28 km. The construction of the project has already been initiated with offshore works to start in summer 2019. SeaMade is scheduled to enter into service before the end of 2020.

BELGIUM
Rentel substation foundation waiting to be transported offshore



BELGIUM
Installation of 42 turbines at Rentel was completed during the summer



DENMARK

Horns Rev 3

The monopile installation for the Horns Rev 3 wind farm located off the Danish west coast was completed in early 2018 and the installation of the transition pieces followed in the summer. The 406.7 MW wind farm is an extension to Horns Rev 1 and 2 and, when fully commissioned, will be the largest wind farm in Denmark. The final turbine was put in place in January 2019. Upon completion, the wind farm is expected to generate enough power to meet the annual consumption of up to 425,000 Danish homes.



GERMANY
Commissioning of the offshore substation at the Merkur offshore wind farm

GERMANY

Merkur

The Merkur offshore wind farm in Germany is probably one of the largest renewables projects we have ever undertaken in terms of the breadth of our responsibilities. We have carried out the full Balance of Plant EPCI contract at the 66-turbine 396 MW capacity wind farm, which included the offshore substation. We were responsible for the design, construction and installation of the complete scope, including the foundations (monopiles and transition pieces), the offshore substation (topside and jacket), inner array cables and turbine installation.

The topside for the offshore substation for the wind farm was installed early 2018. The topside is the result of a close cooperation between Belgian companies, including us, that are major players in the international offshore wind energy market.

The topside structure has four decks, is 20 m tall, weighs 2,500 tonnes and has an output capacity of 396 MW.

This awe-inspiring project was even completed well ahead of schedule in 2018. Our offshore installation vessel 'Sea Challenger' performed the turbine installation between February and September 2018 at the wind farm, which is located 45 km north of Borkum. The commissioning of the substation also took place in 2018.

Arkona

We also completed the installation of 60 turbines at the Arkona offshore wind farm far ahead of schedule despite the challenging conditions of the Baltic Sea. For this project we deployed our offshore installation vessel 'Sea Challenger'. In September 2018 Arkona started supplying electricity to the German electricity grid.

Hohe See and Albatros

We started the installation of 71 turbine foundations at the Hohe See wind farm in April 2018. We are Siemens' Engineering, Procurement, Construction and Installation (EPCI) partner at the 497 MW wind farm and were responsible for the design, manufacturing and installation of the foundations. Directly adjacent to Hohe See, the 16-turbine Albatros offshore wind farm will have a capacity of 112 MW.

Trianel Borkum West 2

Rock placement and scour protection works were carried out at the Trianel Borkum West 2 wind farm. Around 80,000 tonnes of rocks were used for the scour protection.



Borkum Riffgrund 2

In July 2018, the last suction bucket jacket foundation landed on the seabed at the Borkum Riffgrund 2 offshore wind farm in Germany. The wind farm will have a total capacity of 450 MW and will feature 56 turbines of 8 MW.

Our scope involved the transport and installation of 20 suction bucket jackets. Each of these weighs 950 tonnes and is 58 m high. This is the first time our

customer Ørsted has utilised this type of foundation at one of its wind farms on such a large scale. The suction bucket structure is firmly embedded in the seafloor by vacuum pressure, eliminating the need for hammering and significantly reducing noise during installation. With the completion of this project we are now one of the few companies with vast expertise and experience in suction bucket jacket installation. As well as the installation of the jackets being perfectly on schedule, we also performed part of the onshore logistics.

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With the completion of this project we are now one of the few companies with vast expertise and experience in suction bucket jacket installation.
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GERMANY
During the summer the last of 20 suction bucket jacket foundations landed on the seabed at the Borkum Riffgrund 2 offshore wind farm

THE NETHERLANDS

Borssele 1 & 2

We have been awarded a contract for the transport & installation of the 94 foundations and turbines for Ørsted's Borssele 1 & 2 offshore wind farm in the Netherlands. Located 23 km off the Dutch coast, the wind farm will have a total capacity of 752 MW.

We are responsible for the full scope of the Borssele 1 & 2 foundation installation, as well as the scour supply. The monopile foundations will have pre-installed scour protection, an anode cage and a bolted transition piece. Water depths range from 14 to 36 m. Under a separate contract, we will also provide installation vessel capacity to transport and install the Siemens Gamesa 8 MW turbines. Offshore work is due to start in 2020.

UK

Moray East Offshore Wind Farm

We are responsible for the Engineering, Procurement, Construction and Installation (EPCI) contract for the Moray East Offshore Wind Farm, which achieved financial close in 2018. Located in the Outer Moray Firth, off the North East coast of Scotland, Moray East will comprise one hundred 9.5 MW wind turbines. We are responsible for the EPCI contract for the 100 turbine foundations and three offshore substation platform foundations, as well as for the transport & installation of the three substation platforms. Jacket installation is set to start in 2020.

Triton Knoll

Preparations continued for the 860 MW Triton Knoll Offshore Wind Farm, where we are responsible for the transport and installation of 90 wind turbines. We are working closely alongside Triton Knoll to engage with UK suppliers and to help maximise UK content. The project achieved financial close at the end of August 2018 and offshore construction is expected to kick off in 2020.

Hornsea Project One

Throughout 2018, we installed foundations and turbines at Hornsea Project One. This is not only the largest offshore wind farm in the world but is also located 120 km offshore. Hornsea Project One will involve 174 Siemens Gamesa 7 MW turbines and will provide green energy for well over 1 million homes in the UK.

Caithness-Moray subsea power link

Following a contract award from NKT Cable Group, we performed rock placement works at the Caithness-Moray power link, which will

connect the electricity grid on either side of the Moray Firth in northern Scotland. With the high-voltage direct current (HVDC) power transmission link, Scotland is strengthening its power network to accommodate rapid growth in the generation of renewable energy sources. The rock placement works consisted of stabilisation and protection consisted of the nearshore and offshore trajectory of the cable. The fallpipe vessel 'Seahorse' was deployed on the project in 2018.



UK
Several DEMA vessels were deployed at Hornsea Project One, including fallpipe vessel 'Rollingstone'

Hornsea Project One is the largest offshore wind farm in the world.





UK
Foundation and turbine installation at
the world's largest offshore wind farm
Hornsea Project One

HORNSEA PROJECT ONE

A world first and a major construction milestone was reached at Hornsea Project One when we completed the export cable installation. With an offshore export cable totaling 467 km, roughly the same distance as Amsterdam-Hamburg, it is the longest AC offshore wind cable ever installed. Additionally, the cable manufacturing and installation were completed months ahead of schedule.

The world's largest offshore wind farm was the first project for our new cable installation and multifunctional vessel 'Living Stone'. With its 10,000-tonne cable capacity and cutting-edge dual-lane cable system, 'Living Stone' significantly improves cable installation production rates. The installation scope included laying export cables from three different offshore substations located up to 120 km offshore to the shore via a Reactive Compensation Station, as well as the installation of two interlink cables. We also undertook the boulder removal, pre-sweeping and cable pull-in to the substations, and executed crossing installation and cable burial. Completion of the project ahead of schedule was owed to the powerful new vessel 'Living Stone' which enabled us to accelerate the cable laying rate, plus the deployment of revolutionary, patented trenching technology with the trailing suction hopper dredger (TSHD) 'Lange Wapper'.

Hornsea Project
One is the largest
offshore wind
farm in the world.



CHINA

COSCO-DEME New Energy (CDNE), a joint venture formed in 2017 between DEME and COSCO Shipping, the largest shipping company in the world, has taken its first steps on the Chinese market.

Our DP2 jack-up vessel 'Goliath' was renamed 'LiYa' (Elegant Power) and now operates under the Chinese flag. 'LiYa' was deployed for turbine installation at the Binhai H2 wind farm and SPIC Jiangsu Dafeng H3 wind farm. As from end-2018 'LiYa' is deployed on the COECG Lufeng project for the installation of 16 intake shafts.

TAIWAN

In 2017 we entered into a cooperation agreement with CSBC Corporation, Taiwan's largest shipyard.

This joint venture combines our advanced techniques and experience of the European offshore wind market and diverse fleet with CSBC's knowledge of the Taiwanese Government's industrial strategy for offshore renewables, and experience as a renowned shipbuilder capable of the most complex vessel construction and repair works.

Together we are currently tendering in the Taiwanese offshore wind market. The Taiwanese Government has set out an ambitious renewables plan and aims to install a minimum of 3 GW in offshore wind capacity in the Taiwan Strait by 2025.

GEOSCIENCE EXPERTISE

We have a majority share (72.5%) in G-tec, specialised in offshore geotechnical and geological site investigations, geophysical marine and environmental surveys and deep-sea engineering services. With G-tec we have an in-house site investigation company and can deliver the full package of geoscience services to both the renewables industry and the oil & gas sector.

In 2018 G-tec was active at several offshore wind farm sites. The company performed the site investigation for the SeaMade wind farm in Belgium. In France, it carried out the geotechnical studies for the 496 MW offshore wind project at Iles d'Yeu et de Noirmoutier with its specialised, multipurpose drilling vessel 'Omalius'.

Additionally, G-tec performed site investigations for the Neart na Gaoithe (NnG) Offshore Wind Farm, which will be located 15.5 km off the Fife coast in Scotland. When fully operational the wind farm will generate electricity for some 375,000 homes.

With our jack-up vessel 'Vagant' we also performed a geotechnical campaign and carried out studies along the Belgian coast.

Cathie Associates joins DEME

In June 2018, we acquired Cathie Associates, a specialist offshore geotechnical and geoscience engineering consultancy company, with offices in the UK, continental Europe and the US.

Cathie Associates provides geoscience, geophysical and geotechnical engineering consultancy services to the oil, gas and renewable energy industries, bringing technical engineering expertise to clients globally. The highly specialised activities and know-how of Cathie Associates represent a strategic fit, enabling us to further reinforce our fully integrated services to the offshore renewables and oil and gas market.



Multi-purpose drilling vessel 'Omalius'



BELGIUM
A geotechnical campaign at the Belgian coast

—
The company
is continuously
investigating the
most efficient
logistics solutions.
—



With crew transfer vessels 'Aquata' and 'Arista', we offer efficient logistics solutions for transferring offshore wind technicians and spare parts

MAINTENANCE AND REPAIR SOLUTIONS

We also provide a broad portfolio of maintenance and repair services for the renewables industry. These include main component replacements, such as gearboxes and blades, logistics services such as the transport of technicians, spare parts, Balance of Plant activities such as surveys to verify the structural integrity of foundations, scour protection, the burial depth and position of cables, and measures to ensure the corrosion protection of offshore assets.

Activities in 2018 largely centred on main component replacements, an activity which has grown rapidly in the last few years. The company replaced around 100 main component parts, more than 70 of which were blades.

Able to call on vessels from our entire fleet, we kept the jack-up vessels 'Neptune' and 'Thor' fully occupied with maintenance activities. Although the main focus of the jack-up vessels 'Sea Challenger' and 'Sea Installer' is installation projects, they are proving to be very efficient for maintenance activities as well, particularly for the larger turbines. This improved availability of vessels leads to shorter response times, which results in higher electricity output for customers.

We continue to consolidate our position as leading position as a maintenance specialist for +5 MW turbines. At the end of the year, our new self-propelled jack-up vessel 'Apollo' joined the fleet and this new vessel is deemed the perfect partner for maintenance tasks for the next generation of 6-10 MW turbines.

Long-term framework agreement

In 2018, we were also awarded a long-term framework agreement which secures the supply of jack-up vessel services for major component replacements for a wind turbine OEM.

Additionally, the company has two dedicated crew transfer vessels 'Aquata' and 'Arista', and is continuously investigating the most efficient logistics solutions for transferring offshore wind technicians and spare parts in the safest, fastest and most comfortable way from the base port to the wind turbines.

With our strong track record in the European market, we are also exploring new opportunities further afield, in China and the US to name but a few. 🌍



Maintenance activities were largely centred on main component replacements, including more than 70 blades



LANDFALL CONSTRUCTION, ROCK PLACEMENT AND OFFSHORE CIVIL WORKS

Alongside offshore renewables activities we also had a very strong performance in the oil & gas market. With trenching, rock placement and landfall projects, our fleet of fallpipe vessels had high occupancy rates during the year. Projects spanned the globe, including a major contract for a 700-km subsea gas pipeline in the Gulf of Mexico and our first contract award in Bangladesh.

GULF OF MEXICO
Around 200,000 tonnes of rock were placed for the Sur de Texas pipeline

Leviathan Natural Gas Project

We completed the landfall construction, pre-trenching and rock placement works at the Leviathan project, offshore Israel, where 500 km of pipelines are being installed in the natural gas field. The trench was dredged to a depth of nearly 65 m.

Moheshkhali Floating LNG Terminal

We secured our first contract in Bangladesh for the Moheshkhali Floating LNG Terminal, which will be the country's first LNG import terminal. With up to 500 million standard cubic feet of gas per day of regasification capacity, Moheshkhali Floating LNG will provide much-needed clean energy to promote power reliability and industrial development in a sustainable manner. Marseille-based Geocean awarded DEME the contract for trenching and executing landfall works. The cutter suction dredger 'Ambiorix' was used to dredge the trench.

Burullus Power Plant

We were awarded a contract for the start-up of a Combined Cycle Power Project in Burullus, Egypt. The scope included more than 600,000 m³ of dredging and backfilling, as well as pipe laying. We completed the scope earlier than scheduled, despite difficult circumstances.

Sur de Texas

A rock stabilisation contract was awarded from TransCanada for its huge, near 700-km subsea gas pipeline, which will link the US with Mexico. Around 200,000 tonnes of rock was placed to stabilise the 42-inch pipeline. The mammoth interconnector couples the Nueces-Brownsville pipeline and the Tuxpan-Tula pipeline. The 'Rollingstone' performed the project within the strict four-month schedule.

Hasbah Offshore gas facilities

In a joint venture, we executed the pre-trenching and backfilling landfall works for the Saudi Aramco Hasbah Offshore gas facilities in the Arabian Gulf.

SAPREF

We carried out our first offshore assignment in South Africa for a pipeline lowering project near Durban for SAPREF, a joint venture between Shell SA Refining and BP Southern Africa. As the largest crude oil refinery in Southern Africa it represents 35% of the country's refining capacity.

Equinor Norwegian Continental Shelf

We performed several major projects around the Norwegian Continental Shelf on behalf of Equinor. In a joint venture,

we secured a major, long-term agreement with Equinor to provide subsea rock installation works, with the contract officially starting in April 2018.

Baltic Connector

We are the rock installation contractor for the prestigious Baltic Connector, which connects the gas networks of Finland and Estonia. The Baltic Connector will play a major role in the energy supply of both Finland and the EU. As well as the rock dumping activities to stabilise the pipeline from Inkoo, Finland, to Paldiski, Estonia, we are responsible for the landfall constructions in both countries. Rock placement for the 77-km pipeline began in 2018 and will continue in 2019.

Hinkley Point

In the UK, we have been appointed as a nominated subcontractor for the Hinkley Point power station shaft construction. The scope includes the dredging works for six pits required for the construction of the intake and outfall structures of the new station. Dredging was carried out with the backhoe dredger 'Peter the Great' and was completed in October 2018. The dredging of the pits marks the start of the marine works including the placement of precast concrete structures, large diameter piling and the construction of shafts and liners connecting the intake and outfall structures with the bored tunnels below. ⚡



FINLAND
Rock placement and landfall constructions for the 77-km Baltic Connector

THE NETHERLANDS

Decommissioning of the Q1 Halfweg
unmanned gas platform

PLATFORM INSTALLATION, DECOMMISSIONING AND HEAVY LIFT

With our expertise in platform installation and decommissioning services we achieved two milestone projects in the North Sea. We performed the only platform installation to take place in the southern North Sea, as well as the only decommissioning project in the Dutch sector of the North Sea. Both projects were the first assignments for our newest self-propelled jack-up vessel 'Apollo'. The smooth project completion demonstrates the versatility of 'Apollo' to perform a range of duties in the offshore energy sector.

Q10-A platform successfully installed

In November 2018, the transport and installation of the Q10-A platform was carried out seamlessly with the new heavy lift, DP2 vessel 'Apollo'. This was an important milestone for DEME because this is the very first heavy lift project to be carried out by the 'Apollo', which has a powerful crane with a capacity of 800 tonnes.

The so-called NUI - a 'normally unmanned installation' - was placed in the Dutch sector of the North Sea in Block Q10. Q10-A's jacket represents a weight of more than 610 tonnes and it has a topside of 482 tonnes. Rather than using the traditional grouting technique, swaging was used to connect the foundation piles to the jacket. The swaging tool is deployed inside the pile and plastically deforms the steel of the foundation pile against the sleeve of the jacket to provide a quick, secure and environmentally friendly connection.

North Sea platform decommissioning

In another important project, and one that brings attention to the many platforms in the North Sea due to be decommissioned, we carried out the only platform decommissioning job in the Dutch sector of the North Sea in 2018.

In December, we successfully performed the decommissioning of the Q1 Halfweg unmanned gas platform on behalf of Petrogas E&P Netherlands BV. The scope included the engineering, preparations, removal and disposal of the 500-tonne topside, as well as the four foundation legs.

The Q1 Halfweg platform was a three-well, unmanned gas production facility which was installed in 1995. It was designed for 'self-installation' and consists of a concrete, gravity-based foundation which supports a process deck by means of four tubular steel legs of 60 tonnes each in a water depth of 24 m.

The decommissioning of the North Sea platform is a real 2018 highlight.

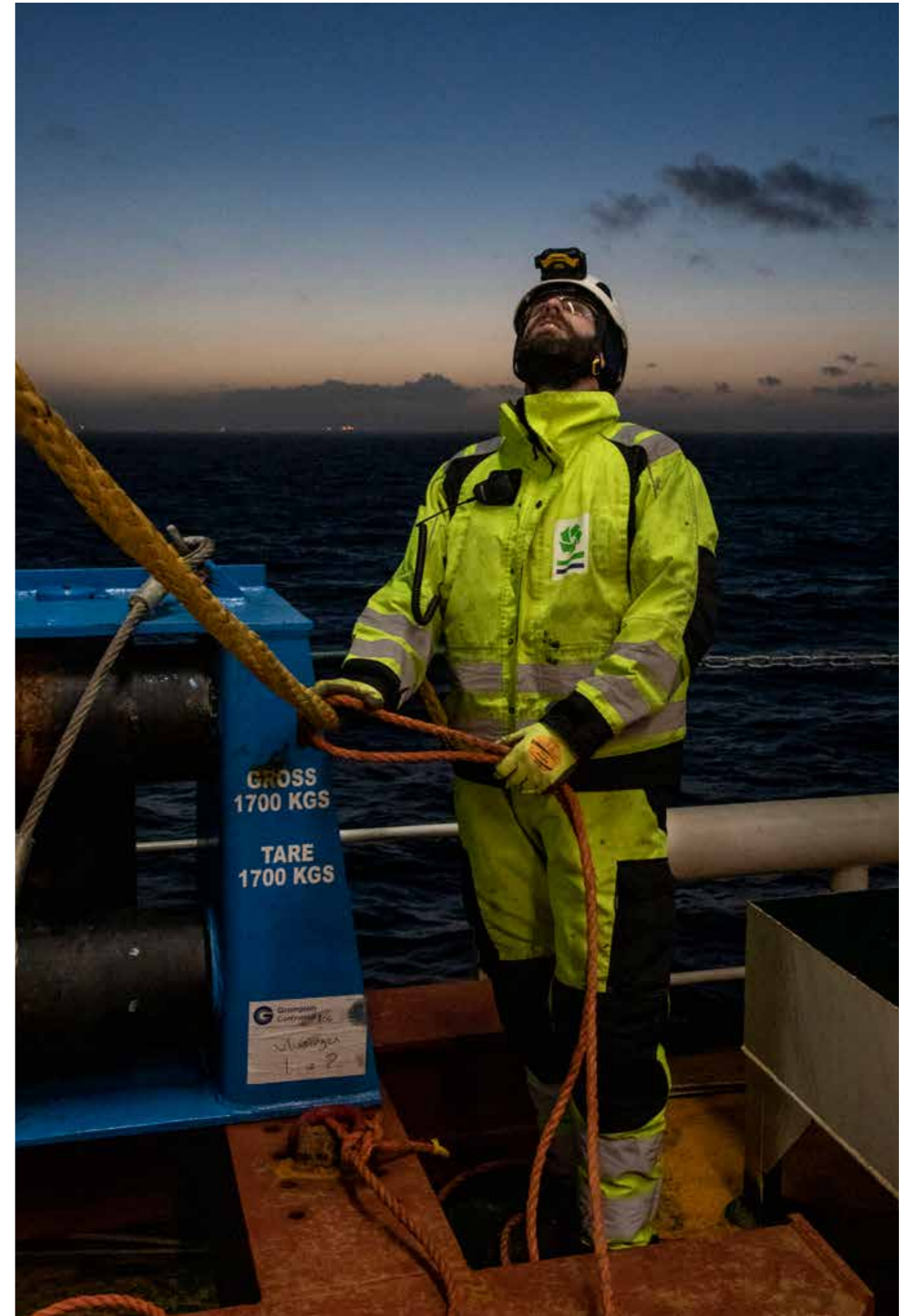
The achievement is a real 2018 highlight for DEME as Q1 Halfweg is the first platform we have decommissioned entirely on our own and it also showed the versatility of the 'Apollo', which could easily handle both the topside and four large piles in one transfer. The 'Apollo' offloaded the unit ashore at the disposal yard in Vlissingen where 98% will be recycled.

Decommissioning of 11 platforms in southern sector of the North Sea

We also secured another major frame contract from AF Offshore Decom for the decommissioning of four satellite platforms located in the UK sector of the southern North Sea. In 2017, we were already awarded a frame agreement for seven of these facilities, bringing the total to 11 platforms. We are responsible for the marine engineering and the removal and transportation of all 11 platforms. Engineering work continued throughout the year for the removal operations, offshore works could commence from 2020. 🌟



THE NETHERLANDS
The transport and installation of the Q10-A platform was the first project carried out with our new DP2 jack-up vessel 'Apollo'



SCALDIS

Scaldis is an international offshore contractor specialised in marine heavy lifting works and operates in five distinct offshore market sectors: civil construction, oil & gas, renewables, decommissioning and salvage.

2018 was a special year in the company's history as it welcomed the giant new heavy lift vessel 'Gulliver' into its fleet in April. With a staggering lifting capacity of 4,000 tonnes, 'Gulliver' is a fully self-propelled DP2 vessel which boasts a large deck space with skidding cranes for greater flexibility. 'Gulliver' can go into much deeper and exposed waters such as the northern part of the North Sea, which opens up new opportunities for us.

2018 was definitely 'a green year'. Scaldis is one of the leading specialists in installing substations at offshore wind farms and this is highlighted by the record number of projects carried out for the renewables industry this year.

BELGIUM

Norther OHVS topside

The Norther offshore substation in Belgium marked an important milestone for us as this was the first project for our powerful new vessel 'Gulliver'. The 370 MW Norther offshore wind farm is Belgium's largest wind farm.

We were awarded the contract to install the offshore high voltage substation from Engie Fabricom. The four-deck offshore substation was built at the fabrication yard in Hoboken, Belgium.

In August, the 1,300-tonne OHVS was loaded onto a transportation barge in Hoboken and after completing the sea-fastening, the topside started its journey to the installation location. When the transportation barge with the OHVS arrived in the field, the topside structure was lifted from the barge's sea-fastening grillages by our newly built heavy lift vessel 'Gulliver'. The topside was lifted above the monopile foundation, positioned and lowered safely onto the transition piece.

Denmark

Our first project of 2018 was the transport and installation of the Rentel offshore substation. The OHVS was built by STX in Saint Nazaire, France and arrived in Zeebrugge on January 20.

'Rambiz' and the transportation barge sailed from Zeebrugge on January 25 and after anchoring at the location, the transport barge was moored to the bow of the 'Rambiz'. The rigging was lifted and connected to the Rentel offshore substation, the sea-fastening was cut and the topside lifted from the barge. 'Rambiz' moved to the installation location and lowered the substation onto the foundation.

The Rentel offshore wind farm, located in the Belgian Exclusive Economic Zone of the North Sea, comprises 42 turbines.

Zeebrugge - Lifting Pierre Vandamme lock door

'Rambiz' was contracted to lift a lock door from the Pierre Vandamme lock complex and position it on the quayside at the port of Zeebrugge. The lock is the connection between the aft harbour and the sea and consists of four lock doors and four bridges. 'Rambiz' lifted the lock door and transported it in her hooks to the harbour and then positioned it on SPMTs.

DENMARK

Kriegers Flak offshore wind farm

In the first quarter we safely installed the gravity-based substation foundations for the Kriegers Flak offshore wind farm, each weighing between 10,000 and 14,000 tonnes. We engineered a unique installation method to safely install the gravity-based structures (GBS), which combined the capabilities of a semi-submersible barge that transported the GBS, together with the floating capacity of the structures and our heavy lift vessel 'Rambiz'.

Nearly two months after installing the gravity-based foundations, we then installed the two offshore substations (KFBE and KFA) of the Kriegers Flak wind farm for Energinet.

The KFBE substation was installed first and is the largest of the two substations. The installation consisted of two separate lifts: first the KFB topside and then the KFE module was placed on top. The smaller KFA substation was installed shortly afterwards. We used a tailor-made adjustable ringing configuration with Dyneemas that was suited to lift the two topsides with one rigging configuration.



Our new heavy lift vessel 'Gulliver' has a staggering lifting capacity of 4,000 tonnes.

THE NETHERLANDS

Flushing - Crane installation for DEME's new vessel 'Living Stone'

We used our pioneering new DP2 vessel to install a 250-tonne Huisman knuckle boom crane on the vessel.

We were tasked with lifting the knuckle boom crane off the transport barge onto the 'Living Stone' in Flushing. It was crucial to position the crane on its pedestal and keep the load in the crane hooks until all the bolts were installed and hand-tightened. This project highlights the investments we make in modernising and future-proofing the fleet: our new multipurpose vessel was assisted by 'Gulliver' – Scaldis' new flagship.

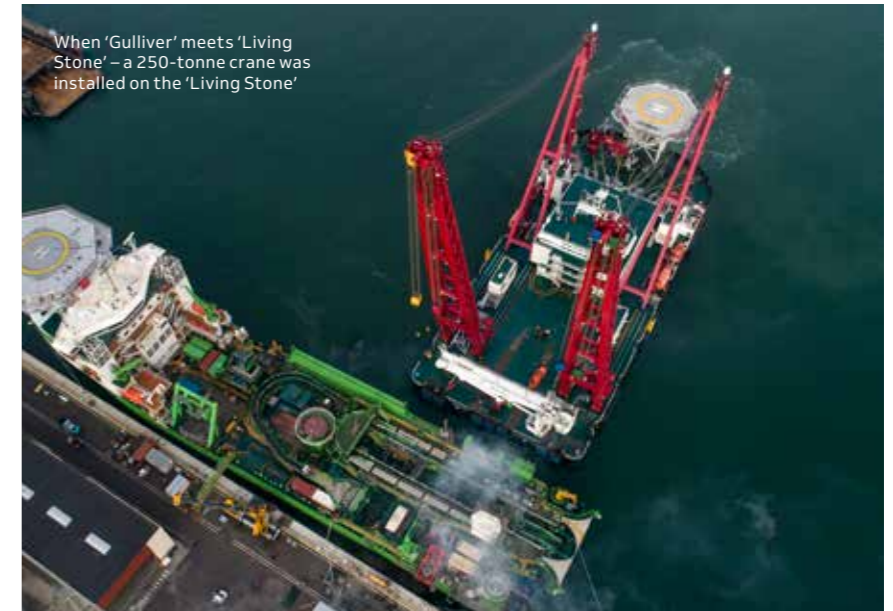
GERMANY

Flensburg – Deckhouses

The heavy lift vessel 'Gulliver' lifted and installed two 2,000-tonne deckhouses/accommodation blocks onto a brand-new ferry at the new shipyard in Flensburg, Germany. By using the vessel's dual crane lifting capacity, the shipyard is able to build bigger blocks and speed up the building process significantly.

Other

In a joint venture, we will be performing the decommissioning works for potentially 19 offshore gas platforms for a major oil and gas customer in the next few years. The engineering and preparation phases are almost finalised. The removal and disposal of nine abandoned platforms will get underway in 2019. ⚡



When 'Gulliver' meets 'Living Stone' – a 250-tonne crane was installed on the 'Living Stone'



Installation of gravity-based substation foundation for Kriegers Flak offshore wind farm



The first ever project for 'Gulliver': lifting and installing the Norther offshore high voltage substation



ENVIRONMENTAL

Our specialist environmental companies – DEME Environmental Contractors (DEC), de Vries & van de Wiel and Ecoterres – take a proactive approach to sourcing and developing potential remediation projects alongside their development partners.

The companies identify polluted industrial sites and approach the owners regarding the possibility of redeveloping them into new business parks, residential and recreational areas. Solutions offered include soil and polluted river decontamination and the treatment of polluted soils and dredged sediments. With DEC's specialist in water treatment, Purazur, solutions using innovative techniques are offered for cleaning water, with a focus on design, build and operation.

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BELGIUM - ANTWERP
The 66-ha Blue Gate site is remediated and transformed into a sustainable business park



BELGIUM - GHENT
DEC immobilises and removes the contents of a historic dump site at the UCB and Eastman Taminco premises

BELGIUM

Antwerp – Blue Gate

Blue Gate Antwerp is one of the most complex remediation projects DEME Environmental Contractors (DEC) has ever been involved in, both in terms of scale but also because of the number of parties involved in the public private partnership. It also highlights how we take a proactive approach to tackling these historically polluted sites.

Blue Gate Antwerp is a 66-ha blackfield site which is being transformed into a sustainable business park. Located in Antwerp's old petroleum harbour, the redevelopment is being undertaken in three

phases, which run until the end of 2036. The Blue Gate project was awarded to the Blue O'pen Consortium in 2016, including DEME and sustainability specialist BOPRO.

As the main contractor, we are responsible for all the remediation landscaping and infrastructure works and our subsidiary DIMCO has built a new bridge on the site.

Mineral oils, PAKs and heavy metals located in the first phase have been removed and we have carried out a substantial amount of earthmoving, as the more lightly polluted soils could stay on the site once they had been mapped and reported.

In the first phase we had to elevate almost 600,000 m³ of terrain, remediate 100,000 tonnes of polluted soils and move some 200,000 tonnes. Phase 1 of the remediation and infrastructure works is due to be finished in 2019.

Genk - Ford site

As part of the consortium Genk Green Logistics we won a public tender in 2017 to remediate a part (40 ha) of the former Ford site in Genk, which is situated alongside the Albert Canal. Following remediation, the site will be operated by Genk Green Logistics, which will establish one of the largest logistics hubs in the region. In the final quarter of 2018, DEC also won a tender to perform soil remediation on a further 70 ha of the site. Both sites are being prepared and work will get underway in 2019.

Dessel - Niras

In October 2018, NIRAS, the Belgian national institute for radioactive waste, awarded us a contract to do the preparation and earthmoving works for an underground nuclear storage facility for lightly contaminated material such as medical and demolition waste. Work is expected to take a year to complete. We have to level the site and construct three 400 m lagoons for the dewatering process. Some 85,000 m³ of earthmoving is due to take place.

Ghent - UCB and Eastman Taminco

DEC is remediating a historic dump site at the Eastman Taminco premises in Ghent. DEC aims to recycle most of the 180,000 tonnes and this will free up a large area of Taminco's site for future expansion.

BELGIUM

Ghent - Zonneberg Terranova

The remediation of the former gypsum dump site of Nilefos in the port of Ghent was completed early in the year. At the highest point of the site, the new 15 MW 'Zonneberg' solar farm is producing green energy for 4,000 households. Together with our joint venture partner, we acquired an 8 ha brownfield site from Bayer adjacent to the 'Zonneberg' in 2017. After a successful remediation campaign this was sold for redevelopment.



Ghent - New Docks

The first phase of the prestigious 'New Docks' project in the centre of Ghent was successfully completed in June 2018 and new homes are being built as we speak. The former docks were bought by project developers and we worked in partnership with them to remediate the ground to the highest environmental standards. Eventually the former industrial site will be transformed into a new city neighbourhood with 1,500 homes, businesses and recreational areas. 'New Docks' is also fully compliant with all the latest environmental regulations and it is designed to be entirely electricity neutral, using effluent as the main heating source. The second phase is expected to start up in mid-2019.



Balen - Nyrstar

In Balen, we are performing ongoing works involving the dehydration of Nyrstar's process residue. We are carrying out the tailing management and dewatering, as well as making filter cakes from the material for the mining and metals company.

Flemish Inland Waterways

We are working for De Vlaamse Waterweg (the Flemish inland waterway authority) as part of a seven-year contract, treating the dredged sediments at its centres throughout Belgium.

AMORAS

As part of a consortium we have been awarded a 15-year contract for the AMORAS facilities in Antwerp. This is a major design, construction and operation

contract for sediment treatment and storage in the port of Antwerp.

Treatment centres in Belgium, the Netherlands and France

With several soil and sediment recycling centres in Belgium and the Netherlands, DEC, de Vries & van de Wiel and Ecoterres treated 1.5 million tonnes of polluted soil and dredged sediments in 2018, making them the leading companies in this specialised activity in Belgium and the Netherlands.

ITALY

Taranto

Work began on a major contract to dredge three channels and to dewater the dredged material using an in-house designed soil wash installation at ILVA's steel plant in Taranto. The project is running smoothly with high production rates of 500-600 m³ in situ per day. This is the first time that a solution has been deployed where the dredge unit is directly in line with the washed-watering facility. The project is likely to run until May 2019 and treated volumes are expected to reach 60,000 m³.



NORWAY

Tønsberg - Valløy

Remediation work continued throughout the year on the Esso Norge project, a former refinery site located near Tønsberg, Norway. This challenging project highlights the close cooperation required between us, Exxon-Mobil and the Norwegian Environment Agency. Given the extremely strict health, safety and environmental standards, it was crucial to have the most stringent data management system in place. Data capture and a thorough measurement campaign are a vital part of the project. We have to minimise emissions and the project's impact on the environment.

In addition, we have to examine the site for the likely presence of UXO. So far, we have discovered four intact Second World War bombs, each ranging between 500 lbs and 1,000 lbs, as well as other UXO. Each bomb had to be detonated by the Norwegian army with the strictest safety procedures in place. The nearby village was evacuated and we had to build protective layers around the bombs to limit their impact when they were detonated.

Preparation works on the ExxonMobil site started in November 2015 and the project is due to be completed in mid-2019. Eventually, we expect to treat around 45,000 tonnes of acid tar and more than

250,000 tonnes of contaminated soil. The excavated acid tar has to be turned into good-quality, usable secondary fuel. The site will ultimately be used for commercial and residential purposes. ♻️

PURAZUR

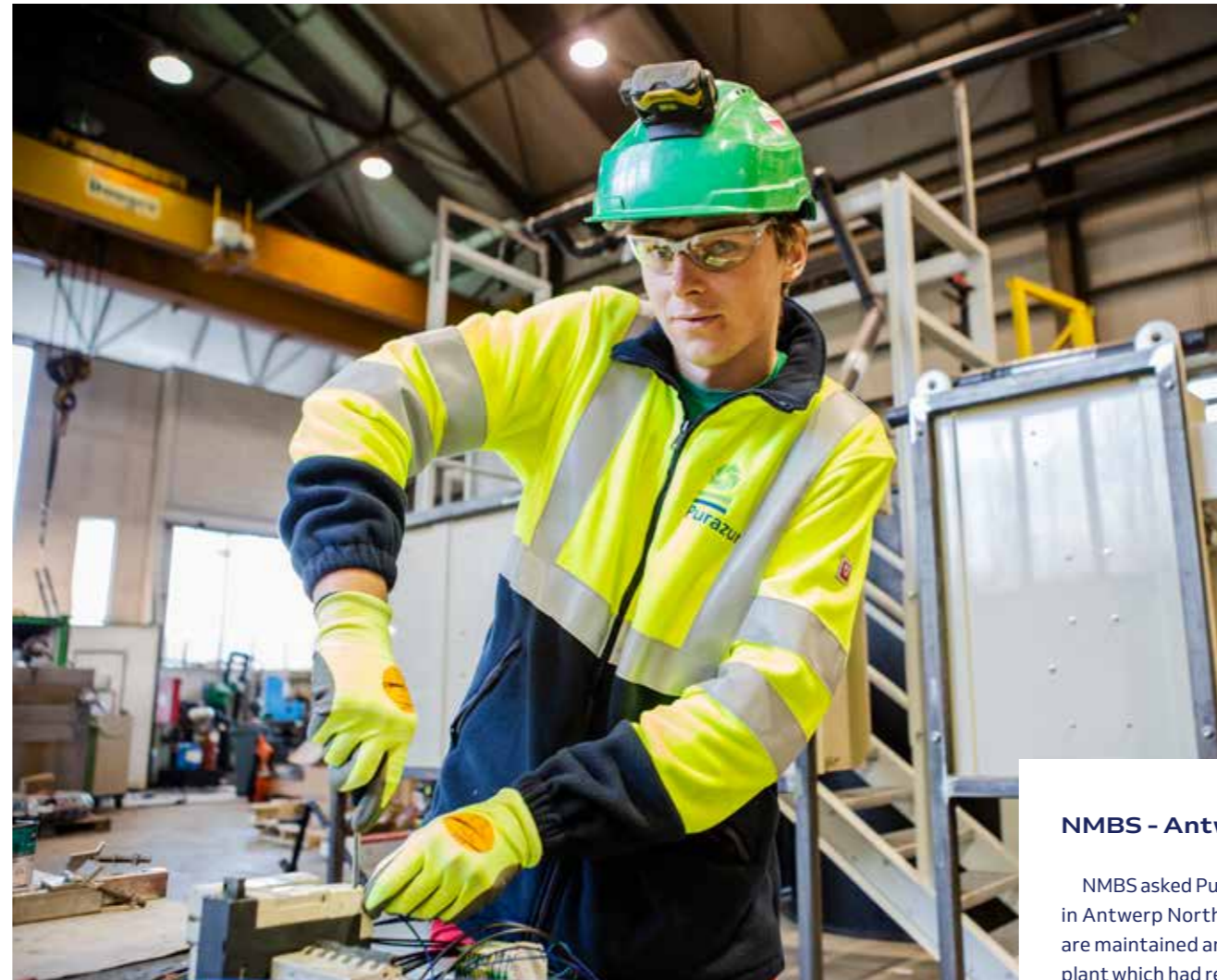
Purazur is DEME's subsidiary specialising in water treatment solutions.

Indaver - Antwerp

In April 2018, we successfully completed and handed over a new, physico-chemical water treatment installation to Indaver, an Antwerp-based waste treatment company. In a contract with a wide scope, we were responsible for the engineering, construction, testing and commissioning of the new wastewater plant. Indaver's previous facility, which cleans water streams coming from flue gas treatment from three rotary kiln incinerators, had reached the end of its lifetime.

Borealis - Kallo

A year-long project was completed when we delivered a physico-chemical wastewater treatment plant to the petrochemical company Borealis in Kallo, Belgium. We were responsible for the design, engineering, construction and commissioning of the project. Borealis Polymer specialises in the production of polypropylene starting from propene. The company's existing treatment unit had to be extended to meet environmental requirements. We were able to develop a compact design that could be incorporated into the limited space of the existing production facility.



NMBS - Antwerp

NMBS asked Purazur to build a new treatment plant at its facility in Antwerp North. This is for the traction workshop where trains are maintained and cleaned. This new facility replaces an existing plant which had reached the end of its lifetime. We are responsible for the engineering, construction and commissioning, as well as the first four years of maintenance. This new facility had to be robust and able to fit into a compact space.

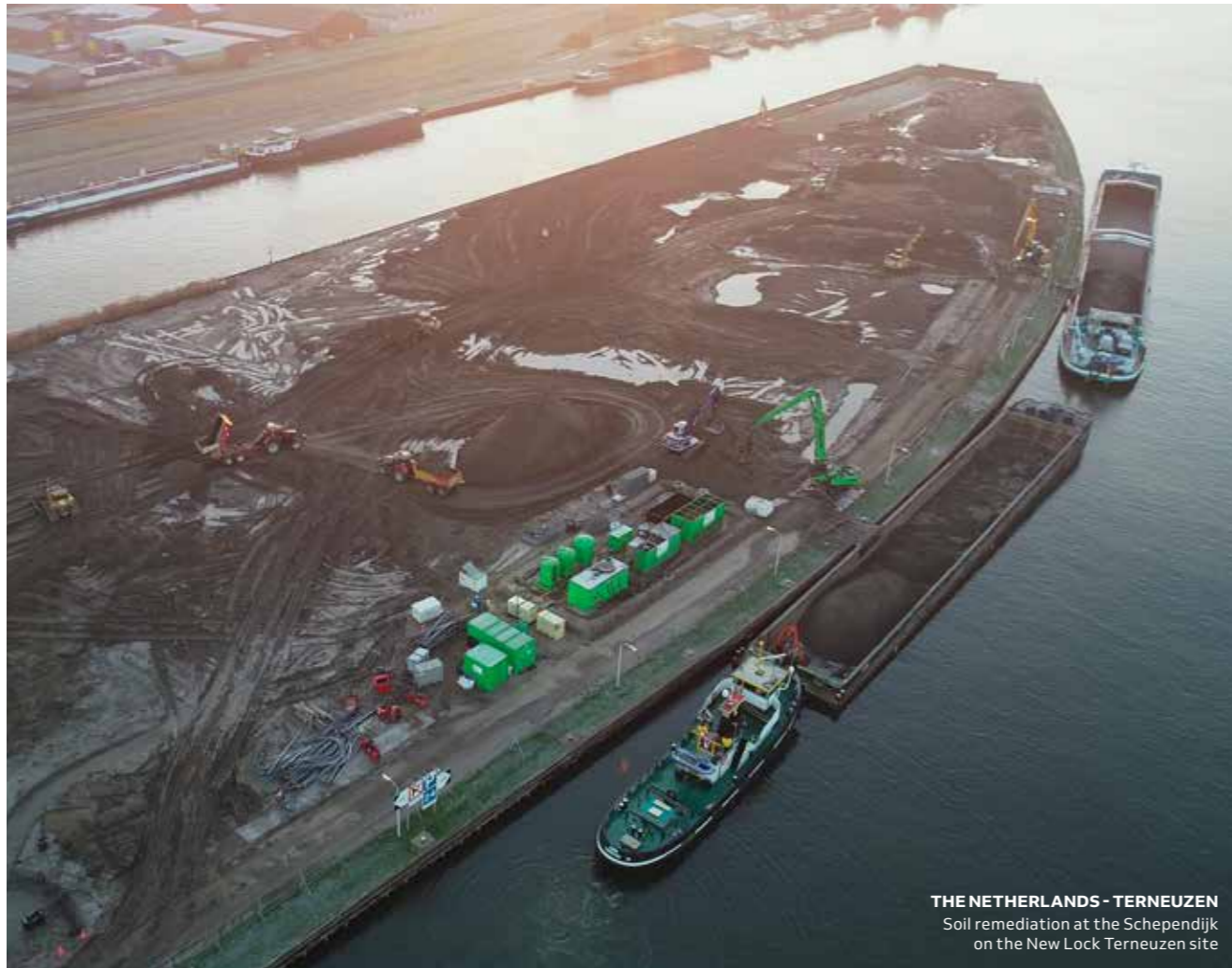
Belgoproces - Dessel

We have been awarded a contract to design and build a new water treatment plant for radioactive wastewater containing nitrogen from Belgoproces in Dessel (NIRAS). The project involves both the biological purification of the wastewater and the separation and dewatering of the produced bio-sludge. There is limited space and because the site is a highly controlled zone, a compact design has been developed based on skids to limit the on-site installation time as much as possible. We are building and testing the facility offsite. The water treatment plant will take approximately one year to build, with commissioning expected in 2019.

In a second project for Belgoproces – outside of the controlled zone – we are designing a unit to handle three wastewater streams, which have to be pumped across the site. The project got underway in 2018. \$

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We were able to develop a compact design that could be incorporated into the limited space of the existing production facility.
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THE NETHERLANDS - TERNEUZEN
Soil remediation at the Schependijk
on the New Lock Terneuzen site



FRANCE - CONDÉ-POMMERŒUL CANAL
Preparation works for cleaning
and widening the waterway

DE VRIES & VAN DE WIEL

De Vries & van de Wiel was involved in several major remediation projects throughout the Netherlands in 2018.

Milieupark Oost

Milieupark Oost is a public private partnership between us and the Council of Den Helder. In 2019, the former dumping area known as 'Insteehaven' will be completely filled so the area can be covered over. To realise these final works a special solar power shield will be deployed.

Furthermore, one of the two remediation areas of Milieupark Oost will be closed in 2019 and this area will be handed over to its owner in a specific shape so solar power can be developed there. Additionally we have secured a long-term contract for the remaining remediation area, which is set to be used to treat onshore and offshore waste, such as cuttings and mud from gas and oil drilling exploration.

New Lock Terneuzen - Schependijk

We performed remediation and reclamation works related to the New Lock Terneuzen mega project, which is underway in the Netherlands. As part of this work, 25,000 m³ of polluted material was removed from the Schependijk. This was then transported to our sister company DEC's soil and sediment treatment centre, cleaned and given a new life at the Milieupark Oost project mentioned earlier. As a result, fully remediated, historically polluted material has now become part of a new nature reserve. ♻️

ECOTERRES

Ecoterres performs dredging works, sediment management and soil remediation projects in Wallonia & Northern France. 2018 was a busy year overall, but Wallonia saw most of the activity in terms of remediation projects.

During 2018, we carried out studies concerning the depollution and redevelopment of heavily polluted industrial sites. These are very complex projects based on a design, build and finance approach. Depollution works are not expected to get underway until 2020.

We are also preparing for the new Ecoterres headquarters which will open in 2019. Located in Farciennes, near our Petit Try and Sedisol treatment centres, the new offices will be built to achieve carbon neutral standards using renewable energy and by initiating a reforestation programme.

After 10 years of partnership, Ecoterres and Vinci decided to part company in 2018 and end their collaboration within Extract-Ecoterres. Going forward Extract-Ecoterres will work under Vinci's authority. Ecoterres will continue its business development from its office based in Lambersart in northern France.

302,965 tonnes of polluted soils, sediments and sludges were treated in Ecoterres' centres in Wallonia and 152,322 tonnes in the Bruyère-sur-Oise centre in France (managed by its French sister company Extract-Ecoterres). Additionally, 145,922 tonnes of polluted soils, sediments and sludges were managed but treated in external centres. A total of 601,209 tonnes was processed. The company also installed 50,000 m² of HDPE liner, including geotextile and bentonite membrane.



BELGIUM
Ecoterres dredged 90,000 m³ of potentially contaminated sediments from the Walloon waterways



BELGIUM
302,965 tonnes of polluted soils, sediments and sludges were treated in Ecoterres' centres in Wallonia

TREATMENT OF POLLUTED SOILS, SEDIMENTS AND SLUDGES



■ **302,965**
tonnes in Ecoterres' centres in Wallonia

■ **152,322**
tonnes in the Bruyère-sur-Oise centre in France

■ **145,922**
tonnes in external centres

The company also installed **50,000 m²** of HDPE liner, including geotextile and bentonite membrane.

▲ million tonnes in 2018

Dredging and sediment management

Many key projects that had started up in 2017 continued in 2018. In the Walloon region, we dredged 90,000 m³ of potentially contaminated sediments from the Walloon waterways as part of a four-year framework contract. In Northern France, we dredged 40,000 m³ of contaminated sediments from the River Escaut. For these projects, all the sediments were dredged by our equipment and transported by our barges. The material was discharged into treatment centres with tailor-made high-density pumps.

Meanwhile in Dunkerque, we continued a four-year maintenance dredging project with our joint venture partner and sister company SDI. This includes our management of the sediments at a local centre within the port and represents some 20,000 m³ a year.

In a special project, concerning the reopening of a 6 km section of a canal between the Belgian border and the city of Condé in Northern France, we began building three large, dedicated landfills which will be used to store the contaminated sediments dredged from the canal. This job is expected to be finished at the end of 2019. We will then start dredging the canal in 2020 for a period of two years. In total 1.4 million m³ of polluted sediments will eventually be dredged.

Soil remediation projects

We continued depollution works at the Codami site in Manage, Wallonia. More than 60,000 tonnes of polluted soils have been handled by off-site techniques. This project is due to complete in June 2019.

At Tertre, we continued the remodelling and capping of a large heavily polluted industrial site using confinement techniques. A total of 100,000 tonnes of polluted soils have been managed on site in 2018. The Tertre project is expected to be finished in June 2019.

For a remediation project in Val-Benoit Liège, we excavated and treated 15,000 tonnes of polluted soils in our treatment centre in Filterres. This will allow the construction of a new building to go ahead.

In 2018, we finished the final remodelling and capping of a Class 2 waste landfill in Mont-St-Guibert in Wallonia. Additionally, several smaller projects, including in-situ water treatment and capping-off projects were also carried out.

Soil & sediment treatment centres

We have five soil and sediment treatment centres - four in Wallonia and one in France. In the course of the year these centres handled a total of 455,287 tonnes. The Wallonia centres were particularly busy following the introduction of a new law in 2018 concerning soil and sludge treatment.

- **Sedisol** (Farciennes, Belgium) – This is a treatment unit for contaminated industrial and dredged sediments, which brings a concrete and durable solution to the problem of the management of polluted sludge and sediments in the Walloon Region. Sedisol uses a wide range of tested techniques: dehydration, bioremediation and chemical stabilisation.
- **Cetraval** (Tubize, Belgium), **Petit Try** (Farciennes, Belgium) and **Filterres** (Seraing, Belgium) are treatment units for contaminated soils. These centres mainly use bioremediation and physico-chemical technologies.
- **Bruyère-sur-Oise** (France) is a combined treatment centre, which is designed to treat contaminated soil and dredged sediment. The centre is located along the River Oise.

All of the treatment centres are located on waterways and, in an effort to offer sustainable solutions, we encourage companies to carry out the transport of the polluted and treated soils/sediments by water. Some 106,515 tonnes, representing nearly 25% of the total were transported via waterways in 2018. ♻️

601,209



INFRA MARINE

With our subsidiary DIMCO we are involved in marine infrastructure and civil works that complement and reinforce the company's dredging activities.

These include the design and construction of hydraulic works such as jetties, port terminals, locks and weirs; infrastructural works such as bored, immersed and cut and cover tunnels, foundation and marine works for bridges or other constructions in a marine or fluvial environment, as well as civil works for harbour construction, dams and sea defences, canal construction, revetment, quay wall construction and shore protection. We also have a specialised engineering and design department, which can assist our customers with complex infrastructure projects.

DIMCO

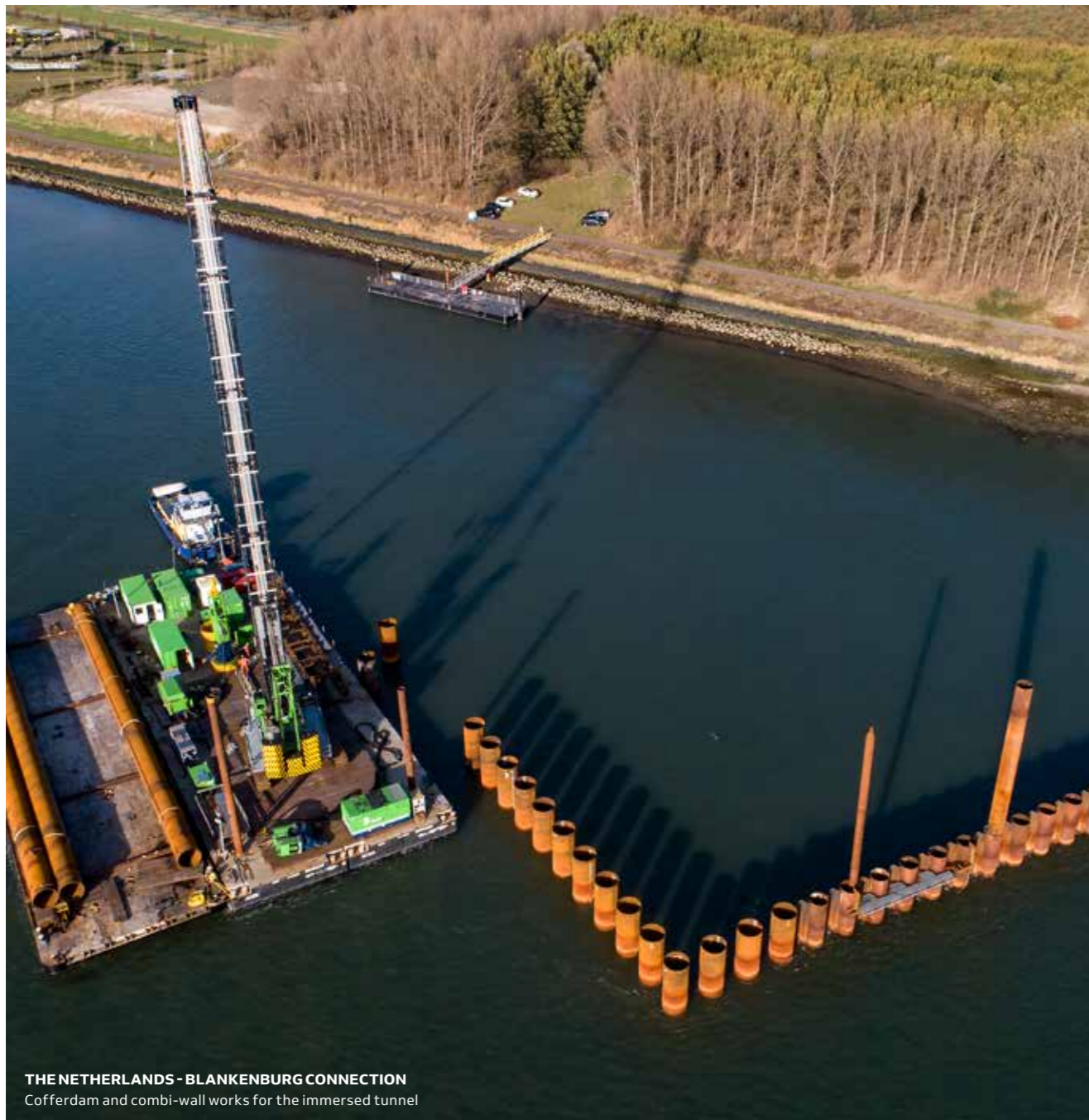
We were awarded several prestigious projects in The Netherlands - the RijnlandRoute, Blankenburg Connection and New Lock Terneuzen - and the preparations for and work on these mega projects have led to an exceptionally busy year.

In October 2018, a particular highlight for us was the financial close of the Blankenburg Connection. This project showcases the expertise of our entire Group, from our dredging and infra marine know-how to our highly specialised techniques for the construction of immersed and bored tunnels, to the supply of marine aggregates.

BELGIUM

Blue Gate Antwerp

Together with our sister companies DEC and Dredging International we worked at the Blue Gate Antwerp project. Blue Gate is a 66-ha blackfield site and one of the most historically polluted locations in Belgium, which is being transformed into a sustainable business park. We were responsible for the construction of a new bridge on the site.



THE NETHERLANDS - BLANKENBURG CONNECTION
Cofferdam and combi-wall works for the immersed tunnel



THE NETHERLANDS - NEW LOCK TERNEUZEN

THE NETHERLANDS

Blankenburg Connection

The ground-breaking ceremony for the Blankenburg Connection was celebrated on September 17, with the Dutch Minister of Infrastructure and Water Management, Cora van Nieuwenhuizen, marking the official start of the works. Just a month later, this once-in-a-generation project achieved financial close on October 17.

Rijkswaterstaat awarded the Public-Private Partnership project, 'A24 Blankenburgverbinding' to BAAK Blankenburg-Verbinding, a consortium consisting of us, Ballast Nedam and Macquarie. The broad scope comprises the design, build, financing and maintenance for a period of 20 years of the existing and new infrastructure, and includes an immersed tunnel.

The consortium team has started the basic design and will also execute the installation of the cofferdam and combi-wall for the immersed tunnel (Maasdeltatunnel).

The A24 Blankenburg Connection connects the A20 and the A15 and improves access to the Rotterdam region. Furthermore, the project consists of the construction of two junctions and the widening of the A20 between the A24 and the Kethelplein. This ambitious project originates from the Masterplan Rotterdam

Vooruit (2009), a vision for the development of the Rotterdam region that covers the period 2020- 2040.

The new Blankenburg Connection is planned to be operational at the end of 2024.

New Lock Terneuzen

Work on the New Lock Terneuzen is on schedule with several important milestones achieved in 2018.

The Dutch-Belgian joint venture Sassevaart, comprising us, Dredging International and construction companies BAM Contractors, BAM Infra Nederland and Van Laere, was awarded a design and construct contract for the new lock, as well as the maintenance contract for a period of two years.

The New Lock - which is 427 m long, 55 m wide and 16 m deep - is being constructed on the existing Terneuzen locks complex between the West and East locks. It is designed to provide better access to the ports of Ghent and Terneuzen as well as a faster flow of shipping between the Netherlands, Belgium and France.

At the end of 2018, the entire joint venture's project team moved to Terneuzen and the basic design has just been finalised.

One highlight in 2018 was the procurement of the steel lock doors and the 25-metre high lock gates, which were ordered a long time in advance to avoid any risk of delay.

Additionally, the construction of the new primary flood defence (combi-wall) was achieved by October 1st - another important milestone in the project. It was vital that this was done before the winter period. All of the remediation works to remove historical pollution have also been completed.

The first ship is expected to sail through the New Lock in 2022.

Spoorzone Delft

A decade-long project, Spoorzone Delft, was successfully handed over to the Dutch railway infrastructure authority, ProRail, on July 4th. This project involved the construction of a four-track rail tunnel with a length of 2,400 m.

River Lek - Renovation Stuw Ensemble

Together with two Dutch partners, we continued upgrading the lock and weir complex on the River Lek. The weirs were originally developed between 1960 and 1970. Works continued throughout 2018.

THE NETHERLANDS

RijnlandRoute

In 2017, as a member of the COMOL5 joint venture, we were awarded a 15-year design, build and maintenance contract for the RijnlandRoute, which is a new road connection from Katwijk, via the A44, to the A4 at Leiden in the Netherlands.

The COMOL5 joint venture consists of DIMCO, Mobilis, Croonwouter&dros and VINCI Construction Grands Projets and is responsible for the reconstruction of the Leiden West motorway junction and the construction of the 4 km N434 road, including a 2.2 km bored tunnel.

In 2018 the integrated joint venture team finalised the basic design and the detailed design will be completed this year. We are currently making preparations for the starting shaft for the massive tunnel bore machine, as well as laying the groundwork for the approaches to the bored tunnel. The tunnel bore machine is set to start work this summer, with boring taking place around the clock.

The RijnlandRoute is a very special project because it is destined to be the last bored tunnel in the Netherlands, so the project is also a great chance for the team's experts to pass on their specialist knowledge to young engineers.

Additionally, an important milestone for the broadening of the A4 project, which is now four lanes, has been achieved during 2018: all the necessary permits have been acquired, enabling the project to stay firmly on track.



TUNNEL BORING MACHINE FOR THE RIJNLANDROUTE

In early 2019, the finishing touches were made to the tunnel boring machine that will be boring the tunnel for the RijnlandRoute. The impressive 100-metre long and 11-metre high 'mobile factory' is being developed at the Herrenknecht factory in Schwanau, Germany.

The boring machine was transported by water from the factory in Schwanau to the Mammoet lifting company in Schiedam. From there, the components were brought to the start shaft in Leiden so that construction of the tunnel boring machine could begin in April 2019. The consortium is expected to begin boring the first tunnel during the summer of 2019.

Subterranean mobile factory

After the construction of the machine the tunnel boring crews are next. In shifts, they will operate the boring machine 24/7. The machine will bore the tunnel at a maximum depth of 32 metres below the surface and will simultaneously construct the tunnel itself. The production of over 15,000 prefab tunnel components is now also well underway. The boring machine will go into the ground at the start shaft near the A4 motorway (close to the Vlietland recreation area) and will come up in the reception shaft near the Leiden neighbourhood of Stevenshof. There, the road will continue below grade for approximately 1.4 km, after which it will connect to the A44 motorway. 📍

FLEET & OFFICES



155

FLEET

Dredging equipment

TRAILING SUCTION HOPPER DREDGERS

DP/DT Congo River	30,190 m ³
DP/DT Pearl River	24,130 m ³
DP/DT Nile River	17,000 m ³
DP2 Bonny River, DF	15,016 m ³
DP/DT Lange Wapper	13,700 m ³
DP/DT Uilenspiegel	13,700 m ³
DP/DT Breughel	11,796 m ³
DP/DT Brabo	11,650 m ³
DP/DT Breydel	11,296 m ³
Antigoon	8,460 m ³
DP/DT Scheldt River, DF	8,400 m ³
DP/DT Meuse River*	8,300 m ³
Artevelde	5,580 m ³
Marieke	5,600 m ³
Reynaert	5,580 m ³
Pallierter	5,320 m ³
Charlemagne	5,000 m ³
Victor Horta	5,136 m ³
Mellina	3,309 m ³
Minerva, DF	3,500 m ³
Orwell	2,575 m ³
River Thames*	2,300 m ³

CUTTER SUCTION DREDGERS

Spartacus, DF*	44,180 kW
D'Artagnan**	28,200 kW
Ambiorix**	28,200 kW
Al Jarraf	12,860 kW
Amazone	12,860 kW
Al Mahaar	11,224 kW
Rubens	10,896 kW
Ganga	6,250 kW
Cap Martin	5,541 kW
Dijle	2,632 kW
Vlaanderen XVI	1,786 kW
Seçkin	1,180 kW
Blanew	565 kW
Pixy	465 kW

BACKHOE DREDGERS

Samson	4,124 kW
Pinocchio	2,416 kW
Peter the Great	1,964 kW

BUCKET LADDER DREDGERS

Adriatico	900 l
Bayard	300 l
Belgica	175 l

SELF-PROPELLED SPLIT HOPPERS

DI 68 & DI 69	1,000 m ³
Pantagruelle	2,000 m ³
Sloeber & Pagadder	2,735 m ³
Vlaanderen VII & VIII	1,000 m ³
Bengel*	3,595 m ³
Deugniet*	3,595 m ³

WATER INJECTION DREDGERS

Parakeet 2 x 6,207 m ³ /h
Dhamra 2 x 6,000 m ³ /h

DREDGING PLOUGHS

Aramis & Buckingham
Parakeet
Dhamra

SPREADER & MULTIPURPOSE PONTOONS

DP/DT Bayard II
Adriatico
DP/DT Thornton 1
De Otter
Mattedoor

INLAND/RIVER DREDGERS

TRAILING SUCTION HOPPER DREDGERS	
Piet Hein	995 m ³
Zeeland	735 m ³

PLAIN SUCTION DREDGERS

Grinza 6 and 7	646 m ³
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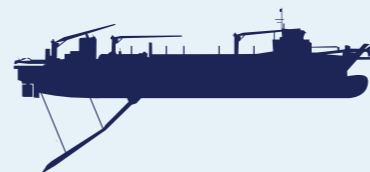
BARGE UNLOADING SUCTION DREDGERS

Texel	1,193 kW
Vlieland	679 kW

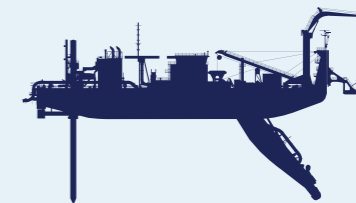
BACKHOE DREDGERS

IJburg	5 m ³
VW9, VW47, VW55	1.5-3 m ³

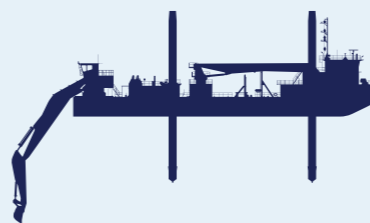
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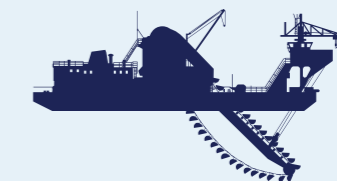
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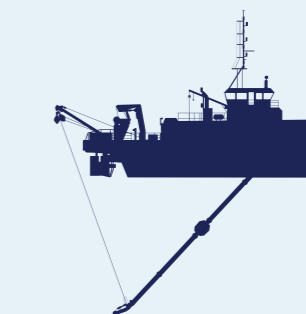
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5



6



7



8



* Under construction

** Incl. D.R.A.C.U.L.A.®power

*** Co-ownership

DF Dual Fuel Main Engines (LNG and Diesel oil)

DP Dynamic Positioning

DT Dynamic Tracking

FLEET

Offshore equipment

OFFSHORE INSTALLATION VESSELS

DP3 Orion*, DF Crane	30,000 t 5,000 t
DP2 Innovation Crane	8,000 t 1,500 t
DP2 Sea Installer Crane	7,400 t 900 t
DP2 Sea Challenger Crane	7,400 t 900 t
DP2 Apollo Crane	4,500 t 800 t
DP2 Thor Crane	2,600 t 500 t
DP2 Neptune Crane	1,600 t 600 t
DP2 Goliath Crane	1,400 t 400 t

JACK-UP PLATFORM

Vagant	1,000 t
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FALLPIPE VESSELS

DP2 Flintstone	17,500 t
DP2 Seahorse***	16,500 t
DP2 Rollingstone	11,500 t

CABLE INSTALLATION & MULTIPURPOSE VESSEL

DP3 Living Stone, DF Cable Installation	10,000 t
Rock Placement	12,000 t

HEAVY LIFTING EQUIPMENT

Gulliver***	4,000 t
Rambiz***	3,300 t

OFFSHORE MAINTENANCE & SERVICE VESSELS

Aquata	25 kts
Arista	25 kts

OFFSHORE PONTOONS

Bremen	10,000 t
Wismar	10,000 t
Stralsund	10,000 t

MULTIPURPOSE DRILLING VESSEL

DP2 Omalius	
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Environmental technology

FIXED SEDIMENT RECYCLING CENTRES

BELGIUM	
SRC Ruisbroek	SRC Zolder
SRC Zeebrugge	SRC Knippegroen
SRC Krankeloon	The Sedisol Centre
SRC Desteldonk	Fasiver

FIXED SOIL RECYCLING CENTRES

BELGIUM	THE NETHERLANDS
GRC Kallo	't Oost
GRC Bruges	
GRC Zolder	
Petit Try	
Filterres	
Cetraval	

MOBILE SEDIMENT TREATMENT PLANTS

Mobile filter presses
Mobile immobilisation plant

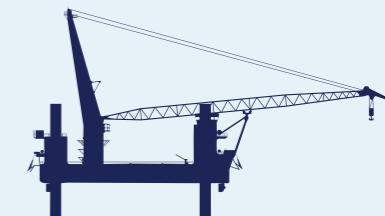
MOBILE SOIL TREATMENT PLANTS

Mobile soil washing plant 'SWI I'
Mobile soil washing plant 'SWI II'
Mobile soil washing plant 'SWI III'
Mobile soil washing plant 'SWI IV'
Mobile immobilisation plant

9



10



11



12



13



14



15



* Under construction
 ** Incl. D.R.A.C.U.L.A.®power
 *** Co-ownership

DF Dual Fuel Main Engines (LNG and Diesel oil)
 DP Dynamic Positioning
 DT Dynamic Tracking

OFFICES

BELGIUM

DEME NV

Haven 1025, Scheldedijk 30
2070 Zwijndrecht, Belgium
T +32 3 250 52 11
info.deme@deme-group.com
www.deme-group.com

DREDGING INTERNATIONAL NV

Haven 1025, Scheldedijk 30
2070 Zwijndrecht, Belgium
T +32 3 250 52 11
info.dredging@deme-group.com
www.deme-group.com/dredging

BAGGERWERKEN DECLOEDT & ZOON NV

Slijkensesteenweg 2
8400 Oostende, Belgium
T +32 59 24 21 40
info.bdc@deme-group.com
www.deme-group.com/bdc

DEME COORDINATION CENTER NV

Haven 1025, Scheldedijk 30
2070 Zwijndrecht, Belgium
T +32 3 250 54 14
info.deme@deme-group.com
www.deme-group.com

GEOSEA NV

Haven 1025, Scheldedijk 30
2070 Zwijndrecht, Belgium
T +32 3 250 53 12
info.geosea@deme-group.com
www.deme-group.com/geosea

GEOSEA MAINTENANCE NV

Haven 1025, Scheldedijk 30
2070 Zwijndrecht, Belgium
T +32 3 250 53 12
info.geoseamaintenance@deme-group.com
www.deme-group.com/geoseamaintenance

EVERSEA NV

Haven 1025, Scheldedijk 30
2070 Zwijndrecht, Belgium
T +32 3 250 53 12
info.eversea@deme-group.com
www.deme-group.com/eversea

COMBINED MARINE TERMINAL OPERATIONS WORLDWIDE NV (CTOW)

Haven 1025, Scheldedijk 30
2070 Zwijndrecht, Belgium
T +32 3 250 52 11
info@ctow.be
www.ctow.be

SCALDIS SALVAGE & MARINE CONTRACTORS NV

North Trade Building, 6th floor
Noorderlaan 133, bus 31
2030 Antwerpen, Belgium
T +32 3 541 69 55
mail@scaldis-smc.com
www.scaldis-smc.com

DEME ENVIRONMENTAL CONTRACTORS NV (DEC)

Haven 1025, Scheldedijk 30
2070 Zwijndrecht, Belgium
T +32 3 250 54 11
info.dec@deme-group.com
www.deme-group.com/dec

ECOTERRES SA

Avenue Jean Mermoz 3c
6041 Gosselies, Belgium
T +32 71 25 60 41
info.ecoterres@deme-group.com
www.deme-group.com/ecoterres

GROND RECYCLAGE CENTRUM NV

Haven 1025, Scheldedijk 30
2070 Zwijndrecht, Belgium
T +32 3 570 90 30
info@grckallo.be
www.grckallo.be

PURAZUR NV

Haven 1025, Scheldedijk 30
2070 Zwijndrecht, Belgium
T +32 3 253 30 11
info.purazur@deme-group.com
www.deme-group.com/purazur

DEME INFRA MARINE CONTRACTORS NV (DIMCO NV)

Haven 1025, Scheldedijk 30
2070 Zwijndrecht, Belgium
T +32 3 250 52 11
info.dimco@deme-group.com
www.deme-group.com/dimco

DEME BUILDING MATERIALS NV (DBM)

Haven 1025, Scheldedijk 30
2070 Zwijndrecht, Belgium
T +32 3 250 54 23
info.dbm@deme-group.com
www.deme-group.com/dbm

DEME CONCESSIONS NV

Haven 1025, Scheldedijk 30
2070 Zwijndrecht, Belgium
T +32 3 250 52 11
info.deme@deme-group.com
www.deme-group.com

DEME BLUE ENERGY NV (DBE)

Haven 1025, Scheldedijk 30
2070 Zwijndrecht, Belgium
T +32 3 250 52 11
info.dbe@deme-group.com
www.deme-group.com

GLOBAL SEA MINERAL RESOURCES NV (GSR)

Slijkensesteenweg 2
8400 Oostende, Belgium
T +32 3 250 52 11
info.deme@deme-group.com
www.deme-group.com

ANGOLA

DRAGAGEM ANGOLA SERVIÇOS LDA

Largo de Cambambe 2
Cruzeiro, Luanda, Angola
T +244 222 442 290
luanda.office@deme-group.com
www.deme-group.com

ARGENTINA

DREDGING INTERNATIONAL NV SUCURSAL ARGENTINA

Bartolomé Cruz 1967 4 piso A
CP 1638, Olivos
Buenos Aires, Argentina
T +54 11 3221 6740
info.diar@deme-group.com
www.deme-group.com

AUSTRALIA

DREDGING INTERNATIONAL (AUSTRALIA) PTY LTD

Suite 1/60, Brandl Street
Brisbane Technology Park
Eight Mile Plains, Brisbane,
Queensland 4113, Australia
T +61 7 3340 4040
info.diau@deme-group.com
www.deme-group.com

GEOSEA AUSTRALIA PTY LTD

Suite 1/60, Brandl Street
Brisbane Technology Park
Eight Mile Plains, Brisbane
Queensland 4113, Australia
T +61 7 3340 4040
info.geosea@deme-group.com
www.deme-group.com/geosea

BAHRAIN

DREDGING INTERNATIONAL NV BRANCH BAHRAIN

Building 1398, Flat 3460
Road 4626, Block 346
PO Box 18146
Manama/Sea Front, Bahrain
T +973 1 7714361
di.bahrein@deme-group.com
www.deme-group.com

BRAZIL

DRAGABRAS SERVIÇOS DE DRAGAGEM LTDA

Rua Lauro Muller, No. 116, sala 2402
Botafogo, Rio de Janeiro, RJ
Brasil
CEP 22290-160
BR
T +55 21 22 92 83 40
info.dragabras@deme-group.com
www.deme-group.com/dragabras

COLOMBIA

DREDGING INTERNATIONAL N.V. SUCURSAL COLOMBIA

Avenida Carrera 19#95 - 37/55 - Ofic.708,
CP 110221 Bogotá, D.C., Colombia
T +57 16369677
info.dico@deme-group.com
www.deme-group.com

CYPRUS

DREDGING INTERNATIONAL SERVICES (CYPRUS) LTD

4 Menandrou Street
Gala Tower 1st Floor, Office 101
1066 Nicosia, Cyprus
T +357 22 421 111
dredginginternationalservicescyprus.com.cy

DREDGING INTERNATIONAL (CYPRUS) LTD

4 Menandrou Street,
Gala Tower 1st Floor, Office 101
1066 Nicosia, Cyprus
T +357 22 421 111
dredginginternationalcyprus.com.cy

BELLSEA LTD

Lampousas 9
Agios Andreas
1095 Nicosia, Cyprus
T +357 22 421 111
www.dredginginternationalcyprus.com.cy

NOVADEAL LTD

Makariou III & Ag. Elenis 36
33 Galaxias Building, 3rd floor, Flat/Office 305
1061 Nicosia, Cyprus
T +357 22 421 111
www.dredginginternationalcyprus.com.cy

DENMARK

A2SEA A/S

Kongens Kvarter 51
7000 Fredericia, Denmark
T: +45 7592 8211
A2sea@deme-group.com
www.a2sea.com

FRANCE

SOCIETE DE DRAGAGE INTERNATIONAL SA (SDI)

Parc du Pont Royal
251 Avenue du Bois, Bâtiment I
59130 Lambersart, France
T +33 3 20 10 87 30
info.sdi@deme-group.com
www.deme-group.com

GERMANY

NORDSEE NASSBAGGER-UND TIEFBAU GMBH

GMBH Anne-Conway-Strasse 9
28359 Bremen, Germany
T +49 421 33 00 59 0
info.nordsee@deme-group.com
www.deme-group.com/nordsee

OAM-DEME MINERALEN GMBH

Barkholt 12
22927 Grosshandsdorf, Germany
T +49 4102 69 88 0
info@oam-deme.eu
www.oam-deme.eu

GEOSEA INFRA SOLUTIONS GMBH

Anne-Conway-Strasse 6
28359 Bremen, Germany
T +49 421 33 00 59 500
info.geosea@deme-group.com
www.deme-group.com/geosea

GHANA

BELLSEA

2 Ankuah Mensah Street
Dzorwulu, Accra, Ghana
T +233 320 766 131
F +233 320 766 132
info@deme-group.com
www.deme-group.com

HONG KONG

DREDGING INTERNATIONAL NV BRANCH HONG KONG

Level 43 AIA Tower
183 Electric Road, North Point
Hong Kong
T +852 2805 2326
info.dihk@deme-group.com
www.deme-group.com

FAR EAST DREDGING LTD (FED)

Unit 503, Tower 2, Silvercord
30 Canton Road, Tsimshatsui
Kowloon, Hong Kong
T +852 2805 2326
info.dihk@deme-group.com
www.deme-group.com

INDIA

INTERNATIONAL SEAPORT DREDGING PVT LTD (ISD)

5th Floor, Challam Towers, New No. 113
Dr Radhakrishnan Salai
Chennai 600 004, India
T +91 44 432 399 00
isdpl@deme-group.com
www.isdpl.com

INDONESIA

PT DREDGING INTERNATIONAL INDONESIA

22nd Floor, Satrio Tower
Jl. Prof. Dr. Satrio Kav. C4
Jakarta 12950, Indonesia
T +62 21 3110 0908
info.diid@deme-group.com
www.deme-group.com

ITALY

SOCIETA ITALIANA DRAGAGGI SPA (SIDRA)

Via Carlo Zucchi 25, 00165
Roma, Italy
T +39 06 66 04 95 1
info.sidra@deme-group.com
www.deme-group.com/sidra

DEME ENVIRONMENTAL CONTRACTORS NV BRANCH ITALY

Via Carlo Zucchi 25, 00165
Roma, Italy
T +39 06 66 04 95 1
info.dec@deme-group.com
www.deme-group.com/dec

LATVIA

DREDGING INTERNATIONAL NV BRANCH LATVIA

Kr. Valdemara street 21, c/o PwC
1010 Riga, Latvia
info.dilv@deme-group.com
www.deme-group.com

LUXEMBOURG

DREDGING INTERNATIONAL LUXEMBOURG SA

136, Route d'Arlon
L-1150 Luxembourg
T +352 26 39 30 55
info.deme@deme-group.com
www.deme-group.com

GEOSEA LUXEMBOURG SA

136, Route d'Arlon
L-1150 Luxembourg
T +352 26 39 30 55
info.geosea@deme-group.com
www.deme-group.com/geosea

GEOSEA PROCUREMENT & SHIPPING LUXEMBOURG SA

136, Route d'Arlon
L-1150 Luxembourg
T +352 26 39 30 55
info.geosea@deme-group.com
www.deme-group.com/geosea

MARTIME SERVICES & SOLUTIONS SA

136, Route d'Arlon
L-1150 Luxembourg
T +352 26 39 30 55

SOCIETE DE DRAGAGE LUXEMBOURG SA

136, Route d'Arlon
L-1150 Luxembourg
T +352 26 39 30 55

MALAYSIA

DREDGING INTERNATIONAL (MALAYSIA) SDN. BHD.

Level 33, Ilham Tower, No. 8 Jalan Binjai
50450 Kuala Lumpur, Malaysia
T +60 3 2117 5368
info.dimy@deme-group.com
www.deme-group.com

MEXICO

DREDGING INTERNATIONAL MÉXICO SA DE C

Calle Montecito N° 38, Piso 33, Oficina 27,
Col. Nápoles,
CP 03810, Distrito Federal, México
México
T +52 55 9000 76 99
info.dimx@deme-group.com
www.deme-group.com

MOZAMBIQUE

DRAGAMOZ LDA

Avenida 24 de Julho 370, 3 Andar Dereita
Caixa Postal 96, Maputo, Mozambique
T +258 21 49 47 56
info@deme-group.com
www.deme-group.com

NIGERIA

DREDGING INTERNATIONAL SERVICES NIGERIA LTD (DISN)

35A Alfred Rewane Road, Falomo Ikoyi
Lagos, Nigeria
T +234 1 463 08 97
info.disn@deme-group.com
www.deme-group.com/disn

NORWAY

DEME ENVIRONMENTAL CONTRACTORS NV BRANCH NORWAY

Dronning Eufemiasgt. 8 C/O PWC
0191 Oslo, Norway
www.deme-group.com

PANAMA

DREDGING INTERNATIONAL DE PANAMÁ SA

Edificio P.H. Sortis Business Tower Oficina
No. 2004
Calle 57 Este, Obarrio
Panamá
T +507 320 43 04
T +507 320 43 33
info.dipa@deme-group.com
www.deme-group.com

PHILIPPINES

DREDGING INTERNATIONAL NV BRANCH PHILIPPINES

Unit 4048 40th floor
PBCOM Tower
6795 Ayala Avenue cor. V.A. Rufino St.
Makati City 1226, Philippines
T +632 7899077
info.diph@deme-group.com
www.deme-group.com

PORTUGAL

DREDGING INTERNATIONAL NV BRANCH PORTUGAL

Av. António Augusto Aguiar, 19 - 4º sala B
1050-012 Lisboa
Portugal
info.dipt@deme-group.com
www.deme-group.com

QATAR

MIDDLE EAST DREDGING COMPANY QSC (MEDCO)

P.O. Box 24745
Al Fardan Plaza Building, 4th floor
Al Sadd Street (area 39)
Doha, Qatar
T +974 4442 67 62
info@medcodredging.com

RUSSIA

MORDRAGA LLC

Italyanskaya st. 17, lit. A, office 601
191186, Saint Petersburg
Russian Federation
T +7 812 703 51 00
info@mordraga.ru
www.deme-group.com/mordraga

SAUDI ARABIA

DREDGING INTERNATIONAL SAUDI ARABIA C. LTD.

P.O. Box 257
Dammam 31411
Kingdom of Saudi Arabia
T: +966 13 810 1758
info.disa@deme-group.com
www.deme-group.com

SINGAPORE

DREDGING INTERNATIONAL ASIA PACIFIC PTE LTD (DIAP)

10 Kallang Avenue, #09-11 Aperia Tower 2
Singapore 339510
T +65 68 63 21 08
info.diap@deme-group.com
www.deme-group.com

SPAIN

DREDGING INTERNATIONAL ESPANA SA

Paseo de Castellana 141, planta 5
28046 Madrid
España
T +34 9 15726481
info.dies@deme-group.com
www.deme-group.com

SWEDEN

DEME ENVIRONMENTAL CONTRACTORS NV BRANCH ZWEDEN

C/O Advokatbyran Ranstam & Partners
Stortorget 29
211 34 Malmö, Sweden

TAIWAN

DREDGING INTERNATIONAL NV BRANCH TAIWAN

5th Floor, No. 3, Lane 51, Section 1
Da'An Road, Da'An District
Taipei City 106, Taiwan (R.O.C.)
T +886 2 2346 0408
info.ditw@deme-group.com
www.deme-group.com

THE NETHERLANDS

TIDEWAY BV

Minervum 7442, 4817 ZG Breda
P.O. Box 7074, 4800 GB Breda
The Netherlands
T +31 76 520 41 40
info.tideway@deme-group.com
www.deme-group.com/tideway

AANNEMINGSMAATSCHAPPJ DE VRIES & VAN DE WIEL BV

Toestenbord weg 11
1030 BG Amsterdam, The Netherlands
T +31 20 219 15 15
info.vw@deme-group.com
www.deme-group.com/vw

DEME BUILDING MATERIALS BV

Europaweg-Zuid 4
Haven 9890, 4380 PD Vlissingen-Oost
P.O. Box 117, 4380 AC Vlissingen
The Netherlands
T +31 113 67 66 00
info.dbm@deme-group.com
www.deme-group.com/dbm

DEME INFRA MARINE CONTRACTORS BV (DIMCO BV)

Kilkade 2, 3316 BC Dordrecht
Postbus 202
3300 AE Dordrecht
The Netherlands
T +31 78 632 10 20
info.dimconl@deme-group.com
www.deme-group.com/dimco

UKRAINE

DREDGING INTERNATIONAL UKRAINE LLC

Ul. Otamana Golovatogo Street 37, Office 501
65003 Odessa, Ukraine
T +38 096 726 58 16
info.deme@deme-group.com
www.deme-group.com

UNITED ARAB EMIRATES

DREDGING INTERNATIONAL NV BRANCH ABU DHABI

P.O. Box 53804
02 Floor, Unit M021
Alia Tower, Sedar Building
Abu Dhabi, United Arab Emirates
T +971 2 622 7662
info.adh@deme-group.com
www.deme-group.com

DREDGING INTERNATIONAL NV BRANCH DUBAI

Zainal Mohebi Plaza, 2nd floor, office 216
Karama, P.O. BOX 25569
Dubai, United Arab Emirates
T +971.4.3975650 - F +971.4.3975855
info.didxb@deme-group.com
www.deme-group.com

UNITED KINGDOM

A2SEA LTD

15 Appold Street
London, EC2A 2HB
T: +44 (0)
7585 772727
A2sea.salesUK@deme-group.com
www.a2sea.com

NEWWAVES SOLUTIONS LTD

Ibex House, Baker Street, Weybridge
KT13 8AH Surrey, United Kingdom
T +44 20 7531 1904
info@newwaves-solutions.co.uk
www.deme-group.com/newwaves

DEME BUILDING MATERIALS LTD

Ibex House, Baker Street, Weybridge
KT13 8AH Surrey, United Kingdom
info.dbm@deme-group.com
www.deme-group.com/dbm

DEME ENVIRONMENTAL CONTRACTORS UK LTD

Ibex House, Baker Street, Weybridge
KT13 8AH Surrey, United Kingdom
info.dec@deme-group.com
www.deme-group.com/dec

VIETNAM

DREDGING INTERNATIONAL NV BRANCH VIETNAM

Suite 1101, 11th Floor
Eurowindow Multicomplex Building
No. 27 Tran Duy Hung Street
Trung Hoa Ward, Cau Giay District
Hanoi, Vietnam
T +84 4 3221 6393
info.divn@deme-group.com
www.deme-group.com

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